NATIONAL OPEN UNIVERSITY OF NIGERIA

COURSE CODE : NSS201

COURSE TITLE:
FOUNDATIONS OF NURSING

COURSE GUIDE

NSS201
FOUNDATIONS OF NURSING

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Introduction

NSS201: Foundations of Nursing course is a two (2) unit credit course meant for students who are pursuing B.Sc degree. It is one of the courses meant to lay your desired foundation for choice of nursing as a course of study and profession. It comprise of the bedrock of acquisition of necessary elementary skills amidst health care reforms. The changes in response to social, political, economic factors as well as health technology and advances in health care system call for reform in the delivery of health care have greatly influenced the setting where nursing is practiced coupled with the recipient of care itself.

What You Will Learn in this Course

The course provides a broad base understanding of the facts that the concepts of disease, health needs and health promotion that exist in a sociocultural, institutional and political vacuum do reflect the values, beliefs, knowledge and practices shared by the people, professionals and other influential groups. It therefore identifies the various health needs of the people and adapted the three (3) levels of health promotion be it primary, secondary and tertiary to differentiate between the concepatients of disease prevention and health promotion.

The ability to assess the patient is one of the most important skills of the nurse regardless of the practice setting. All settings where nurses provide care, eliciting a complete history and using appropriate assessment skills are critical to identifying physical and psycho-emotional problems concern experienced by the patient. Patient assessment include the five (5) steps in nursing process and is necessary to obtain data that will enable the nurse to make a nursing diagnosis, identifying and implementing nursing intervention and assess their effectiveness.

The course looks at the individual and his health care utilizing the holistic approach, cultural diversity, safety and comfort of care, sexuality and gender issues as well as the ethical issues in relation to nursing practice. It also identifies the legal responsibilities and their implications for nursing practice and impact on the nursing profession.

Course Aim

The aim of the course is to give you an understanding on the basic concepts and issues necessary for professional practice. This will be achieved through:

1. Verbal discussion and in writing the fundamental physiological, psychological, social and environmental factors that contribute to a state of health or disease in an individual.
2. Demonstrate proficiently all the nursing skills acquired during the course.

Course Objectives

To achieve the aims set out above, the course sets the overall objective. In addition, each unit has specific objectives stated at the beginning of a unit. Learners are advised to read them carefully before going through the unit. You will have to refer to them during the course of your study to monitor your progress. You are encouraged to always refer to the Unit objectives after completing a Unit. This is the way you can be certain that you have done what was required of you in the unit**.**

The wider objectives of the course are set below. By meeting these objectives, you should have achieved the aims of the course as a whole.

On successful completion of the course, you should be able to:

1. Assess the state of health of an individual, either in their homes or health centers by physical examination.
2. Explain the importance of the Nurse Code of ethics in the professional practice of a nurse.
3. Educate patients on the basic tenets of a healthy living.
4. Apply pain-relieving measures such as application of heat or cold, removal of physical agents causing discomfort, proper alignment of body protection from infusion agents, and administration of pain relieving drugs.
5. Make the common types of bed used for nursing e.g. simple bed, admission bed, post operation bed, fracture bed amputation bed and cardiac bed.
6. Discuss the legal implications of selected issues and problems in health care.
7. Discuss related legal principles as they affect nursing care and nursing education.
8. Discuss four (4) models of stress as they relate to nursing practice.
9. Describe stress-management techniques that nurses can help patients/clients and use and that can benefit nurses themselves.
10. Describe sexual development and concerns across the life span.
11. Identify factors influencing sexuality and common illness affecting it.
12. Explain the cyclical nature of the chain of infection and factors involve at each stage.

Study Units

This course is made up of the following units:

Module 1

Unit 1 Health and Human Needs I
Unit 2 Health and Human Needs II
Unit 3 Concept of Health and Illness
Unit 4 Promoting Health
Unit 5 Assessing Health I (Vital Signs)

Module 2

Unit 1 Assessing Health II (Vital Signs Contd).
Unit 2 Assessing Health III (History Taking and Physical Examination)
Unit 3 Diagnostic Measures in Patients Care
Unit 4 Providing Safety and Comfort I
Unit 5 Providing Safety and Comfort II (Pain Management)

Module 3

Unit 1 Infection Control
Unit 2 Ethical Issues in Nursing
Unit 3 Legal Aspects of Professional Nursing I
Unit 4 Legal Aspects of Professional Nursing II
Unit 5 Sexuality and Gender Issues

Module 4

Unit 1 Stress and Adaptation
Unit 2 Nursing and Society
Unit 3 Health Education

Textbooks and References

Cox, C.L. (1995). Health and Human Needs. In H. B. M. Heath (ed.). *Potters and Perry's Foundations in Nursing Theory and Practice*. Italy: Mosby, An Imprint of Times Mirror International

Coy, J. (1998). Comfort and Sleep. In S. C. Delaune & P.K. Ladner, (eds.). *Fundamentals of Nursing, Standard and Practice.* Albany: Delmar Publishers.

Furest, *et al* (1974). Fundamentals of Nursing, J.B. Lippincott Co., Philadelphia.

Kozier, B., Erb, G., Berman, A.U. & Burke, K. (eds.). (2000). Health, Wellness and Illness. *Fundamental of Nursing: Concepts Process and Practice* (6th ed.). New Jersy: Prentice Hall, Inc.

Assignment File

The assignment file will be the Tutor Marked Assignment (TMA) which will constitute part of the continuous assessment (CA) of the course. There are 20 assignments in this course with each unit having an activity/exercise for you to do to facilitate your learning as an individual.

Assessment

There are two aspects to the assessment of the course. These are the Tutor marked assignment and written examination In tackling the assignments, you are expected to apply information, knowledge and strategies gathered during the course. The assignments must be turned in to your tutor for formal assessment in accordance with the stated presentation schedules. The works you submit to your tutor for assessment will count for 30% of your total course work.

At the end of the course you will need to sit for a final written examination of three hour's duration. This examination will also count for 70% of your total course mark.

Tutor-Marked Assignment (TMA*)*

There are 20 tutor-marked assignments in the course. You are advised in your own interest to attempt and submit the assignments at the stipulated time in study centre. You will be able to complete the assignments from the information and materials contained in your reading and study units. There is other self activity contained in the instructional material to facilitate your studies. Try to attempt it all. Feel free to consult any of the references to provide you with broader view and a deeper understanding of the course. The assignment accounts for 30% of the total assessment pack for the course.

Continuous self-assessment materials will be enclosed with the instructional materials so that you can monitor your progress through the course.

How to Get the Most Out of the Course

In distance learning, the study units replace the university lecture. This is one of the greatest advantages of distance learning. You can read and work through specially designed study materials at your own pace and at time and place that suit you best. Think of it as reading the lecture notes instead of listening to a lecturer. In the same way that a lecturer might set you some reading task, the study units tell you when to read your other material. Just as a lecturer might give you an in-class exercise, your study units provide exercise for you to do at appropriate points.

Here is a list of practical strategy for working through the course:

- Read the course guide thoroughly.
- Organize a study schedule.
- Stick to your own created study schedule.
- Read the introduction and objectives very well.
- Assemble your study materials.
- Work through the unit.
- Keep in mind that you will learn a lot by doing all your assignment carefully.
- Review the stated objectives.
- Don’t proceed to the next unit until you are sure you have understood the previous unit.
- Keep to your schedules of studying and assignments.
- Review the course and prepare yourself for the final examination.

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MODULE 1

UNIT 1 HEALTH AND HUMAN NEEDS

CONTENTS

1.0 INTRODUCTION

Health and human needs are inextricably interrelated. Humans need a number of essentials to survive. The assertion that all individuals irrespective or age, sex, race or creed have needs that they strive to satisfy is therefore is no exaggeration. The Cambridge International Dictionary of English defined ‘Needs’ as things one must have or things required to live a satisfactory life i.e. things essential to life and quality living. As a corollary, illness or risk of illness occurs when individuals are not able to satisfy one or more of their basic needs.

Since the soul of nursing is caring, much of our career is weaved around helping people to satisfy these needs. This is consistent with the position of that renowned nurse theorist, Virginia Anderson, who submitted that Nursing is primarily assisting the individual (sick or well) in the performance of those activities contributing to health, or its recovery (or to a peaceful death) which he would have performed unaided if he had the necessary strength, will, or knowledge, as well as helping the individual to be independent of such assistance as soon as possible. Achieving this is however no mean work. This is because human beings

are not merely physiological creatures and their needs are multifaceted and multidimensional. Besides, every individual is a unique being and as such requires some unique needs in addition to the basic human needs. This unit therefore takes a detailed look at human needs with a view to enhancing nurses' ability to help their clients meet these varied needs.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- state the basic human needs
- list at least five physiologic needs of all people
- describe relationships among the different levels of needs
- relate the achievement of basic human needs to health status
- discuss the nurses' role in assessing and meeting patient/client's need.

3.0 MAIN CONTENT

3.1 Overview of Individual Needs

Human needs are many. They encompass both physical and non-physical elements needed for human growth and development, as well as all those things humans are innately driven to attain. Human needs therefore can be broadly classified into two major groups viz: Primary needs and Secondary needs (Rosdahl, 1995).

Primary needs otherwise known as Basic needs, are survival needs. They must be met to sustain life. Put differently, their absence or non-satisfaction portends great threat to human existence. As such they take precedence over other needs called secondary needs. The beyond intractability project (2003) in their write-up on Leadership and Human Behaviour states that basic needs are physiological, such as food, water, and sleep; as well as psychological, such as affection, security, and self-esteem. According to this organization, these basic needs are also called deficiency needs because if an individual does not meet them, then that person will strive to make up the deficiency and they are usually listed in hierarchical order.

Secondary needs or Meta needs (growth needs) as they are sometimes referred to, are additional higher needs that must be met to maintain the quality of life. They include justice, goodness, beauty, order, unity, etc. Basic needs normally take priority over growth needs. For example, a person who lacks food or water will not normally attend to justice or beauty needs. Unlike the basic needs, the Meta needs can be pursued in

any order, depending upon a person's wants or circumstances, as long as the basic needs have all been met.

3.2 The Basic Human Needs

There are at least five sets or categories of needs, which we can classify as Basic Human Needs. They are physiological, safety, love, esteem and self-actualization needs. These needs are related to each other, being arranged in a hierarchy of prepotency. This means that the most prepotent goal will monopolize consciousness and will tend of itself to organize the recruitment of the various capacities of the organism. The less prepotent needs are minimized, even forgotten or denied. But when a need is fairly well satisfied, the next prepotent ('higher') need emerges, in turn to dominate the conscious life and to serve as the center of organization of behavior, since gratified needs are not active motivators. Thus man is a perpetually wanting animal. Ordinarily the satisfaction of these wants is not altogether mutually exclusive, but only tends to be. The average member of our society is most often partially satisfied and partially unsatisfied in all of his wants (Maslow, 1943).

3.3 Physiologic Needs

Undoubtedly the physiological needs are the most pre-potent of all needs. Why? They are basic biological needs for life sustenance. This means that in the human being who is missing everything in life in an extreme fashion, it is most likely that the major motivation would be the physiological needs rather than any others. A person who is lacking food, safety, love, and esteem would most probably hunger for food more strongly than for anything else. Stated differently, if the physiological needs are unsatisfied, all other needs may become simply non-existent or be pushed into the background. All capacities are put into the service of hunger-satisfaction, and the organization of these capacities is almost entirely determined by the one purpose of satisfying hunger. The receptors and effectors, the intelligence, memory, habits, all may now be defined simply as hunger-gratifying tools. Capacities that are not useful for this purpose lie dormant, or are pushed into the background. For instance, the urge to write poetry, the desire to acquire an automobile, the desire for a new pair of shoes are, in the extreme case, forgotten or become of secondary importance. For the man who is extremely and dangerously hungry, no other interests exist but food. He dreams food, he remembers food, and he thinks about food, he emotes only about food, he perceives only food and he wants only food (Maslow, 1943).

Perhaps it should be mentioned that any of the physiological needs and the consummatory behavior involved with them serves as channels for

all sorts of other needs as well. That is to say, the person who thinks he is hungry may actually be seeking more for comfort, or dependence, than for vitamins or proteins. Conversely, it is possible to satisfy the hunger need in part by other activities such as drinking water or smoking cigarettes. In other words, relatively isolable as these physiological needs are, they are not completely so (Maslow, 1943). In synopsis, the first need of the body is to achieve homeostasis and this is achieved through the consumption of food, water and air; elimination of exogenous and endogenous wastes; sleep and rest; activity and exercise; and sexual gratification. Let us then take a look at each of these physiological needs.

Air/Oxygen – This is the most essential of all basic needs. Air is a name for the mixture of gases present in the earth atmosphere. By volume, dry air contains approximately 78.1% Nitrogen, 20.9% Oxygen, 0.9% Argon, and 0.03% Carbon Dioxide. Oxygenation (the delivery of oxygen to the body cells and tissues) is necessary to maintain life and health (Christensen, 1998). The brain for instance cannot function without oxygen for longer than 4 – 5 minutes (Cox, 1995). Oxygen is needed for internal respiration along side the metabolic processes occurring in the body. The body meets its oxygen need via external respiration or what is called gaseous exchange. Variables affecting oxygenation include age, environmental and lifestyle factors and certain disease process. Consequently anything that interferes with the airway, atmospheric oxygen content, human respiration and circulation can threaten the body's oxygen supply. Examples of such abound but briefly they include: some respiratory diseases like emphysema, asthma, pneumonia; air pollution; blockage of respiratory tract by secretion to mention a few (Rosdahl, 1995).

Clients with compromised oxygenation status need careful assessment and thoughtful nursing care to achieve adequate and comfortable level of oxygenation status (Christensen, 1998). Nursing measures to meet oxygen needs range from teaching client to rest in position that increases respiratory volume and thus the level of oxygen, to emergency cardiopulmonary resuscitation for cardiac arrest and supportive measures such as administration of oxygen to patients/clients with pulmonary disease (Cox, 1995).

Water and Fluids – It is no exaggeration that though a man can survive several days without food could last only a few hours without water. Water takes many different shapes on earth: water vapour and clouds in the sky, waves and icebergs in the sea, glaciers in themountain, aquifers in the ground, to name but a few. From a biological standpoint, water has many distinct properties that are critical for the proliferation of life that set it apart from other substances. Water carries out this role by

allowing organic compounds to react in ways that ultimately allows replication. It is a good solvent and has a high, surface tension and thus allows organic compounds and living things to be transported in it. 60 – 70% of the body cells are made up of fluids.

The body constantly loses fluid to the environment via the various regulatory systems in the body. Howbeit, body fluid is replenished by ingestion of liquids and food products such as meats and vegetables, which contain 65% to 97% water and through the chemical oxidation of food substances. The healthy existence or otherwise of the cellular system, indeed the entire body therefore depends on the maintenance of proper volume, chemical composition, and placement of these fluids. This balanced internal environment is what is called homeostasis. Virtually all illness states (unconsciousness, kidney dysfunctions, gastroenteritis, diabetes mellitus e.t.c) threaten this balance. It is even threatened in a healthy state, especially when one engages in prolonged outdoor exercises without adequate fluid intake. Prolonged administration of certain therapeutic regimen could also alter this balance, for instance the use of diuretics and corticosteroids.

Dehydration and oedema indicate unmet fluid needs. Dehydration is the excessive loss of fluid from body tissues; it is accompanied by a disturbance of body electrolytes. Could follow prolonged fever, vomiting, diarrhoea, trauma or any other condition that causes a rapid fluid loss. Oedema is the abnormal accumulation of fluid in the interstitial spaces of tissues, pericardial sac, intrapleural space, peritoneal cavity, or joint capsules. Oedema may be caused by decreased serum protein level, altered functioning of the cardiovascular, renal, or hepatic system, or drugs. The nurse examines patients/clients for actual and potential fluid and electrolyte imbalance. Poor skin turgor (normal skin elasticity becoming lax), flushed dry skin, decreased tears or salivation, a coated tongue, decreased urine output (oliguria), confusion and irritability indicate dehydration (Cox, 1995). Pitting bipedal oedema, facial puffiness, ascites (accumulation of fluids in the peritoneal cavity), positive shifting dullness are all manifestations of excessive body fluids. The nurse can assist in conditions of altered fluid balance through accurate assessment, measuring of intake and output, weighing of patients and monitoring of intravenous infusions and so on and so forth.

Food and Nutrients – Food is any substance that can be consumed, be it of plant or animal origin including liquid drinks, and it is the main source of energy and of nutrition for man and other animals. The phrase ‘we are what we eat’ is frequently used to signify that the composition of our bodies is dependent in large measures on what we have consumed (Latham, 1997). Today there is a greater awareness of the relationship

between health and nutrition, nutrition and the onset of illness, nutrition and wound healing, and nutrition and effective immunity.

Optimal nutrition (intake matches energy expenditure; proper amount of each essential nutrient) is essential for: Normal growth and development; maintenance of bodily functions; optimal activities status; resistance to infection; and repair of injuries to cells and tissues. Lack of adequate nutrition produces specific identifiable diseases such as kwashiorkor, marasmus, rickets, e.t.c. Poor nutritional habits, inability to chew and swallow, nausea and vomiting equally pose a threat to nutritional status. Over-eating on the other hand also adversely affect health (results in obesity, hypercholestraemia and other related problems). Perhaps the point that could be safely made is that while good nutrition is not synonymous to good health, good health is not achievable without adequate nutrition.

To determine whether patients/clients are meeting nutritional needs, the nurse considers body weight and other markers of nutritional deficiency. These include the physique, body mass index, hair texture and colour, some laboratory data (e.g. PCV), and food intake patterns. Signs and symptoms indicating that individuals are not meeting nutritional needs include failure to thrive, unplanned weight loss, fatigue, pallor and recurring mouth and gum sores (Cox, 1995). To help individuals meet their nutritional needs, the nurse must have a good understanding of the various locally available foodstuffs and their nutritive values as well as the digestive and metabolic processes of the body. Nursing action targeted at resolving nutritional problems range from health education to assuming total responsibility for the planning and feeding of patients.

SELF ASSESSMENT EXERCISE 1

List the basic human needs.

Elimination of Waste Products – This is essential to maintain life and comfort. The integumentary (the skin and its appendages), respiratory, urinary, hepatic, and digestive systems are the organs primarily concerned with elimination of wastes from the body. The skin eliminates water and salt in form of sweat; the kidney, excess fluids and electrolytes; the lungs, carbon dioxide and water; the intestine, solid wastes and fluids; and the liver, detoxified drugs and toxins. Many conditions (kidney or renal problems, bowel obstruction, diseases of the respiratory tract e.t.c) impair this process of waste elimination in the body with grave consequences.

A patient/client whose urinary elimination needs are unmet may become incontinent or develop urinary tract infection. Unmet urinary elimination

needs also results in fluid and electrolyte imbalances. A patient unmet need for bowel elimination may lead to changes in pattern of elimination or diet intake (Cox, 1995). Nursing measures at helping clients/patients meet their elimination needs may be as simple as providing privacy or changing diet or giving enema or as complex as inserting a urethral catheter, conducting peritoneal dialysis or haemodialysis, or assisting with surgery to relieve bowel obstruction or administering medication to relieve constipation.

Sleep and Rest – Sleep is a recurrent, altered state of unconsciousness that occurs for sustained periods, during which the body experiences minimal physical activity and a general slowing down of physiological processes with resultant restoration of energy and well-being. It provides time for the repair and recovery of body systems for the next period of wakefulness. Rest refers to a state of relaxation and calmness (Coy, 1998). Like sleep it reduces physical and psychological demands on the body. Activities during rest periods range from lying down to taking a quiet walk. While it is very true that the much of sleep required by individuals depends to a large extent on such factors as age, pregnancy, state of health; sleep deprivation has been implicated in the worsening of certain mental disorders. Although the length of time that can be considered as adequate sleep is still controversial, there is a general belief that about 6 to 8hours of sound sleep is sufficed for healthy living. Rest and sleep habits of persons entering the hospital or other health care facility can easily be changed by illness, the strange hospital environment culminating in fear and anxiety, and hospital routines. The nurse must be aware of patient/client's need for rest and sleep as lack of it aggravates the existing deteriorating state of health of the clients. As nurses, we can assist our clients to get enough rest and sleep by providing safe, comfortable, and quiet environment, maintenance of proper anatomical alignment or positioning, provision of adequate ventilation, giving of warm tub bath, soothing back rub, and prescribed sleep enhancing medications (Rosdahl, 1995). Any bedtime habits, such as reading, walking, bathing or drinking milk should be incorporated into the care plan.When possible the nurse should plan care to fit the patient's/client's usual sleep-wake-cycle (Cox, 1995).

Activity and Exercise – Mobility or movement is an activity most people have taken for granted but the ability to move and be active brings about positive benefits to one's health status (Brillhart 1998). Mobility though not absolutely essential for survival is needed to maintain optimum health. According to respiration Rosedale (1995) activity stimulates the mind and body while exercise helps in maintaining body's structural integrity and health by enhancing circulation and respiration. Mobility enhances muscle tone, increases energy levels, and is often associated with psychological benefits such

as independence and freedom. Functional mobility is governed by body mechanics, the purposeful and coordinated use of body parts and positions during activity. Use of proper body mechanics maximizes the effectiveness of the efforts of the Musculoskeletal and neurological systems and reduces the body's exposure to strain or injury during movement (Brillhart 1998).

The nurse can assist her client to obtain needed exercises in the following ways: (a) Through the teaching of pre-operative breathing exercises; (b) Encouraging early ambulation post surgery; (c) Conduction of passive range of motion exercises; (d) Turning of immobilized patients (non-ambulant patients) to mention but a few.

Sexual Gratification – Everyone is a sexual being regardless of health status (Hodge, 1995), and sexual integrity is an integral part of a person's well-being. Even though there are no universal values about sexuality, individuals do experience sexual needs but unlike other physiologic needs, sexual gratification may be sublimated (Rosdahl 1995). This to an extent underscores the fact that the sex need is not vital to survival of individuals but it is vital to the survival of the species.

Nurses often encounter clients whose sexuality is threatened. Some illnesses such as diabetes mellitus, chronic pain, some disabilities, certain surgeries and some medications like certain antihypertensives, and even hospitalization may impair a person's sexual integrity (Delaune & Ladner, 1998). The nurse can be of great help in managing client's sexual problems by demonstrating understanding, creating an atmosphere that communicates consideration, and making the patient feel comfortable. In addition clients and sexual partner need to be informed about the cause of the problem. Medications reducing sexual libido could be substituted while clients with chronic pain could be taught methods of increasing their comfort level (e.g. relaxation techniques). However, as Rosdahl (1995) rightly suggested, when a client present with major sexual problems such should be referred for professional counseling.

3.4 Security and Safety Needs

Once the physiological needs are relatively well gratified, there then emerges a new set of needs, which we may categorize roughly as the safety needs. All that has been said of the physiological needs is equally true, although in lesser degree, of these desires. They may equally well wholly dominate the organism. They may serve as the almost exclusive organizers of behavior, recruiting all the capacities of the organism in their service, and we may then fairly describe the whole organism as a safety-seeking mechanism. Again we may say of the receptors, the

effectors, of the intellect and the other capacities that they are primarily safety-seeking tools. Again, as in the hungry man, we find that the dominating goal is a strong determinant not only of his current world-outlook and philosophy but also of his philosophy of the future. Practically everything looks less important than safety, (even sometimes the physiological needs which being satisfied, are now underestimated). A man, in this state, if it is extreme enough and chronic enough, may be characterized as living almost for safety alone (Maslow, 1943).

Whereas the physiological drive have certain limit to their satisfaction, security needs seems to be infinite in nature. For example excessive indulgence in eating could be harmful to people. Characteristics of safety include: predictability, stability, familiarity, as well as feeling safe and comfortable and trusting other people (Rosdahl 1995). Inherent in the above statement is that safety needs contains both physical and psychological components. Freedom from harm, danger and fear, financial security, need for shelter and warmth all are therefore subsumed under safety and security needs.

Physical Safety – Maintaining physical safety involves reducing or eliminating threats to body or life. The threat may be illness, accident, danger, or environmental exposure, lack of shelter and warmth. The threat could even be orchestrated by medical or surgical complications following a protracted illness or surgical intervention. Although lack of shelter may not create an immediate threat to life, its cumulative effect may eventually squeeze out life out of people. Furthermore, it will thwart the ability of an individual to progress towards a higher level needs. The need for warmth is however predicated on the fact that the human body functions in a relatively narrow range of temperature and any deviation from this narrow range will spell doom for the whole body (Cox, 1995; Rosdahl 1995). The nurse may assist in removing threats from patient's environment through keen observation and continual assessment, ensuring adequate bed spacing, Keeping wards well illuminated and aerated, scrupulous hand-washing, aseptic wound dressing, locking up of poisons at home to safeguard children, to mention but a few.

Psychological Safety – According to Cox, 1995 'To be safe and secure psychologically, a person must understand what to expect from others, including family members and healthcare professionals, and what to expect from procedures, new experiences, and encounters within the environment'. Cox asserted that everyone feels some threat to psychological safety with new and unfamiliar experiences. By extension, a newly hospitalized patient may feel threatened by the strange hospital environment and a patient/client about to undergo a diagnostic test may equally feel threatened by the technology involved.

The fact that people rarely open up that their psychological safety is threatened makes assessment of psychological safety often difficulty. To this end, the nurse will have to interpret the patient/client language and behaviour. The nurse may assist in alleviating psychological threat through explanation of procedures to patients before actual intervention, health education e.t.c.

3.5 Affiliation and Social Needs (Love)

These encompass the need for friendship, love, belongingness, and acceptance. When both the physiological and the safety needs are fairly well gratified, then the affiliation needs will emerge and dominate the behaviour of human being. Now the person will feel keenly, as never before, the absence of friends, or a sweetheart, or a wife, or children. He will hunger for affectionate relations with people in general, namely, for a place in his group, and he will strive with great intensity to achieve this goal. He will want to attain such a place more than anything else in the world and may even forget that once, when he was hungry, he sneered at love (Maslow, 1943).

The drive to belong and be accepted by other people stems from the gregarious nature of human. Everyone needs to feel that they are wanted and belong to a group. Non-fulfillment of these needs may affect the mental health of the individual and indeed has implicated in the etiology of maladjustment and more severe psychopathology. For instance, a usually mild-tempered person may become easily irritated; an outgoing person may suddenly become withdrawn from friends and coworkers; could even affect a person's work habits leading to increased absenteeism or over commitment to the job.

For this reason, the nursing care plan for an ill hospitalized patient should include means by which love and belonging needs can be met. Some of the ways by which this need could be met include: getting patient/client actively involved in the development of their care plan; giving nursing care in friendly and empathetic manner; encouraging presentation of greeting cards to patient and visits by friends and relatives; and short social visits by members of the health care team.

SELF ASSESSMENT EXERCISE 2

Itemise your physiological and psychological needs.

4.0 CONCLUSION

Since the attainment of highest level of health by any individual is predicated upon a complex maze of needs achievement, no effort should

be spared at ensuring that individuals meet their basic human needs. Nurses, the set of health workers that spend the longest hours with the patients, therefore need to be equipped with knowledge and skill of assessing and meeting the multifaceted needs of their clients.

5.0 SUMMARY

This unit has taken a broad look at the relationship between health and human needs. It noted that all human need a number of essentials to survive and that all human beings are driven by physiologic and psychological needs. It classified human needs into two broad groups – Primary needs and Secondary needs noting that the first level needs (physiologic needs) must be met before a person can address higher level needs. Employing simple illustrations, the unit shows that physiological needs can control thoughts and behaviors, and can cause people to feel sickness, pain, and discomfort. In addition, the unit buttressed the view that 'as illness or injury can interfere with a person's ability to meet needs, the duo could also cause an individual to regress to a lower level of functioning'. Lastly, the unit emphasized that nurses can do a lot in identifying and assisting patients/clients to meet their basic human needs.

6.0 TUTOR-MARKED ASSIGNMENT

Classify the basic human and physiological needs. Describe the relationship among the different levels of needs.

ANSWER TO SELF ASSESSMENT EXERCISE 1

Physiological, Safety, Love, Esteem and Self actualization.

ANSWER TO SELF ASSESSMENT EXERCISE 2

Physiological: Food, Water, Sleep, Psychological: Affection, Security and self esteem.

7.0 REFERENCES/FURTHER READING/FURTHER READING

Brillhart, B. (1998). Mobility. In S. C. Delaune & P.K. Ladner, (eds.). *Fundamentals of Nursing, Standard and Practice.* Albany: Delmar Publishers.

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UNIT 2 HEALTH AND HUMAN NEEDS II

CONTENTS

1.0 INTRODUCTION

The preceding unit opens the discussion on the universality of needs and the relationship between health and human needs but fail to address all aspects of this all-important issue. The present unit is therefore a continuation of that discourse. The unit particularly examines esteem needs, self-actualization needs, Maslow hierarchy of human needs and other theories of human needs.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- differentiate between the esteem needs and self-actualization needs
- discuss the Maslow hierarchy of needs
- describe what is meant by hierarchy of needs
- discuss Maslow Hierarchy of Needs and other Needs Theories
- examine the flaws of Maslow Hierarchy of Needs
- discuss the clinical and other applicability of Basic Needs Theory.

3.0 MAIN CONTENT

3.1 Esteem and Self-Esteem Needs

The term self-esteem (self-image, self-respect, self-worth) is related to the person's perception of self / personal feeling of self-worth and recognition or respect from others. All people in every society (with a few pathological exceptions) have a need or desire for a stable, firmly based (i.e. soundly based upon real capacity), usually high evaluation of themselves, for self-respect, or self-esteem, and for the esteem of others. This is because self-respect and dignity are essential to the psychological well-being of individuals who have reached some degree of satisfaction in the first three levels of human needs. Cox (1995) declared that a change in roles whether anticipated (for instance retirement), or sudden such as injury, may threaten self-esteem. Similarly, changes in body image whether obvious like amputation or hidden (e.g. hysterectomy) may also influence self-esteem. Cox (1995) stressed further that it is not the magnitude of the change or role that affects self-esteem, but rather how the person perceives the self after the change.

Esteem and Self-Esteem needs are met when the person thinks well of himself or herself (achievement, adequacy, competence, confidence) and is well thought of by others (recognition, status awards, prestige) (Rosdahl 1995). When both of these needs are met, a person feels self-confident and useful but thwarting of these needs produces feelings of inferiority, of weakness and of helplessness. These feelings in turn give rise to either basic discouragement or else compensatory or neurotic trends (Maslow, 1970). Consequently indications of unmet needs for self-esteem include a feeling of helplessness/hopelessness/inferiority complex and becoming self-critical or unusually lethargic or apathetic about anything involving self, including appearance. In Cox (1995) words, a person feeling the lack of esteem of other people may test others by making such statements that call for their approval or praise, or may act in a way that prevents such approval if little self-esteem is present and the person is certain of failure.

Nursing intervention in cases of low self-esteem begins right from admission or first contact with the client/patient. The nurse can assist client/patient to regain positive self-esteem by conveying a feeling of acceptance and respect, employing a non-judgmental approach in handling the values and beliefs of the client/patient, encouraging independence, rewarding progress, allowing the client/patient to do as much self-care as possible, and tailoring specific nursing actions towards the root cause of the altered self-concept. But if patients' self-esteem is so low that they fail to care for themselves, the nurse assumes

total responsibility for meeting those other needs while taking steps to increase self-esteem (Rosdahl 1995; Cox, 1995).

3.2 Need for Self-Actualization

This term, first coined by Kurt Goldstein refers to the desire for self-fulfillment, namely, to the tendency for him to become actualized in what he is potentially. This tendency might be phrased as the desire to become more and more what one is, to become everything that one is capable of becoming. They are more ego oriented in nature and frequently express themselves in highly independent behaviors. However, the clear emergence of these needs rests upon prior satisfaction of the physiological, safety, love and esteem needs. That is, even if all aforementioned needs are satisfied, we may still often (if not always) expect that a new discontent and restlessness will soon develop, unless the individual is doing what he is fitted for. A musician must make music; an artist must paint, a poet must write, if he is to be ultimately happy. What a man *can* be, he *must* be (Maslow, 1943). It must however be stressed that the specific form that these needs will take, will of course vary greatly from person to person. In one individual it may take the form of the desire to be an ideal mother, in another it may be expressed athletically, and in still another it may be expressed in painting pictures or in inventions. It is not necessarily a creative urge although in people who have any capacities for creation it will take this form.

Present needs, environment, and stressors influence how well people meet their need for self-actualization. As a matter of fact, many psychologists believe that people continue striving to reach this level in life and very few people believe that they are self-actualized. Self-actualized individuals have mature multidimensional personality, frequently they are able to assume and complete multiple tasks, and the achieve fulfillment from the pleasure of a job well done. They do not totally depend on opinions of others about appearance, quality of work, or problem-solving methods. While it is true that they may have failings and doubts, they generally deal with them realistically (Cox, 1995). However, self-actualizers may focus on the fulfillment of this highest need to such an extent that they consciously or unconsciously make sacrifices in the fulfillment of the lower level needs.

Illness, injury, loss of loved one, change in role, change in status can threaten or disturb self-actualization sometimes manifesting in behavioral changes. The gal of nursing care is to assist individuals to reach their fullest potential. As such nursing care is planned to encourage individual to make decisions when possible, particularly those that concern his health. Because the self-actualized person tends to

be creative, nursing care should give room for expression of creativity as well as encouraging the individual to continue with specific projects. And since the healthy self-actualized person generally has a strong need for privacy, the patient's need for privacy must be respected (Cox, 1995).

SELF ASSESSMENT EXERCISE 1

What is the positive link of esteem and self esteem needs?

Theories of Human Needs

Quite a number of theories have been propounded on human needs but prominent among them are the Maslow Hierarchy of Needs and the Alderfer's Existence/Relatedness/Growth (ERG) Theory of Needs.

(a) Maslow Hierarchy of Needs

Abraham Harold Maslow was a renowned psychologist and philosopher who lived between April 1, 1908 and June 8, 1970. He was a scholar and was referred to as the father of humanistic psychology. In 1943, Abraham H. Maslow observed and concluded that:

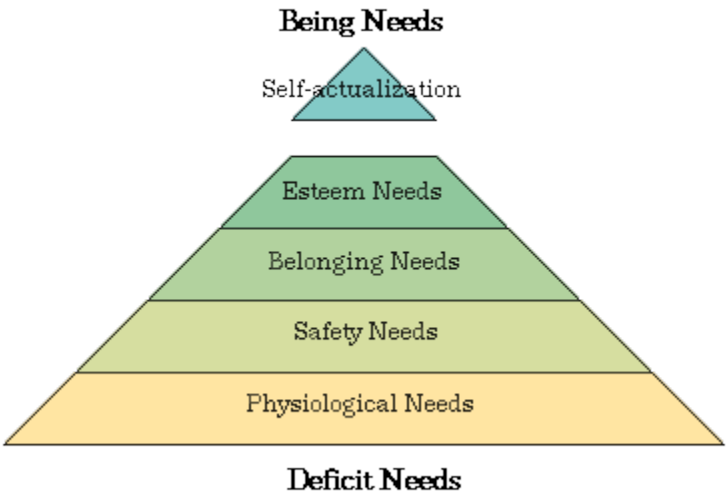
- Needs are hierarchical in nature. That is, each need has a specific ranking or order of obtainment.
- The need network for most people is very complex, with a number of needs affecting the behaviors of each person at any point in time.
- People respond to these needs in a progressive manner from simple physiological needs (survival needs) to more complex (aesthetic) needs; and that they do so as whole and integrated beings.
- When one set of needs is satisfied, it seizes to be a motivator.
- Lower level need must be satisfied in general, before higher level needs are activated sufficiently to drive behavior.
- There are more ways to satisfy higher level needs than there are for lower level needs

Consequently, he identified various needs that motivate behavior and place them in sequential hierarchy or graded order according to their significance to human survival i.e. in ascending order from lowest to the highest needs. He posited that that the basic needs of all people regardless of age, sex, creed, social class, or state of health (sick or well) could be categorized into five levels:

- **Physiological:** hunger, thirst, bodily comforts, etc.;
- **Safety/Security:** the need for structure, predictability, out of danger, free from harm, feel safe and secure;
- **Belongings and Love:** the need to be accepted by others and to have strong personal ties with one's family, friends, and identity groups;
- **Esteem:** the need to achieve, be competent, gain approval and recognition; and
- **Self-Actualization:** the need to find self-fulfillment and reach one's potential in all areas of life;

Maslow's needs pyramid starts with the basic items of food, water, and shelter. These are followed by the need for safety and security, then belonging or love, self-esteem, and finally, personal fulfillment (Self-Actualization). According to him, the first level needs, which are physiologic, occupying the bottom of the pyramid/ladder, are the most important as they are activities needed to sustain life such as breathing and eating.

Fig 3 – 1 Schematic Representation of Maslow Hierarchy of Needs



Source: Adapted from Dr. C. George Boeree (2004) Abraham Maslow. Available on http://www.ship.edu/~cgboeree/maslow.htm

Each higher level represents one of lesser importance to human existence than the one previous to it. Maslow believed that it is when a particular physiological need is met with relative degree of satisfaction that other needs of lesser importance to human existence take precedence. However by progressively satisfying needs at each

subsequent level, people can realize their maximum potential for health and well-being (Timby, 1996).

(b) Alderfer's Existence/Relatedness/Growth (ERG) Theory of Needs

The ERG Theory of Clayton P. Alderfer is a model that appeared in 1969 in a Psychological Review article entitled "An Empirical Test of a New Theory of Human Need". In a reaction to Maslow's famous Hierarchy of Needs, Alderfer, an American Psychologist, postulated that there are three groups of human needs that influence workers' behavior; existence, relatedness, and growth. These three needs categories are:

- **Existence -** This group of needs is concerned with providing the basic requirements for material existence, such as physiological and safety needs. (Maslow's first two levels). This need is satisfied by money earned in a job so that one may buy food, shelter, clothing, etc.

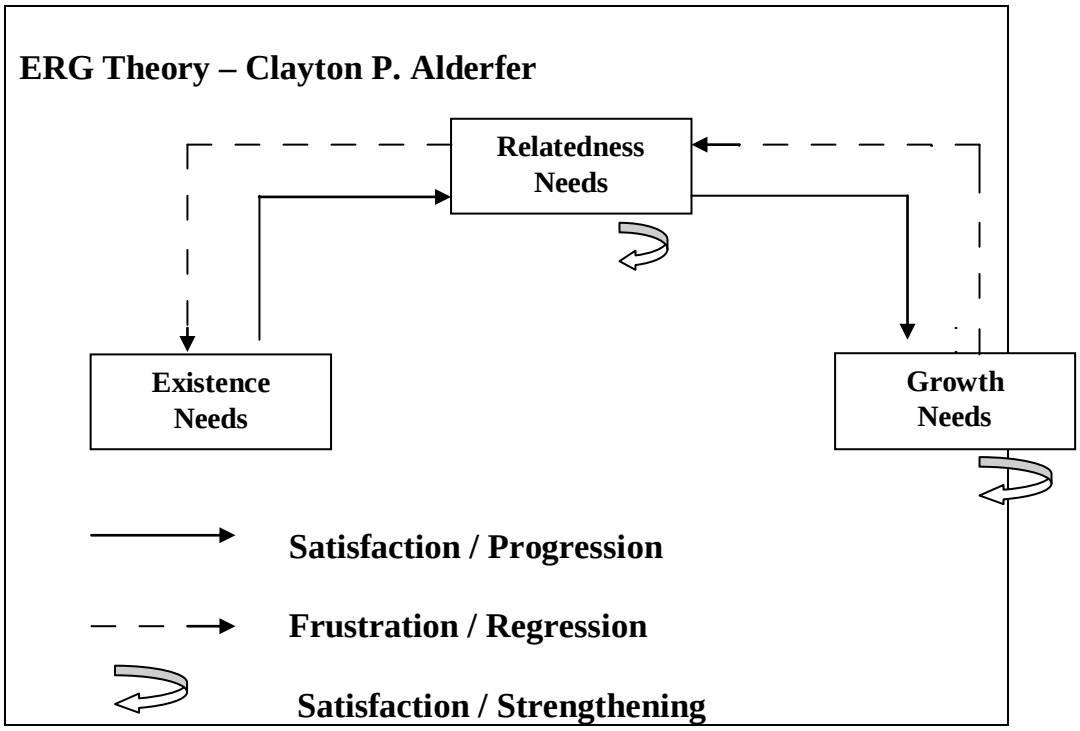
- **Relationships** - This group of needs center upon the desire to establish and maintain interpersonal relationships i.e. social and external esteem (involvement with family, friends, co-workers and employers) (Maslow's third and fourth levels.

- **Growth** – This encompasses internal esteem and self-actualization (desires to be creative, productive and to complete meaningful tasks) (Maslow's fourth and fifth levels). These needs are met by personal development. A person's job, career, or profession provides significant satisfaction of growth needs.

Contrarily to Maslow's idea that access to the higher levels of his pyramid required satisfaction in the lower level needs, Alderfer declared that the three ERG areas are not stepped in any way. ERG Theory recognizes that the order of importance of the three Categories may vary for each individual. Managers must recognize that an employee has multiple needs to satisfy simultaneously. According to the ERG theory, focusing exclusively on one need at a time will not effectively motivate. In addition, the ERG theory acknowledges that if a higher-level need remains unfulfilled, the person may regress to lower level needs that appear easier to satisfy. That is, if the gratification of a higher-level need is frustrated, the desire to satisfy a lower level need will increase. Alderfer identifies this phenomenon as the "frustration & shy aggression dimension." This frustration-regression dimension affects workplace motivation. For example, if growth opportunities are not provided to employees, they may regress to relatedness needs, and socialize more with co-workers. The relevance of this on the job is that even when the

upper-level needs are frustrated, the job still provides for the basic physiological needs upon which one would then be focused. If, at that point, something happens to threaten the job, the person's basic needs are significantly threatened. If there are not factors present to relieve the pressure, the person may become desperate and panicky (Alderfer, 1969).

Fig 3 – 2 Schematic Presentation of Alderfer's ERG Theory of Needs



Source: Adapted from http://www.valuebasedmangement.net/methods_alderfer_erg_theory.html

(c) Other Theories of Needs: A Summary

Huitt (2004) in what looks like a review of literature captures other scholars' contribution to 'Need Theory' as follows:

"Contrary to Maslow's categorization of needs, James (1892/1962) hypothesized that there are three levels of needs namely: material (physiological, safety), social (belongingness, esteem), and spiritual. Mathes (1981) while agreeing with the three-tier categorization of needs proposed that the three levels were physiological, belongingness, and self-actualization; he considered security and self-esteem as unwarranted. Ryan & Deci (2000) also suggest three needs, although they are not necessarily arranged hierarchically: the need for autonomy,

the need for competence, and the need for relatedness. Thompson, Grace and Cohen (2001) submitted that the most important needs for children are connection, recognition, and power. Nohria, Lawrence, and Wilson (2001) provide evidence from a sociobiology theory of motivation that humans have four basic needs: (1) acquire objects and experiences; (2) bond with others in long-term relationships of mutual care and commitment; (3) learn and make sense of the world and of ourselves; and (4) to defend ourselves, our loved ones, beliefs and resources from harm. The Institute for Management Excellence (2001) suggests there are nine basic human needs: (1) security, (2) adventure, (3) freedom, (4) exchange, (5) power, (6) expansion, (7) acceptance, (8) community, and (9) expression".

As rightly noted by Huitt (2004), a common trait or regular feature of all these theories however is bonding and relatedness. Notice that there do not seem to be any other that are mentioned by all theorists. Franken (2001) suggests this lack of accord may be a result of different philosophies of researchers rather than differences among human beings. In addition, he reviews research that shows a person's explanatory or attributional style will modify the list of basic needs. This possibly explains why Huitt (2004) concluded that it will seem appropriate to ask people what they want and how their needs could be met rather than relying on an unsupported theory.

3.3 Criticisms of Maslow's Theory of Needs

Maslow concept of needs had been subjected to considerable research. For example, in their extensive review of research that is dependent on Maslow's theory, Wabha and Bridwell (1976) found little evidence for the ranking of needs that Maslow described or even for the existence of a definite hierarchy at all but rather are sought simultaneously in an intense and relentless manner. Other needs theorists have perceived human needs in a different way -- as an emergent collection of human development essentials (Marker, 2003). Some have contend that Maslow does not mention time period between various needs and that people do not necessarily satisfy higher order needs through their jobs or occupations. Besides, the concept of self-actualization is considered vague and psychobabble by some behaviourist psychologists. They asserted that the concept is based on an aristotelian notion of human nature that assumes we have an optimum role or purpose. In their words, 'self actualization is a difficult construct for researchers to operationalize, and this in turn makes it difficult to test Maslow's theory. Even if self-actualization is a useful concept, there is no proof that every individual has this capacity or even the goal to achieve it'. Other counterpositions suggest that satisfaction which Maslow viewed as a

major motivator has been found not to be directly related to production which is main goal of the manager.

3.4 Application of Basic Needs Theory

Huitt (2004) citing the works of Norwood (1999) submitted that Maslow Hierarchy of needs could be used to describe the kinds of information that individual's seek at different levels. For example, individuals at the lowest level seek coping information in order to meet their basic needs. Information that is not directly connected to helping a person meet his or her needs in a very short time span is simply left unattended. Individuals at the safety level need helping information. They seek to be assisted in seeing how they can be safe and secure. Enlightening information is sought by individuals seeking to meet their belongingness needs. Quite often this can be found in books or other materials on relationship development. Empowering information is sought by people at the esteem level. They are looking for information on how their ego can be developed. Finally, people in the growth levels of cognitive, aesthetic, and self-actualization seek edifying information.

Maslow's theory of human needs has also gain a universal application in nursing care of patients/clients of all ages. It wide applicability in nursing is predicated upon the fact that illness often disrupt patients the ability to meet needs on different levels, hence patients/clients come up with many needs. It should however be noted that Maslow's hierarchy is a generalization about the need priorities of most but not all people. As such when the nurse applies this theory in practice, the focus should be on the needs of the individual rather than rigid adherence to Maslow's hierarchy. In all cases, an emergency physiological need takes precedence over a higher-level need. However the need for self-esteem may be a higher priority than a long-term nutritional need for one patient/client, whereas for another person, the reverse may be the case. Furthermore, although the hierarchy of needs suggests that one should be met before the other, nursing care often addresses two or more at the same time. As Cox (1995) suggests the provision of most effective nursing care therefore entails an understanding on the part of the nurse, the relationship among different needs for the individual. Indeed in some nursing situations, it is unrealistic to expect a patient's/clients basic needs to be fulfilled in the fixed hierarchical order. The example given by Cox (1995) of a person who possibly enters the health care system as a result of chronic respiratory infection but presents with multiple related unmet needs for nutrition, sleep, e.t.c. aptly buttress this assertion. Nursing care in this situation will not simply be directed at meeting the respiratory needs but will be directed at resolving the pressing/life threatening needs while simultaneously addressing the higher level needs.

SELF ASSESSMENT EXERCISE 2

Sketch a diagrammatic representation of Abraham Maslow's Hierarchy of needs**.**

It should also be noted that for different individuals, needs on different levels may be related in different ways. Some people may give sexual need a higher priority than the need for love, whereas for others, sexual need is deferred until the need for love is met. Similarly, people with unmet needs for self-esteem may be unable to seek fulfillment of the need for love if their self- esteem is so low that they feel inferior and fear rejection. In these and many other ways, needs on different level may be closely related for individuals. When assessing needs and planning care, the nurse must not assume that lower–level need always takes priority. As with all other aspects of providing care, the nurse individualizes the nursing care plan to provide for the unique needs and desires of the patient / client (Cox, 1995). Factors influencing need priorities include: (a) A person's personality and mood. For instance a depressed person may react negatively to a suggestion for an activity that could increase self-esteem, although in another mood the person might respond with enthusiasm. Thus, when providing care to help meet several needs, the nurse can adjust the care plan to correspond most effectively to the patients/client's personality and mood. (b) The health status of the client/patient. A frail looking anaemic patient for example, should not be encouraged to resume physical activities related to need for self-esteem until need for physical safety and security have been met. (c) Socio-economic status and cultural background – this affects a person's perception of needs.

To make any meaningful impact in meeting the hydra-headed needs of clients/patients, the nurse must therefore take into consideration all the aforementioned factors. In addition, in view of the interrelatedness of needs (e.g. if nutritional needs are not met for a long time, the person not only begins to grow lean and malnourished but also become deficient in meeting safety, love and self-esteem needs.

4.0 CONCLUSION

The human needs theory, no doubt, is a set of concepatients important for the nurse understanding of health and illness and the patient's/client's position on the health-illness continuum. Nonetheless, the nurse must as a necessity consider the uniqueness of each individual, their need References/Further Reading/Further Reading and the significance of each need in prioritizing nursing care.

5.0 SUMMARY

The unit is a follow up of the discussion on health and human needs. It discusses the esteem and self-actualization needs with particular reference to how nurses could assist patients/clients to meet these needs. The unit also incorporates a comprehensive discourse of the Maslow hierarchy of needs with its flaws/ weaknesses and other need theories. The unit acknowledges that Maslow hierarchy of needs is a theoretical representation of the need priorities of most people and not all people and therefore cautioned that when the nurse applies this theory in practice, the focus should be on the needs of the individual rather than rigid adherence to Maslow's hierarchy.

ANSWER TO SELF ASSESSMENT EXERCISE 1

A person feels self confident and useful to himself and community.

ANSWER TO SELF ASSESSMENT EXERCISE 2

Show your representation to your colleague.

6.0 TUTOR-MARKED ASSIGNMENT

1. Write an essay on Maslow's Hierarchy of needs**.** Discuss the application of Maslow's Hierarchy of Needs in a clinical setting.
2. What is its criticism?

7.0 REFERENCES/FURTHER READING/FURTHER READING

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UNIT 3 CONCEPT OF HEALTH AND ILLNESS

CONTENTS

1.0 INTRODUCTION

To many people health and illness virtually means the same thing or as accompanying one another. In fact most individuals and societies in the past have viewed good health or wellness as synonymous to absence of illness. This limited view overlooks the complex interrelationships between the physiological, emotional, intellectual, socio-cultural, developmental and spiritual dimensions of health and illness (Cox, 1995) However like Kozier, Erb, Berman and Burke (2000) rightly noted, health may not always accompany well-being as a person with terminal illness may have a sense of well-being while somebody else may lack a sense of well-being yet be in good health. As nurses we therefore need a comprehensive and robust understanding of health and illness as this go a long way to affect scope and nature of nursing practice. To this end, this unit employs a comprehensive and integrated approach of health, wellness and illness. It particularly examined illness behaviour, models of health and wellness, as well as the health-illness continuum.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- differentiate health, wellness and illness
- describe five dimensions of wellness

- differentiate between acute, chronic and terminal illnesses; primary and secondary illnesses; and hereditary, congenital, and idiopathic illnesses.
- distinguish between the terms illness and disease
- outline the etiology of illnesses and diseases
- describe the health-illness continuum.

3.0 MAIN CONTENT

3.1 What is Health?

The term 'health' is so common a vocabulary in every culture; race or creed that one is often tempted to assume that it would have a homogeneous meaning. This is however not so. How each person perceives and defines health varies, and it is important to respect these individual differences rather than impose standards that may be personally unrealistic (Timby, 1996). In Watinson (2002) words 'Health' is a slippery concept to grasp in comparison with ill-health, which seems so solid and tangible.

Nonetheless, the World Health Organization (WHO) asserts in the preamble of its constitutions that the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being regardless of race, religion, political belief, economic, or social conditions. According to WHO, health 'is a state of complete physical, mental and social well-being and not merely the absence of disease on infirmity'. By this definition, health is much more than physical well-being. It means more than not having a physical disease but to be in harmony. The question that quickly comes to mind however is harmony with what and how? To answer this question, there is need to explore cosmological framework to show how physical and social component of the society helps to explain or determine the notion of health and illness. Conception of health is therefore ultimately based on the perception of the original and intended fashion of humanity. As a result, the body becomes an extension of moral perception.

Kozier, Erb, Berman and Burke (2000) in what looks like a critical review of the WHO definition submitted that the WHO definition

- Reflects concern for the individual as a total person functioning physically, psychologically, and socially. They noted that mental processes determine people's relationship with their physical and social surroundings, their attitudes about life, and their interaction with others.
- Places health in the context of environment. It takes cognizance of the fact that people's live, and therefore their health, are

affected by everything they interact with – not only environmental influences such as climate and the availability of nutritious food, comfortable shelter, clean air to breathe and pure water to drink – but also other people, including family, lovers, employers, coworkers, friends, and associates of various kinds.

- Equates health with productive and creative living. According to them it focuses on the living state rather than on categories of disease that may cause illness or death.
- Health therefore in its global/broadest sense encompasses:
- Physical health – physical fitness, the body fixing at its best.
- Emotional health – feelings and attitudes that make one comfortable with oneself.
- Mental health – a mind that grows and adjusts; in control, free of serious stress.
- Social health – a sense of responsibility and caring for health and welfare of others.
- Spiritual health – inner peace and security, comfort with ones higher power, as one perceives it.

One cannot but agree with Delaune & Ladner, (1998) and Kozier, Erb, Berman & Burke, (2000) that the concept of health encompasses such things as emotional and mental stability, spiritual well-being and social usefulness. And while it is very true that health is the fundamental right of every individual, it is also a limited resource as well as a personal responsibility. It is considered a resource and personal responsibility because it is valuable; has no substitute; and requires continuous personal effort. Health however is not an absolute entity; rather there may be fluctuations along a continuum from time to time. Health is not a condition, it is an adjustment; it is not a state, it is a process (President's commission, 1953). Delaune and Ladner (1998) definition of health as a process through which the person seeks to maintain equilibrium that promotes stability and comfort aptly corroborate this fact. In other words health is a dynamic process that varies according to the individual's perception of well-being.

Dubo (1978) views health as a creative process. In his words, individuals are actively and continually adapting to their environments. He stressed that individuals must however have sufficient knowledge to make informed choices about his or her health and also income and resources to act on choices. Pike and Forster (1995) compliments Dubo's statement by arguing that it is important to take into account people's own perceptions and views on health and that different people will see and express these in different ways. Individuals as they continuously adapt to their environment therefore are at different stages/level of wellness.

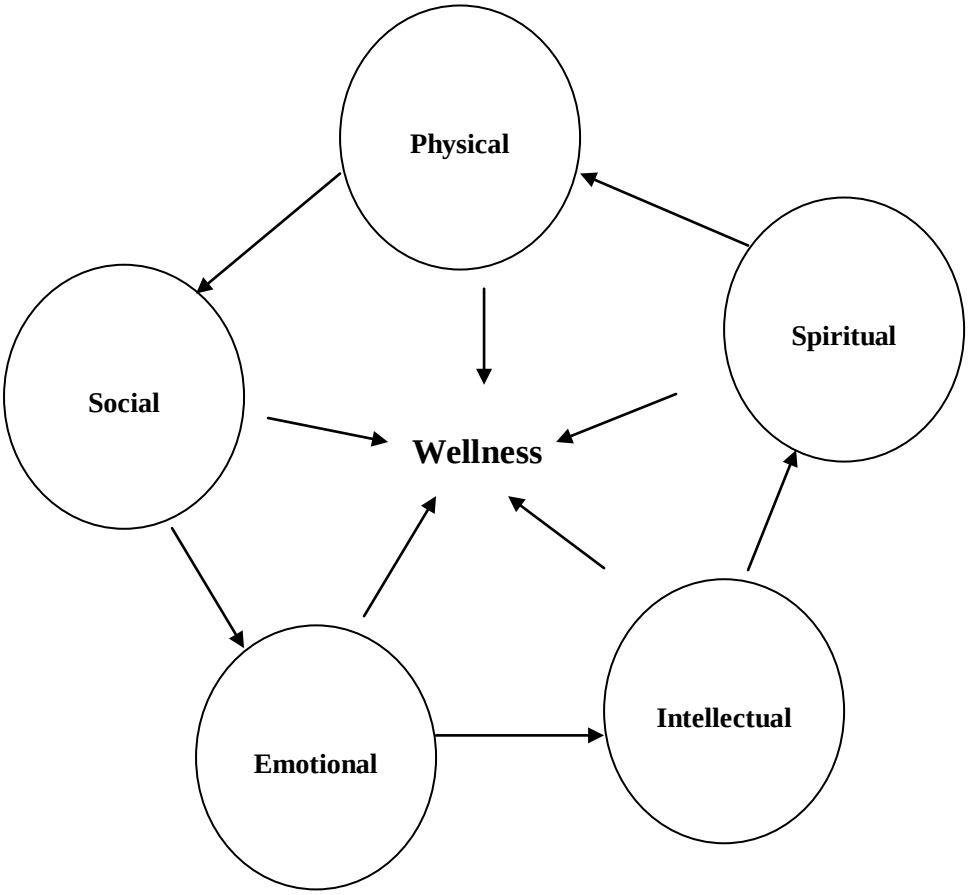
It is also noteworthy that man responds to the environment in which he find himself as an integrated whole. This brings us to the concept of holism. Holism is a philosophy that views the "whole person". The person is seen as a complete unit that cannot be reduced to the sum of its parts. Health in holistic sense therefore is total wellness – wellness of mind, spirit as well as body (Timby, 1996). But in view of the fact that it is virtually impossible for someone to be well and stay well, or get well and remain well forever, nurses are expected to assists people in the prevention of illness and restoration of health through holistic health care i.e. comprehensive and total care of a person.

3.2 Concepts of Wellness

Simply put, wellness is a state of well-being. Kozier, Erb, Berman & Burke, (2000) drawing on the work of Leddy and Pepper (1998) contend that people do confuse the process of health with the status of well-being. Well-being they declared is a subjective perception of vitality and feeling well. It is a state that can be described objectively and can be plotted on a continuum. A more lucid definition however is the one given by Carroll and Miller (1991) which states that term wellness connotes good physical self care, using ones mind constructively, expressing ones emotion effectively, interacting creatively with others and being concerned about one's physical and psychological environment. Akin to this, is the definition by Travis and Ryan (1988) which states that wellness is a choice; a process; efficient handling of energy; integration of body, mind, and spirit; and loving acceptance of self. In synopsis, wellness can be interpreted as full and balanced integration of physical, emotional, social and spiritual health i.e. the condition in which an individual functions at optimal level.

According to Kozier, Erb, Berman & Burke (2000), the basic concepatients of wellness include self-responsibility; an ultimate goal; a dynamic, growing process; daily decision making in areas of nutrition, stress management, physical fitness, preventive health care, emotional health, and other aspects of health; and most importantly, the whole being of the individual. Using the works of Anspaugh, Hamrick, & Rosata (1991) as the basis, they declared further that there are five dimensions to wellness and for people to realize optimal health and wellness, individuals must take cognizance of the factors within each dimension. See figure 2 – 1.

Fig 2 – 1 The Dimensions of Wellness



Source: Adapted from Kozier, Erb, Berman and Burke 2000 Fundamentals of Nursing: Concepatients, Process and Practice.

Let us examine these factors one by one:

- **Physical** – The ability to carry out daily tasks, achieve fitness, maintain adequate nutrition and proper body fat, avoid abusing drugs and alcohol or using tobacco products, and generally to practice positive lifestyle habits.
- **Social –** The ability to interact successfully with people and within the environment of which each person is a part, to develop and maintain intimacy with significant others, and to develop respect and tolerance for those with opinions and beliefs.
- **Emotional –** The ability to manage stress and to express emotions appropriately. It encompasses the ability to recognize, accept, and express feelings and to accept one's limitations.

- **Intellectual –** The ability to learn and use information effectively for personal, family, and career development. It includes striving for continued growth and learning to deal with new challenges effectively.
- **Spiritual –** The belief in some force (nature, science, religion, or a higher power) that serves to unite human beings and provide meaning and purpose to life. It includes a person's own morals, values, and ethics.

In conclusion, they noted that the five components overlap to some extent, and factors in one component often directly affect another but nonetheless wellness involves working on all aspects of the model.

SELF ASSESSMENT EXERCISE 1

List the five (5) factors that contribute to wellness?

3.3 Illness and Disease

The term illness and disease to the layman means the same thing and no wonder they are used interchangeably in everyday language. However the two terms are not synonymous even though they may or may not be related. Hence the need to differentiate between the two terms. Any deviation from the accepted standard of well-being is regarded as illness. To Kozier, Erb, Berman & Burke (2000) illness is highly personal state in which the person's physical, emotional, intellectual, social, developmental, or spiritual functioning is thought to be diminished. For instance an individual may have a disease, say hypertension and not feel ill. By the same token a person can feel ill, that is feeling uncomfortable, yet have no discernible disease. By extension, illness may or may not be orchestrated by pathological abnormality. Therefore illness can be described as a situation in which somebody fails to perform his/her normal roles in the society.

Disease on the other hand is a biological parameter of non-health a pathological abnormality that is indicated by a set of signs and symptoms. It could also be defined as a state of discomfort that results when a person's health becomes impaired through disease, stress or an accident or injury. Implicit in the above statement is that this state of discomfort or abnormality may be the aftermath of one organism invading another with predictable negatively valued outcomes or consequences on the host. It could also be a result of breakdown of anatomic structures of an organism or a result of stress that the body cannot cope with. It may even not be organic phenomenon interfering with body function but the fabric of antisocial behaviour. For instance among the Yoruba ethnic group of western Nigeria, distasteful

behaviour are labeled as sickness as this has something to do with the state of mind. In other words such behaviour tends to exhibit the relationship between the mind and the body thus reflecting the state of disharmony between the mind and the body. Perhaps it is good to mention at this juncture that disease may not necessarily be symptom manifesting as many forms of diseases are hidden and allow the carrier or victim to go about their normal business.

3.4 Etiology of Illnesses and Diseases

In the dark ages before the advent of science, diseases were thought to be consequences of running foul to the laws of the gods/deity i.e. a punishment inflicted on man by demons or evil spirits secondary to offending the deity. This explains why the first line of action when somebody falls sick then is to appease the gods. This was later replaced by the single causation theory. Today we however know that multiple factors are considered to be instrumental to causing disease. Outlined below therefore are some of the etiological agents of the various diseases confronting man:

- Inherited genetic defects
- Developmental defects/Congenital malformations. Example – Atria Septal Defect
- Biological agents or toxins
- Physical agents such as temperature extremes, chemicals, or radiations
- Generalized response of tissues to injury or irritation
- Physiological and psychological reactions to various stressors
- Biochemical imbalances within the body.

It should however be mentioned as noted by Stephen (1992) that though many of these factors are interrelated, the causes of many diseases are still unknown.

3.5 Classification of Illnesses and Diseases

Illness may be classified as acute, chronic or terminal. Could also be classified as Primary (1^{o}) or Secondary (2^{o}). Let's quickly see what these means.

An **acute illness** is one that comes on suddenly and last a relatively short time. Example: Bacterial conjunctivitis, Gastroenteritis to mention a few. Acute illnesses are usually severe but curable; some however lead to long-term problems because of their sequelae. Sequelae are ill effects that result from permanent or progressive organ damaged cause by a disease or its treatment. A **chronic illness** on the other hand, is one

that is gradual in onset and last a relatively long time. Stephen (1992) paraphrasing the work of Zindler-Wernet and Weiss on Health Locus of Control and Preventive Health Behaviour submitted that chronic illnesses are illnesses that lead to at least some of the following characteristics: (1) permanent impairment or deviation from normal, (2) irreversible pathological changes, (3) a residual disability, (4) special rehabilitation, and (5) long term medical and/or nursing management. Examples include Arthritis, Chronic renal failure [CRF], Hypertension, and Diabetes Mellitus. A **terminal illness** is one in which there is no known cure. The terminal stage of an illness is one in which death has become inevitable.

A **1^{o}** illness is one that has developed independently of any other disease. Any subsequent disorder that develops from a pre-existing condition is referred to as **2^{o}** illness Example - Hypertension leading to Congestive Cardiac Failure (CCF). Furthermore, illness could be classified according to their etiological factors as follows: Hereditary, Congenital and Idiopathic.

Hereditary – A hereditary condition is one that is transmittable down the family tree i.e. from parent to their offspring through their genetic code. A common example in our environment is sickle cell anaemia. Hereditary illnesses may be manifested immediately after birth or develop at some time later.

Congenital – Congenital disorders are those that are present at birth and are products of faulty embryonic development especially during the first three month of intrauterine life otherwise referred to as period of organogenesis. Example includes Tetralogy of Fallot.

Idiopathic – An idiopathic illness is one that for which there is no known cause. Treatment is usually palliative (directed at relieving symptoms alone). A typical example is cancer.

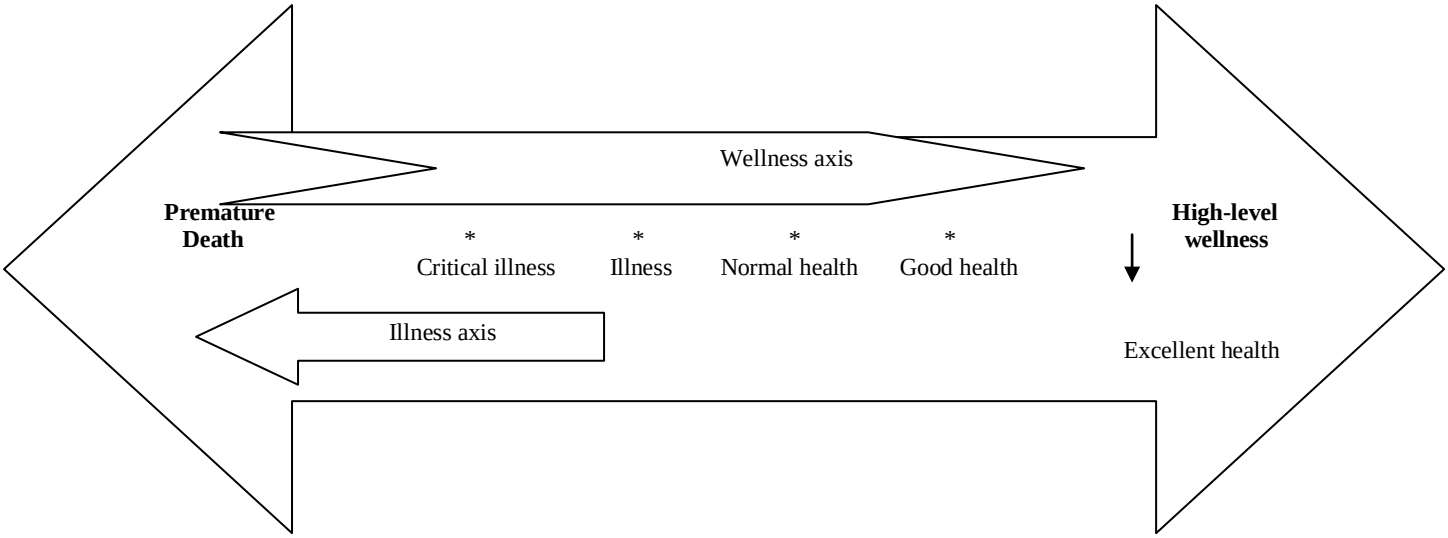
SELF ASSESSMENT EXERCISE 2

List the two main classification of illness?

3.6 The Health – Illness Continuum

A continuum is defined as a continuous whole. Our health is in a dynamic state of continuity and change constantly being challenged, stressed, abused and even enhanced by our genetic make-up and lifestyle, and by our wider ecological environment (Watkinson, 2002). Consequently, fluctuations of health and illness can be illustrated on a health-illness continuum. See figure 2 – 2 below.

Fig 4 – 2 Illness–Wellness Continuum



Source: Adapted from Rosdal, 1995: Textbook of Basic Nursing & Kozier, Erb, Berman and Burke 2000: Fundamentals of Nursing: Concepatients, Process and Practice.

People do not tend to be totally healthy or totally ill at any given time. Individual's state of health however falls somewhere on a continuum from high-level wellness to death. There is no exact point at which health ends and illness begins. Both are relative in nature, and for each individual there is range and latitude in which he may be considered ill or well (Fuerst, Wolff & Weitzel, 1974). When needs are blocked or threatened, one moves towards the "illness" end of the continuum and vice versa. The body adapts to change in an attempt to maintain homeostasis but high-level wellness is optimum. Nursing actions involving health promotion and illness prevention assist the patient/client not only in maintaining and increasing the existing level of health but also in achieving an optimal health (Heath, 1995). However to assist the patient/client in health maintenance and promotion, illness prevention, and adaptation to the changes that illness produces in every dimension of functioning, the nurse must understand all the aforementioned dimensions.

4.0 CONCLUSION

This unit has shown that health is a dynamic state and its conception/perception is highly varied. There however seems to be a consensus that it involves the whole person – mind, body and spirit – functioning at optimal level. And contrary to the traditional view of illness, it has been shown to be a highly personal state in which a person feels unhealthy or ill. Though usually associated with disease may occur

independently of disease. To provide effective nursing care and assist clients/patients in regaining and maintaining high-level wellness, nurses must therefore understand patients/clients conception of health as this influences their health belief and health practices.

5.0 SUMMARY

This unit examined the concept of health and illness. The unit employed a comprehensive and integrated approach to health, wellness and illness. It also examined the health-illness continuum. Nursing as a holistic and humanistic discipline is therefore concerned with promotion, maintenance and recovery of health. The subsequent chapter expatiates on how this is achieved.

ANSWER TO SELF ASSESSMENT EXERCISE 1

1. Physical 2. Social 3. Emotion 4. Intellectual 5. Spiritual

ANSWER TO SELF ASSESSMENT EXERCISE 2

1. Acute (Primary) 2. Chronic (Secondary).

6.0 TUTOR-MARKED ASSIGNMENT

Is health static or changing? Explain with particular reference to the health-illness continuum.

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UNIT 4 PROMOTING HEALTH

CONTENTS

1.0 INTRODUCTION

The popular axiom – prevention is not only better than cure but also cheaper than cure – cannot be more relevant than in today's world. This is because the recent past had witnessed more natural disasters than ever recorded. Emerging infectious diseases had been on the rampage with the resurgence of those hitherto eradicated communicable diseases, that have not only become more virulent but resistant to the simple therapeutic agents. All these coupled with the global economic recession and depreciation of currencies in many African states had compounded the already precarious level of people in the African nation. Therefore, health promotion becomes a veritable weapon to stem the all time high morbidity and mortality rate that has been trailing the African nation.

Interestingly health promotion is an important component of nursing practice. Health Promotion as Kozier, Erb, Berman, & Burke (2000) puts it 'as a way of thinking that revolves around a philosophy of wholeness, wellness, and well-being.' Implicit in the above statement is that there is a level of commitment that should be displayed by the individual, community, organization, and the government if the goal of health promotion is ever to be achieved. The role of each of this player and how the nurse can assist in health promotion therefore forms the focus of this unit.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- identify variables affecting health and explain the relationship between such and health
- define health promotion and distinguish it from illness prevention
- enumerate health promotion goals and discuss the levels of preventive care
- describe the behaviours that promote health
- discuss theoretical models of health and illness together with their assumptions
- differentiate health preventive or protective care from health promotion
- discusses the nurses' role in health promotion and illness prevention.

3.0 MAIN CONTENT

3.1 What Affects Health?

Health status of individuals in any community depends to a large extent on their level of awareness of factors that enhance and/or militate against their health. White (1998) contends that a great many things affect health. She groped them into four broad categories namely:

1. ***Genetic/Human Biology*** – It is not uncommon to hear that certain diseases run in families or have familial tendency. This is because human traits are transmissible from parents to offspring via the genes. Hence an individual genetic make-up to a large extent affects his state of health.

2. ***Personal Lifestyle/Behaviour*** – This is the area that exerts the most influence on health and well-being, and it is controlled entirely by the individual. As such it is the individual's decision whether these factors will promote health or lead to ill health. Although an increasing number of people are becoming aware of the relationship between health, lifestyle and illness, and are already developing health-promoting habits, but a sizeable proportion of the population are still naïve of this relationship. Simply put health promoting habits encompasses such things as: Diet, Exercise, Personal Care, Safe sex and Control sex, Tobacco and Drug use, Alcohol Consumption, and safety.

3. ***Environmental Influences*** – The aggregate of people, things, conditions, or influences surrounding man is what is referred to

as the environment. It could be physical, biological or social. Man and his environment are constantly interacting. The environment influences man and man influences his environment at all times i.e. the relationship is never static but always changing. Interestingly, health and the quality of life are greatly affected by this interaction.

Human beings enjoy optimum functioning when the air they breathe, the food they eat, the houses they live in, indeed the neighbourhood in which they stay is of good quality. If they are bad, they tend to promote disease, disability and discontent. For instance in metropolitan cities where domestic and industrial pollution is high, tarry particles, which contain cancer-producing chemicals, may exist. As such irritation to the eye and respiratory tissue may be rampant. In addition, overcrowding secondary to rural-urban migration and problems of population control enhances the spread of communicable diseases such as droplet infections. Besides, bad housing, lack of adequate facilities for the storage, preparation, and cooking of food are also intricately related to the development of malnutrition, poor growth and low immunity among people. Poor sanitation as well as lack of provision of drinkable water will also promote the spread of water borne disease with adverse consequences on healthy living.

It is also worth mentioning that technological advancement and industrialization with its attendant problems has placed new stresses on man such as transport difficulties, noise, and loneliness. All these factors are associated with greater incidence of hypertension, mental disorder and suicide. Noise can produce alteration in respiration and circulation, in the basal metabolic rate, and in muscular tension. Even the fetus is affected by certain factors in the mothers' environment. For instance the baby's well-being to a large extent depends on her mother's capability and knowledge of standard of hygiene, good nutrition, and avoidance of harmful substances e.g. some drugs.

4. ***Health Care*** – This encompasses such things as immunization, regular examinations and screening tests, prophylactic medications, to mention a few that man undertakes to prevent invasion of disease causing organisms and prevent the body from breaking down. Failure to undergo such treatment could spell doom for the body with serious adverse consequences on healthy living.

3.2 Defining Health Promotion

The concepts of health promotion, self-care and community participation emerged during 1970s, primarily out of concerns about the

limitation of professional health. Since then there have been rapid growth in these areas in the developed world, and there is evidence of effectiveness of such interventions states system although these areas are still in infancy in the developing countries (Bhuyan, 2004). The Ottawa charter, an important milestone in Health Promotion practice worldwide, defines Health Promotion as the process of enabling people to increase control over, and to improve, their health. To reach a state of complete physical, mental and social well-being, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment. Health is, therefore, seen as a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities. Therefore, health promotion is not just the responsibility of the health sector, but goes beyond healthy lifestyles to well-being (WHO Ottawa charter for health promotion, 1986). Consequently, the Ottawa charter noted that five key strategies for Health Promotion action are building healthy public policy, creating supportive environments, strengthening community action, developing personal skills and reorienting health services). This no doubt, settles any storm about the genesis of Health Promotion but has not addressed what Health Promotion is all about and how it is different from illness prevention.

Health promotion and illness prevention are closely related concepts, and in practice, overlap to some extent. Activities for **health promotion** help the patients/clients maintain or enhance their present levels of health while activities for **illness prevention** protect patients/clients from actual or potential threats to health. Both types of activities are future orientated. The difference between them involves motivations and goals. Health promotion activities motivate people to act positively to reach the goals of more stable levels of health. Illness prevention activities motivate people to avoid declines in health and functional states (Cox, 1995).

Health promotion activities can be passive or active. With passive strategies of health promotion, individuals gain from the activities of others without doing anything themselves. The fluoridation of municipal drinking water, the fortification of salt with iodine and milk with vitamin D are common examples of passive health promotion strategies. The active health promotion strategies on the other hand, involves active participation of individuals i.e. individuals are motivated to adopt specific health programs. For instance the weight reduction and smoking cessation programs require the patient/client to be actively involved in measures to improve their present and future levels of wellness while decreasing the risk of disease. Some health promotion and illness prevention programs are operated by health care agencies. Others are independently operated. Whichever, the point to be made is that health

promotion and illness prevention activities are important to both the consumer and the health care provider (Cox, 1995).

The avian influenza (bird flu) that recently broke out in certain parts of Nigeria presents an excellent picture of the how there could be an interplay of actions among the major actors in the health sector. The avian influenza epidemics, being a deadly disease that can be transmitted to man, arouse the society concern about the disease. Being a communicable disease and one that affect poultry farming, it also arouses the interest of commercial organizations and agriculture. Besides it also has a political element, with potential global repercussions. The jobs and livelihood of some farmers and those within the food industry particularly the fast food centers are at stake. There is of course, the possibility of widespread trans-species infection. We can then appreciate the concerted efforts of the individuals, the organization, the environment, the society, and the government (political). One cannot but therefore agreed with Kelly et al. (1993) that health cannot be effectively be promoted unless the organizational, social, individual, and environmental aspects are combined in an integrated approach.

3.3 Health Promotion Goals

Delaune & Ladner (1998) submitted the following as health promotion goals:

- Respect and support clients right to make decisions.
- Identify and use clients' strengths and assets.
- Empower clients to promote own health or healing.

Levels of Preventive Care

The three levels of prevention are:

- **Primary Prevention** – This is true prevention; it precedes disease or dysfunction and is applied to patients/clients that are considered physically and emotionally healthy (Cox, 1995). The goal is to decrease person's vulnerability to disease. It includes such activities as health education, immunization/vaccination, personal and environmental hygiene, good nutrition, good housing/avoidance of overcrowding, quarantine of suspects, and chemoprophylaxis.

- **Secondary Prevention** – Focuses on individuals who are experiencing health problems or illness or who are at risk of developing complications or worsening conditions. Activities are directed at diagnosis and prompt treatment, thereby reducing the

severity and enabling the patient/client to return to normal health at the earliest possible time (Edelman & Mandle, 1990; Cox, 1995). Secondary prevention includes screening techniques and treatment of early stages of disease to limit disability or delay the consequences of advanced disease (Cox, 1995; Delaune & Ladner, 1998).

- **Tertiary Prevention** – Instituted when a defect or disability is permanent and irreversible. It involves minimizing the effect of a disease or disability through such activities as rehabilitative nursing care for clients with permanent defect like blindness, to avert further disability or reduced function. The focus is to help clients reach and maintain their optimum level of functioning (Delaune & Ladner, 1998).

3.4 Behaviours that Promote Health (Healthy Habits)

Have you heard such phrase like habit is stronger than information? When we say something has become habitual, we mean it has become one's second nature; a regular way of behaving; a reflex action or instinctive response to a stimulus. Good health habits help to prevent disorder and/or enhance total wellness. On the contrary poor health habits will almost always adversely affect health status and individual's capability and efficiency. What then can we consider as healthy habits? The answer to this is obvious as practicing healthy habits cut across practically all aspects of our life viz:

Exercise: It's important for everyone to exercise, and we should all find the preventive maintenance fitness program best suited for us. There is no alternative, nor substitute that increases the potential for a happier, healthier and improved quality of life. "If exercise could be packed into a pill, it would be the single most widely prescribed, and beneficial medicine in the nation," says Robert N. Butler, MD, director of the National Institute on Aging (DiMartino, 1999). Exercise is necessary to maintain muscle tone, to stimulate circulation and respiration, and to help control body weight. All people need some sort of exercise daily. A person's age, occupation and general condition help to determine the appropriate amount and kind of exercise (Rosdahl, 1995). A moderate amount of daily exercise is better than occasional sports of strenuous activity. A study conducted by the Journal of Medical Association (JAMA, 277(16), April 23-30, 1997) included 11,470 women to determine the numerous benefits that ensues when a sedentary level is increased to merely a normal level – daily routine movement. The study revealed that the life preserving aspect of this minor change is huge" (DiMartino, 1999).

Nutrition and Diet: A First Cousin to Exercise. One without the other is like eating fries without catsup – it just doesn't work as well. A regular exercise regime means eating a balanced menu of foods, watching fat intake and supplementing the diet with nutrients and vitamins. However, when people exercise regularly, their diet must compensate for the extra calories burned. Although, individuals' nutritional needs vary, according to body build, age and activity, everybody needs certain nutrients to keep the body functioning and in good repair Eating regular and balanced diet and maintaining one's weight within the normal range are factors that contribute to wellness. Intake of salt, sugar, fat and red meat should be limited while liberal intakes of fruits, vegetables, and grains should be encouraged. Avoid alcohol consumption.

Elimination: The integumentary, respiratory, urinary and digestive systems are the organs primarily concerned with elimination of wastes from the body. Moderate intake of fibers in form of roughages (fruits and vegetables) supplies the bulk that stimulates proper adequate elimination of solids as faecal matter. Water intakes do assist the kidney in getting rid of liquid wastes. Avoidance of cigarette smoking and polluted air helps in preserving your lungs and your cardiovascular system (Rosdahl, 1995).

Sleep and Rest: Rest is soothing to the body. Most people need 7 – 8 hours sleep per night. Sometimes after a day's work, rest is needed rather than sleep. Try lying relaxed and letting your thought drift. Some people find that meditation or 'emptying the mind of all thoughts' is restful (Rosdahl, 1995).

Personal Hygiene: Maintenance of personal hygiene is necessary for comfort, safety and well-being. Activities of personal hygiene are basic to normal functioning. Hygiene refers to practices that promote health through personally cleanliness and it is fostered through activities like bathing, tooth brushing, cleaning and maintaining fingernails and toenails, and shampooing and grooming hair. Such activities help to protect the body from infections, make a good impression on others, and help to promote a positive self-image. For instance, regular bathing or cleansing removes perspiration oil, and pathogens from the skin. It also increases circulation and helps maintain muscle tone. Besides, bathing is refreshing; it can help wake one up in the morning and to induce sleep at night. Many a people shed their worries along with the day's accumulation of dirt by taking baths or showers. Grooming is equally important to one's well-being. Nails should be trimmed to comfortable length. Bitten nails are unsightly and may lead to infection. Shoes should be well fitted and comfortable. Clothes should be clean, well fitting and comfortable too. They should be appropriate for the type of

activity being performed. Dental care is also essential. Teeth to be brushed regularly and regular dental check-up encouraged. Fluorination of water to lessen tooth decay and consumption of food rich in calcium, phosphorus, vitamins A, C, and D for healthy and normal teeth formation and growth is expedient. The cutting down on consumption of sugary foods that is often overlooked is vital to the prevention of dental caries. While the eating of soft food is good, continuous eating of such foods affects the gums and teeth because chewing itself is needed to maintain the tone and holding power of the gums and the strength of the teeth. Eye care is another important aspect of personal care that must not be neglected in order to achieve full health. To this end, eyes examination should be done at least once a year.

Posture and Body Mechanics: Posture is the position of your body, the way its part line up when you stand, sit, move or lie while body mechanics is the term that refers to the use of the body as a tool. The way you stand, sit, or move affects your efficiency and the impression you create. Good posture improves your health saves your energy and prevents unnecessary muscle strains and back disorder (Rosdahl, 1995).

Safer Sex: The late twentieth century recorded an astronomical increase in the emergence and spread of deadly infectious diseases emanating primarily from unhealthy sexual practices. This informs the gospel of safer sex and the doctrine of ABC in the prevention of AIDS (Acquired Immune Deficiency Syndrome) and other sexually transmitted diseases. Safer sex involves carefully choosing one's sexual partner, mutual fidelity and the use of condom where in doubt.

Healthy Environment: As earlier stated, man and his environment are constantly interacting. The environment influences man and man influences his environment at all times i.e. the relationship is never static but always changing. Interestingly, health and the quality of life are greatly affected by this interaction. It is suffice to say "it is difficult to have optimum health if the environment is not safe."

Note: As beginning health care providers, nursing students are encouraged to develop their own health-promoting behavior to be better role models for clients.

3.5 Nurses' Role in Health Promotion, Health Protection, and Disease Prevention

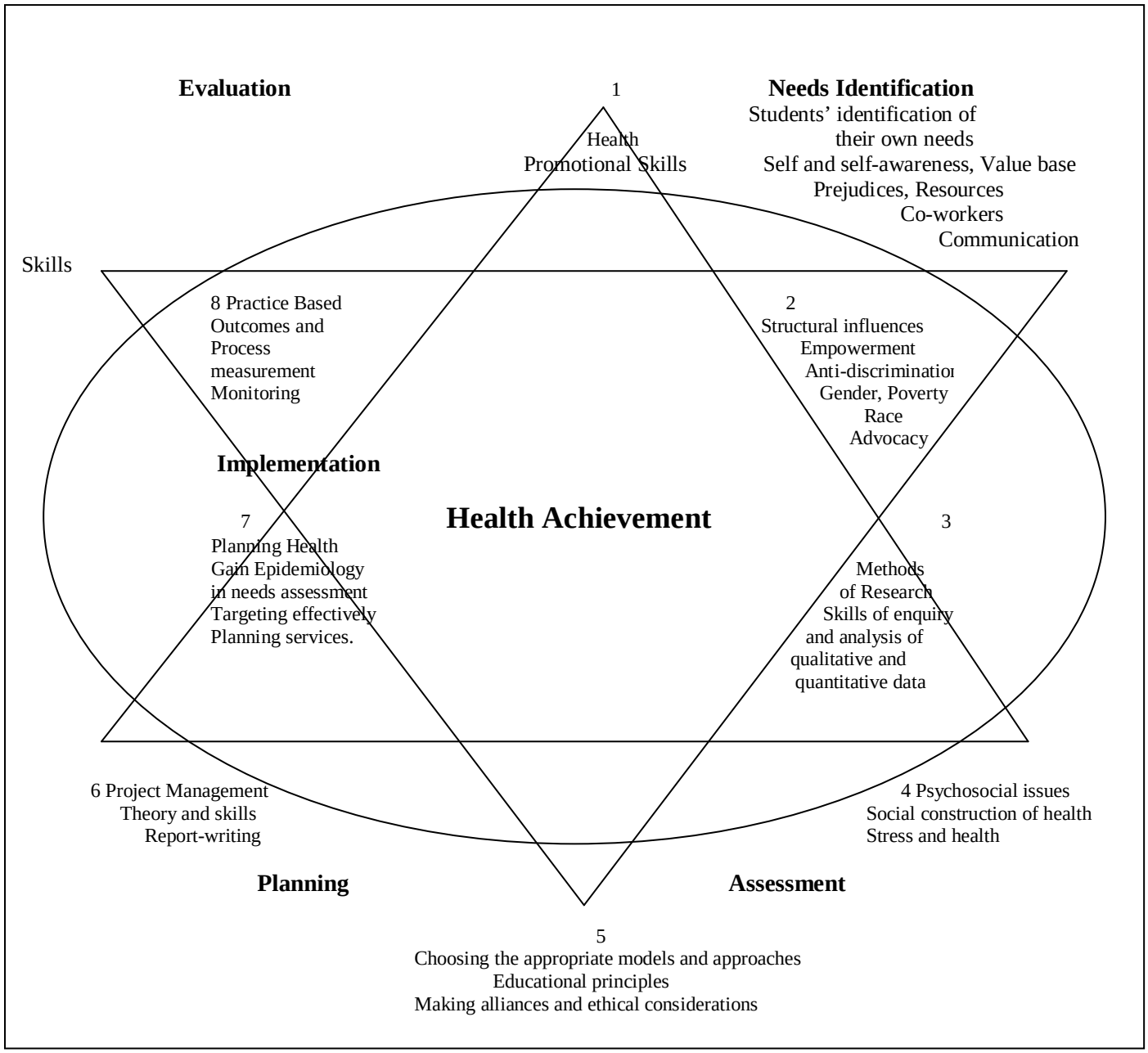
It is an open truth that investment in the health sector is rapidly becoming an amalgam of public and private partnerships. While it is becoming increasingly glaring that the responsibility for health promotion does not lie with health sector alone, Watinson (2002) argued

that nurses nonetheless have an unequal contribution to make to alliances created in the pursuit of health. Speaking in the same vein, Delaune & Ladner (1998) asserted that nurses play a key role in promoting health and wellness. Therefore there is no doubt about the nurses role in health promotion and disease prevention however the challenge before us as nurses is to find ways to motivate clients and families to develop health-promoting behaviors. This is against the background that health promotion is not simply something that is done to the client or patient, as in changing a dressing, but something that pervades the entire nursing care ranging from needs assessment, planning health gain to evaluating interventions and strategies for effectiveness and efficiency (Watkinson, 2002).

Delaune & Ladner (1998) identified health education/health counseling and motivation as two key components of health promotion strategies employed by nurses. Watkinson (2002) citing the English National Board's Higher Award (ENB, 1991) document observed the health promotion stands out as the 6th key characteristic of that document. Inherent in the said document (highlighted below), are salient features considered as essential to the performance of health promotion activities by nurses.

- Promote understanding of health promotion, preventative care, health education and healthy living.
- Understand and apply the principles and practice of health promotion in the work setting and create, maintain and take responsibility for a healthy work environment.
- Facilitate responsibility and choice among clients for healthy living, and their ability to determine their own lifestyles.
- Develop and implement strategies for health care based on understanding of the impact of health trends on resources.
- Consequently, Watkinson (2002) illustrated the many sided roles of the nurse in health promotion with this schematic diagram (Fig 3 – 1).

Fig 3.1 The Role of the Nurse in Health Promotion



Source: Watinson (2002) Promoting Health. In R. Hogston & P. M. Simpson (eds.) *Foundations of Nursing Practice; Making the Difference* (2nd ed.)

4.0 CONCLUSION

The issue of health promotion is an all encompassing one. This unit has demonstrated on one hand the limitations of modern medicine and health care systems in single handedly improving the health status of the

population. On the other hand it emphasized the role of nurses as a key strategy for improving health through a holistic approach consisting of not only a medical dimension but also psychological, social and economic dimensions.

5.0 SUMMARY

The Ottawa charter, an important milestone in Health Promotion practice worldwide, defines Health Promotion as the process of enabling people to increase control over, and to improve, their health. To reach a state of complete physical, mental and social well-being, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment. Therefore health status of individuals in any community depends to a large extent on their level of awareness of factors that enhance and/or militate against their health. However, good health habits help to prevent disorder and/or enhance total wellness. On the contrary poor health habits will almost always adversely affect health status and individual's capability and efficiency. As such nurses play a key role in helping clients to adopt healthy lifestyles and use approaches such as role modeling and formal teaching to motivate client change.

ANSWER TO SELF ASSESSMENT EXERCISE 1

Genetic, Personal life style, Environment, Technological advancements.

ANSWER TO SELF ASSESSMENT EXERCISE 2

These are activities that help an individual to achieve and maintain a healthy status.

Examples are: elimination, personal hygiene, sleep and rest, exercise, posture and body mechanisms.

6.0 TUTOR-MARKED ASSIGNMENT

As a nurse in a remote village, you observed that majority of the pregnant women becomes anemic during pregnancy with frequent incidence of malaria in pregnancy, and besides, over 90% are already genitally mutilated. You initially focus on diet and reduction in malaria attack. How would you begin to design the program? What resources do you need?

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UNIT 5 ASSESSING HEALTH I – VITAL SIGNS

CONTENTS

1.0 INTRODUCTION

Health assessment is vital to monitoring the progress made by clients/patients as well as establishing whether identified needs have been met. Although health assessment is such a broad area encompassing observation, physical examination and interviewing/History taking and requiring the use of all senses, the measurement of vital signs appears to be a regular and essential feature. Hence this unit is dedicated to discussing vital signs with a view to enhancing nurses' technical skills in the art of assessing vital signs as well as deepening their theoretical/knowledge base. This to our mind, will not only help nurses to measure the vital signs correctly but will go a long way at assisting them to understand and interpret the values, communicate findings appropriately and begin interventions as needed.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- identify the measurements that comprise the vital signs
- identify when to assess vital signs
- define body temperature
- describe the thermoregulatory mechanisms
- identify the variations in normal body temperature that occur from infancy to old age
- discuss factors affecting body temperature

- describe how to measure body temperature using various routes stating the advantages and disadvantages associated with each route.

3.0 MAIN CONTENT

3.1 What are Vital Signs?

Donovan, Belsjoe, and Dillon (1968) gave this over-simplified illustration that beautifully captures what vital signs are. In their words ' The healthy person engaging in his daily activities is relatively unconscious of much chemical process going on at all times in his body. A never-ending production of energy in the form of heat is taking place. The fuel we supply to our body as food is continuously being burned away when it meets the oxygen in the air we breathe. This process is called *oxidation.* When conversion of food to energy is occurring normally, our heart is pumping a steady average amount of blood; our lungs are taking in a regulated, steady flow of air; and the heat of our body is constant at an average temperature. These functions are all related and in delicate balance. When this balance is disturbed by such things as heavy exercise, the rate of heat production, blood flow, and breathing will vary from normal. This variations in temperature, pulse, respiration, and blood pressure (otherwise referred to as vital signs) give nurses and doctors their most important clues to the state of the body's functioning.' Vital signs or cardinal signs as they are sometimes called could therefore be defined as signs reflecting the body's physiological state, which are governed by body's vital organs (brain, heart, lungs) and necessary for sustaining life. Consequently, Temperature, Pulse, Respiration, and Blood pressure are referred to as vital signs because they are indicators of vital functions of the body that are necessary to sustain life.

3.2 Times to Assess Vital Signs

- On admission to a healthcare agency to obtain baseline data.
- When the patient's/client's general physical condition changes (as with loss of consciousness or increased intensity of pain)
- Before and after surgery or an invasive diagnostic procedure.
- Before and/or after administration of certain medication that affect the cardiovascular, respiratory, and temperature control function.
- Before and after nursing interventions influencing a vital sign (such as when a patient/client previously on bed rest ambulates or when a patient requires tracheal suctioning)
- When the patient reports non-specific symptoms of physical distress (such as feeling 'funny' or 'different')

- (Webster, 1995; Kozier, et. al., 2000).

3.3 Body Temperature

The term temperature is defined as the state of heat or coldness within a substance, which can be measured against a standard scale (^{0}C or ^{0}F) i.e. the degree of hotness or coldness of an object measured against a standard scale. Man and other mammals unlike fishes, reptiles, and other poikilothermic animals are homoeothermic, that is warm blooded and maintain their body temperature independently of the environment. Our body continually produces heat as a by-product of metabolism. This heat is transported by blood round the body. Heat is however also continually lost from the body. In essence, body temperature as indicated on a clinical thermometer, is the balance between the heat produced and the heat lost from the body measured in heat units called degree i.e. the measure of heat inside the body.

Basically there are two kinds of body temperature viz: **Core temperature** and **Surface temperature**. The core temperature is the temperature of the deep tissues such as the cranium, thorax, abdominal cavity, and pelvic region. It remains relatively constant. The surface temperature is the temperature of the skin, the subcutaneous tissue, and fat. It by contrast, rises and falls in response to the environment. The normal core body temperature is a range of temperatures fluctuating between 36.1 and 37.2^{0}C (Kozier, et.al., 2000). The big question however is – how is the core temperature kept within this relatively narrow range? This forms the focus of the subsequent paragraphs.

Thermoregulation

Thermoregulation is the body's physiological function of heat regulation to maintain a relatively constant internal body temperature. This is achieved by a complex interplay of physical and chemical/hormonal mechanism and sympathetic stimulation that is coordinated by the heat-regulating center in the brain called the hypothalamus. The hypothalamus controls the body temperature in the same way that a thermostat works in the home. The hypothalamus does this through its anterior and posterior part. The anterior hypothalamus is concerned with heat dissipation while the posterior hypothalamus controls heat conservation.

The hypothalamus senses minor changes in body temperature. When the body temperature deviates from the set point, the temperature center of the hypothalamus (hypothalamic integrator located in the preoptic area

of the hypothalamus) either activates heat loss (cooling) or heat production to ensure that the core temperature remains within the safe physiological range (Cox, 1995).

Heat Production

Heat is produced in the body through the chemical oxidation of food substances (metabolism of food substances) that results in the release of energy, and this is a continuous process. The body converts energy supplied by metabolized nutrients to energy forms that can be used directly by the body. One form of this energy is thermal energy. Really, energy is measured in terms of heat. A kilocalorie is an energy value (heat measure) of a given food; 1 kilocalorie equals 1000 calories (the amount of heat required to raise temperature of 1 kilogram of water by 1^0 C. This type of heat liberation is usually expressed as the metabolic rate and measured as basal metabolic rate or BMR (the rate of energy use in the body needed to maintain essential activities). It should be mentioned that heat production increases when a person is active and most heat production comes from the deep tissue organs (brain, liver, and heart) and the skeletal muscles (Estes, 1998).

Heat production in the body is however increased by epinephrine, nor epinephrine, thyroxine and triiodothyronine. These hormones increase the rate of cellular metabolism in many body tissues. Epinephrine and nor epinephrine apart from its vasoconstrictive effect, directly affect liver and muscle cells, thereby increasing cellular metabolism. Vasoconstriction in human's internal organs produces heat and blood flow from the internal organs carries heat to the body surface. The thyroid hormones thyroxine and triiodothyronine increase basal metabolism by breaking down glucose and fat. This effect is called chemical thermogenesis (Kozier, et. al., 2000; Estes, 1998).

Muscular activity also produces heat from breakdown of carbohydrates and fats and through shivering. The skin is well supplied with heat and cold receptors but because cold receptors are more plentiful, the skin functions primarily to detect cold surface temperature. When the skin becomes chilled, its sensors send information to the hypothalamus, which initiates shivering (involuntary skeletal muscles contractions in response to cold) and vasoconstriction. This leads to increased muscular tone, which enhances further metabolism. Physical exercise, often found comforting in cold weather also increases heat production by increasing muscle tone and stimulating metabolism. In a nutshell, when the body suffers a significant heat loss the hypothalamus transmit impulses to stimulate heat production through vasoconstriction (narrowing of blood vessels), muscle shivering, piloerection (hair standing on end) and inhibiting sweating. However, apart from these major means of heat production, the body also gains heat from its environment but this is negligible and of less significance to the heat produced in the muscles (Webster, 1995; Estes, 1998; Kozier, et. al., 2000).

Heat Loss

When the body heat rises, nerves in the hypothalamus (the sensors) become heated and impulses/signals are then sent out to decrease heat production and increase heat loss. This it does by triggering perspiration (diaphoresis) from millions of sweat glands that lie deep below the dermal layer of the skin, vasodilation (the widening of blood vessels), and inhibition of heat production. The body cools itself. Heat is dissipated from the body primarily through physical processes. As much as 95% is lost through radiation, convention, and evaporation of water from the lungs and skin. Most of the remaining amount is lost through urination and defecation and in raising the temperature of inhaled air to body temperature. A negligible amount is lost through conduction except when the body is in contact with cold surfaces for prolonged period of time.

Heat Loss Mechanisms

The various physical processes through which heat is lost from the body are:

Radiation: is the transfer of heat from the surface of one object to the surface of another without contact between the two objects, mostly in the form of infrared rays (Guyton, 1996). Heat radiates from the skin to cooler nearby objects and radiates to the skin from warmer objects. The amount of heat lost by radiation from the skin varies with the degree of dilation of surface blood vessels when the body is overheated, and with the extent of vasoconstriction when the body is chilled. Radiant heat loss can be enhanced by removing clothing or by wearing light clothing meaning that heat loss through radiation can be curtailed by covering the body with cloth especially dark, closely woven clothes. Another thing that affects heat loss through radiation is positioning; a man in erect position with arm and legs extended radiates more heat than one in dorsal position (Webster, 1995).

Conduction: This is the transfer of heat from one object to another object of lower temperature that is in contact with it. Notice that conductive transfer cannot take place without contact between the molecules of both objects. The amount of heat transferred depends on the temperature difference and the amount and duration of the contact (Kozier, et. al., 2000). As earlier stated, conduction accounts for minimal heat loss from the body except, when a body is immersed in cold water. Interestingly, water conducts heat more efficiently than air. Therefore water used for bathing the patient should be above body temperature to prevent conductive heat loss. However, if the patient's

temperature is abnormally high, the nurse can lower it by tepid sponging thereby taking advantage of conductive heat loss (Webster, 1995).

Convention: Convention is the dispersion of heat by air currents. The body usually has a small amount of warm air adjacent to it. This warm air rises and is replaced by cooler air, and so people always lose a small amount of heat through convention but can be artificially enhanced through the use of fan to promote heat loss from febrile patient. It is important to note that the speed of movement of air surrounding the skin increases, the convention of heat loss from the skin increases (Webster, 1995; Kozier, et. al., 2000).

Evaporation: This simply means the vaporization of fluid i.e. changing from liquid state to gaseous state. The physicist makes us to understand that heat energy is needed to effect this change. Mountcastle (1980) reported that for each gram of water that evaporates from the body surface, approximately 0.6kilocalorie of heat is lost. In view of the continuous evaporation of water from the respiratory tract, the skin and the mucosa of the oral cavity tagged insensible water loss, there is also accompanying insensible heat loss which medical experts claim to accounts for about 10% of basal heat loss.

Behavioral Control of Body Temperature

In addition to heat production and heat loss mechanisms described above, the body has potent mechanism for temperature control known as the behavioral control. This encompasses voluntary acts that people take to maintain comfortable temperatures in response to body signaling conditions of either being overheated or too cold (Estes, 1998). They include such measures as changing environment, adding more clothing or changing from light to thick clothing, raising the temperature settings on heating thermostats, putting on air conditioner, turning on fans, taking a cold shower, to mention a few.

3.4 Factors Influencing Body Temperature

Temperature monitoring, no doubt stands out as one of the commonest function of the nurse and in view of the importance temperature variation in health assessment, it has become expedient for nurses to become aware of factors that influence body temperature. Among these factors are:

Age – At birth, the newborn leaves a warm, relatively constant environment and enters one in which temperature fluctuates widely. Temperature control mechanisms are not fully developed; thus an infant's temperature may change drastically with changes in the

environment. Therefore, the newborn must be protected from temperature extremes and clothing must be adequate. Temperature regulation continues to be labile until children reach puberty. Many older people, particularly those over 75 years, are at risk of hypothermia (temperature below 36^0C for a variety of reasons, such as inadequate diet, loss of subcutaneous fat, lack of activity, and reduced thermoregulatory efficiency (Webster, 1995; Kozier, et. al. 2000).

Exercise – Muscular activity requires an increased blood supply and an increase in carbohydrate and fat breakdown for more energy. This increased metabolism causes increase in heat production and consequently the body temperature. As such hard work or strenuous exercise can increase body temperature to as high as 38.3 – 40^0C (Webster, 1995; Kozier, et. al. 2000).

Circadian Rhythms (Diurnal Variations) – Body temperature normally changes throughout the day, varying as much as 1^0C between morning and late afternoon. It is usually lowest during sleep between 1am and 4am and rises steadily until about 6pm and then declines to early morning levels (Webster, 1995; Kozier, et. al. 2000).

Hormone Level – Women usually experience greater temperature fluctuations than men. This has been attributed to greater hormonal fluctuations women experiences. For instance during menstrual cycle, progesterone levels rise and fall cyclically. Before start of menstrual cycle, progesterone levels are low, and the body temperature falls a few tenths of a degree below the baseline. This lower temperature persists until ovulation. During ovulation, greater amounts of enter the circulatory system and raise the body temperature to previous baseline levels or higher. Body temperature fluctuations also occur in menopausal women due to instability of the vasomotor controls for vasodilation and vasoconstriction. In fact one the cardinal symptoms of the post-menopausal syndrome are the experience of periods of intense heat and sweating lasting from 30 seconds to 5 minutes. The amount of thyroxine, triiodothyronine, epinephrine/adrenaline, and norepinephrine/noradrenaline circulating in the body also affect heat production and basal metabolic rate (Webster, 1995).

Stress – Physical and emotional stress increase body temperature through hormonal and neural stimulation which sets into motion chains of physiological reactions. These physiological changes like the release of adrenaline with associated increase in heart rate causes increased metabolism, which in turn increases heat production. Nurses may therefore anticipate that individuals who are anxious about entering the hospital or undergoing a surgical procedure could register a higher than normal temperature (Webster, 1995).

Environment – Extremes in environmental temperatures can affect a person's temperature regulatory systems. If the temperature is assessed in a very warm room and the body temperature cannot be modified by convention, conduction, or radiation, the temperature will be elevated. Similarly if the client has been outside in extremely cold weather without suitable clothing, the body temperature may be low (Kozier, et. al. 2000).

SELF ASSESSMENT EXERCISE 1

List out the factors that can influence body temperature.

3.5 Alterations in Body Temperature

Altered body temperature occurs when the body temperature rises above the upper normal limit or fall below the lower normal limit (subnormal or lowered body temperature). An extremely high or extremely low temperature can be very fatal. Survival is rare if the core temperature is above 42.2^0C or below 34^0C (Roark, 1995).

Elevated Body Temperature – Body temperature rises when heat production increases or when heat loss decreases or both occurring simultaneously. A body temperature above the normal range is called pyrexia, what is referred to as fever in lay language, and the client who has a fever is said to be pyretic on febrile while the one who has not is being referred to as a febrile. Table 6-1 present the different shades of pyrexia.

Table 5 – 1 Levels of Pyrexia

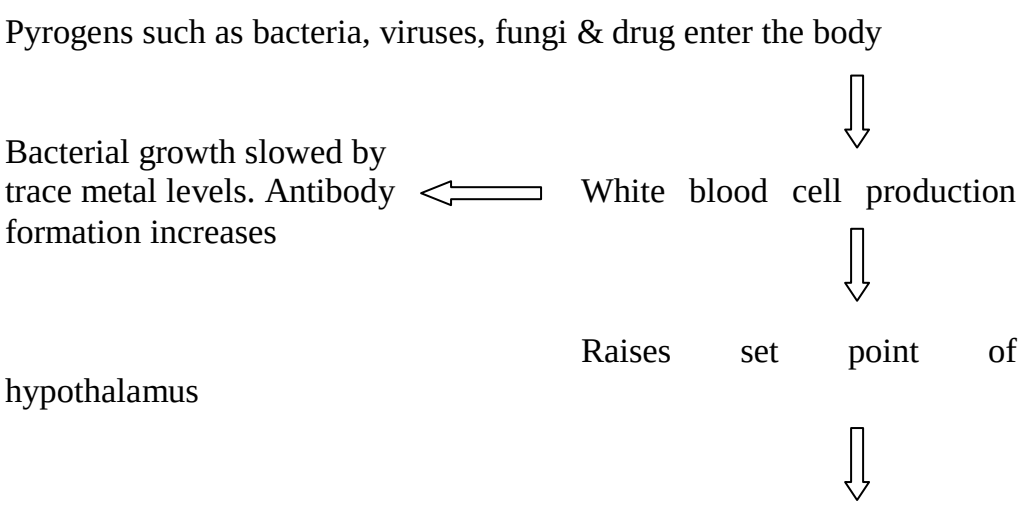
37.3 – 38.3^{0}C	**-**	**Low Pyrexia**
38.4 – 39.4^{0}C	**-**	**Moderate Pyrexia**
39.5 – 39.5^{0}C	**-**	**High Pyrexia**
Over 40.5^{0}C	**-**	**Hyperpyrexia**

Source: Adapted from Ross and Wilson Foundations of Nursing and First Aid (6^{th} ed.).

Pyrexia/fever is a symptom of some disorder. It often accompanies illness or it may a sign that the body is fighting an infection. In some cases a slightly above normal temperature may be useful to fight microorganisms. For this reason, it isn't always desirable to treat fever immediately (Roark, 1995).

A true fever results from an alteration in the hypothalamic set point. Bacteria, viruses, fungi and certain antigens are pyrogens (substances that causes a rise in body temperature). Fever may also result from administration of a drug. A drug fever can be hypersensitivity reaction accompanied by allergy symptoms such as rash, itching (Hanson, 1991; Webster, 1995). For ease of assimilation, Fig 6 – 1 presents a simplified flow chart illustrating the pathphysiologic changes that leads to development of fever.

Fig 5 – 1 Mechanism of Fever



Source: Adapted from Webster, C. 1995. In H. B. M. Heath (ed.) *Potters and Perry's Foundations in Nursing Theory and Practice*

After the cause of fever is removed (for example, destruction of bacteria by antibiotic medication) the hypothalamic set point drops and the body initiates the heat loss mechanisms earlier on described. A sudden drop from fever to normal is however called **crisis** while a gradual return of an elevated temperature to normal is referred to as **lysis**

Types of Fever

Four types of fever are identifiable. They are: Intermittent fever, Remittent fever, Constant fever, and Relapsing fever. A temperature that alternates between fever and normal or subnormal is called intermittent fever. In remittent fever, there are wide fluctuations in body temperature over the 24hr period, all of which are above normal or at best near

normal. When the body temperature fluctuates minimally while still being elevated, the condition is termed constant fever. Relapsing fever on the other hand, is characterized short febrile periods of a few days interspersed with periods of, 1 or 2 days of normal body temperature.

Clinical Signs of Fever

Irrespective of the initiating cause or the type of fever, the clinical features are similar. Fig 6 – 2 therefore presents an outline of the varied manifestation of fever.

Table 5 – 2 Clinical Signs of Fever

Onset (cold or child stage)	Glassy-eyed appearance
Increased heart rate	Increased pulse and respiratory rates
Increased respiratory rate and depth	Increased thirst
Shivering	Mild to severe dehydration
Pallid, cold skin	Drowsiness, restlessness, delirium, or convulsions
Complaints of feeling cold	Herpetic lesions of the fever is prolonged
Cyanotic nail beds	Loss of appetite (if the fever is prolonged)
"Gooseflesh" appearance of the skin	Malaise, weakness, and aching muscles
Cessation of sweating	
Course	**Effervescence(fever abatement)**
Absence of chills	Skin that appears flushed and feels warm
Skin that feels warm	Sweating
Photosensitivity	Decreased shivering
	Possible dehydration

Source: Adapted from Kozier, et. al. 2000. Assessing Health. In *Fundamental of Nursing: Concepts Process and Practice*

Nursing Management of Clients with Fever

Nursing interventions for clients with fever could be summarized as follows:

- Monitor vital signs
- Assess skin color and temperature
- Monitor white blood cell count, hematocrit value, and other pertinent laboratory reports for indications of infection or dehydration.
- Remove excess blankets when the client feels warm, but provide extra warmth when the client feels chilled.
- Provide adequate nutrition and fluids (e.g. 2500 – 3000ml per day) to meet the increased metabolic demands and prevent dehydration. Clients who sweat profusely can become dehydrated.
- Measure intake and output.
- Reduce physical activity to limit heat production, especially during the flush stage.
- Administer antipyretics (drugs that reduce the level of fever) as ordered.
- Provide oral hygiene to keep the mucous membranes moist. They can become dry and cracked as a result of excessive fluid loss.
- Provide a tepid sponge bath to increase heat loss through conduction.
- Provide dry clothing and bed linens.

Lowered Body Temperature – A temperature significantly below normal is called **Hypothermia.** Roark (1995) submitted that such temperature often precedes normal death and may occur as a result of overexposure to extremely cold environment or cold water, as in drowning. Kozier, et. al. in their write-up (2000) attributed its development to three physiologic mechanisms: (a) excessive heat lost (b) inadequate heat production to counteract heat loss; and (c) impaired hypothalamic thermoregulation. Patients most at risk include neonates & infants; geriatric patients; traumatized patients; patients with stroke, diabetes, and drug or alcohol intoxication Webster, 1995).

Hypothermia may however be accidental or induced. Accidental hypothermia is life threatening and must be treated immediately. Induced hypothermia is deliberate lowering of body temperature to decrease the need for oxygen by the body tissues. It could involve the whole body or body part. It is sometimes indicated prior to some surgical procedures e.g. cardiac and brain surgery Kozier, et. al., 2000)

Clinical Signs of Hypothermia

- Decreased body temperature, pulse, and respirations
- Uncontrolled severe shivering (initially)
- Feelings of clod and chills
- Pale, cool, waxy skin
- Hypotension
- Cardiac dysrhythmias
- Decreased urinary output
- Lack of muscle coordination
- Disorientation
- Drowsiness progressing to coma

Nursing Management of Hypothermia

The priority treatment is conscious prevention of further decrease in body temperature. This could be achieved through a combination of measures stated below:

- Provision of warm environment (room temperature)
- Provision of dry clothing
- Application of warm blankets
- Keeping of limbs close to body
- Covering the client scalp with a cap or turban.
- Supplying warm oral intravenous fluids.
- Application of warming pads.

3.5 Assessing Body Temperature

Sites for Assessment of body Temperature

The four most common sites are oral, rectal, Axillary, and the tympanic membrane. Each has its own merit and demerits, which are summarized in Table 6 – 2.

Table 5 – 3 Advantages and Disadvantages of the four Sites for Body Temperature Measurement

Site	Advantages/Merits	Disadvantages/Demerits/Flaws
Oral	Most accessible and convenient	Mercury-in-glass thermometers can break if bitten; therefore they are contraindicated for children under 6years and clients who are confused or who have convulsive disorders or patients who breathe only with mouth open. Inaccurate if client has just ingested hot or cold food or fluid or smoked. Could injure the mouth following oral surgery.
Rectal	Most reliable measurement	Inconvenient and more unpleasant for clients; difficult for client who cannot turn to the side. Should not be used in patients who have a rectal disorder like tumor or severe hemorrhoids. Could injure the rectum following rectal surgery. Placement of the thermometer at different sites within the rectum yields different temperatures, yet placement at the same site each time is difficult. A rectal glass thermometer does respond to changes in arterial temperatures as quickly as an oral thermometer, a fact that may be potentially dangerous for febrile clients because misleading information may be acquired. Presence of stool may interfere with thermometer placement. If the stool is soft, the thermometer may be embedded in stool rather than against the wall of the rectum. If the stool is impacted, the depth of the thermometer insertion may be insufficient. In newborns and infants, insertion of the rectal thermometer has resulted in ulceration and rectal perforations. Many agencies advise against using rectal thermometers

		on neonates.
Axillary	Safest and most non-invasive	Requires the nurse to hold the thermometer in place for a long time; is less accurate.
Tympanic Membrane	Readily accessible; reflects the core temperature. Very fast.	Can be uncomfortable and involves risk of injuring the membrane if the probe is inserted too far. Repeated measurement may vary. Right and left measurements can differ. Presence of cerumen can affect the reading.

Guidelines for Taking body Temperature

Preparation

- ***Patient:*** Explain procedure to gain consent and co-operation. Assess patient regarding site suitable for temperature recording (see Points for Practice (PPP) overleaf). Patient should not have had a hot drink, smoked a cigarette or exercised within the previous ten minutes.
- ***Equipment/Environment:*** Clinical mercury thermometer; Disposable cover for the thermometer or alcohol swab for cleaning it; & Observation chart.
- ***Nurse****:* Hands must be clean.

Procedure

Use of Mercury Thermometer

1. Collect the thermometer – Each patient may have an individual thermometer kept at the bedside or there may be several for general use kept centrally.
2. Inspect the thermometer to ensure that it is clean and reading below 35^0C. Shake down the mercury if necessary (see PPP).
3. If appropriate, apply the disposable cover according to the manufacturer's instructions and remove the backing paper.

Oral

4. Ask the patient to open his/her mouth and gently insert the thermometer under their tongue next to the frenulum. This is adjacent to the sublingual artery, so the temperature will be close to core temperature.

5. Ask the patient to close their lips, but not their teeth, around the thermometer to prevent cool air circulating in the mouth.
6. Leave in position for 2-3 minutes (see PPP).
7. Remove the thermometer taking care to touch only the part that has not been in contact with the patient's mouth. If applicable, remove the disposable cover according to the manufacturer's instructions and dispose of appropriately
8. Holding the thermometer horizontally at eye level, note the level of the mercury.

Axilla

9. Do not use a disposable cover as this is not necessary and interferes with skin contact.
10. Ask/assist the patient to expose his/her axilla, for an accurate recording, the axilla must be dry.
11. Insert the thermometer into the axilla and ask/assist the patient to keep their arm close against the chest wall to ensure good contact with the skin.
12. Leave in position for five minutes.
13. Holding the thermometer horizontally at eye level, note the level of the mercury

Points for Practice

The rectal site is no longer recommended unless an electronic probe is being used. Shake down the thermometer by holding firmly in your dominant hand. Stand back from any furniture (e.g. bed table) to avoid striking with the thermometer. With a flicking action, shake the thermometer until the mercury is down below 35^0C. This may take several shakes to achieve. Unlike a room thermometer the mercury in the thermometer does not go down as the temperature falls (i.e. when in storage) as there is a kink in the column, which confers on it a self-registering property. The thermometer must remain in the mouth for at least two minutes to obtain an accurate recording, but should not be left for longer than three minutes as this is uncomfortable for the patient. Electronic oral and tympanic thermometer and disposable thermometer are increasingly being used.

Post-Procedure

Patient: Ensure patient comfort. Answer any questions regarding the recording.

Equipment/Environment*:* Shake down the mercury. If a disposable cover has been used no cleaning is necessary, if no cover has been used, the thermometer should be cleaned with an alcohol swab and stored dry according to local policy.
Nurse*:* Chart temperature recording. Report any abnormality

Use of Electronic Thermometers

Oral

Electronic oral thermometers are increasingly being used in hospitals. They are efficient and easy to use, with an audible signal indicating when the maximum temperature has been reached. The probe, covered by a disposable plastic cover, is placed under the tongue in the same way as a mercury thermometer. Each cover is for use by one patient only and is usually kept clean and dry on the patient locker between use. It is discarded when the patient is discharged from the ward.

Tympanic

Some electronic thermometers are designed to measure the temperature by inserting probe into the outer ear, adjacent to (but not touching) the tympanic membrane. Again a special cover is used for each patient to prevent cross-infection. An infrared light detects heat radiated from the tympanic membrane and provides a digital reading. This provides a more accurate measure of body core temperature as it is close to the carotid artery. The patient may need more explanation than usual because although most people will have had their temperature recorded at some point, they may be surprised to find you approaching their ear.

Conversion of Temperature Scales (Centigrade & Fahrenheit)

Depending on your country of practice you will be expected to be familiar with either of these measuring scales. However, since nursing is an international occupation, it is better to be conversant with the use of both scales. You can easily convert centigrade to Fahrenheit by multiplying the centigrade temperature by the fraction $^{9}/_{5}$ and adding 32. But to convert Fahrenheit to centigrade, first subtract 32 from the Fahrenheit temperature, and then multiply by $^{5}/_{9.}$

4.0 CONCLUSION

The importance of vital signs in health monitoring and evaluation of client's health status cannot be over-emphasized. Knowledge of factors affecting heat production and heat loss helps the nurse to implement appropriate interventions when the client has an altered body temperature.

5.0 SUMMARY

Vital signs are signs reflecting the body's physiological status. They comprise temperature, pulse respiration, and blood pressure. Baseline values establish the norm and variation from normal may indicate possible problems with client's health status. Human beings maintain a relatively constant temperature independent of their environment. This the body achieve through thermoregulation. The four sites commonly used for assessing body temperature are oral, rectal, axillary, and tympanic membrane, each with its advantages and disadvantages. The nurse selects the most appropriate site according to the client's age and condition. Factors affecting body temperature include age, sex, diurnal variation, exercise, hormones, stress and environmental temperatures. Apart from these normal deviations in health, altered temperature (fever or hypothermia) may develop and it is the nurses' responsibility to institute appropriate therapy.

ANSWER TO SELF ASSESSMENT EXERCISE

Age, Environment, Stress, Hormonal level and Exercise.

6.0 TUTOR-MARKED ASSIGNMENT

Explain the thermoregulatory mechanism and discuss the various factors influencing body temperature.

Sade, a 6-year old girl was brought to your hospital following an episode of high fever. Discuss your management of Sade during the pyrexic phase.

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MODULE 2

UNIT 1 ASSESSING HEALTH II – VITAL SIGNS (CONTD)

CONTENTS

1.0 INTRODUCTION

This unit examines the other components that make up the vital signs, which are respiration, pulse and blood pressure.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- describe the physiological mechanisms governing pulse, respiration, and blood pressure
- identify normal ranges for each vital sign
- identify the variations in pulse, respirations, and blood pressure that occur in a normal healthy state from infancy to old age

- select appropriate equipments needed for measuring each vital sign
- identify the different sites for assessing pulse and list the characteristics that should be included when assessing pulses
- explain how to measure the apical pulse and the apical-radial pulse
- describe the mechanics of breathing/the mechanism that controls respiration and demonstrate the ability to count the respiration of a patient accurately
- discuss characteristics that should be included in a respiratory assessment
- explain how to measure a blood pressure and differentiate between systolic and diastolic pressure.

3.0 MAIN CONTENT

3.1 Respiration

Human survival depends on the ability of oxygen (O_2) to reach body cells and carbon dioxide (CO_2) to be removed from the cell. The body performs this heroic function via respiration. Respiration is generally defined as the act of breathing. This involves two distinctly different processes: **external respiration**, which is the exchange of, gases between an organism and its environment i.e. the process by which the lungs bring O_2 into the body and remove CO_2 wastes, and **internal respiration or tissue respiration,** which is the interchange of these same gases between the circulating blood and the cells of the body tissue. Unlike external respiration that is restricted to the alveoli of the lungs and pulmonary blood, internal respiration takes place throughout the body.

External respiration is made up of **inspiration** – the intake of air into the lungs and **expiration** – the breathing out or the movement of gases from the lungs to the atmosphere. The term **ventilation** is also used to describe this movement of air in and out of the lungs. Ventilation can be hyper or hypo. **Hyperventilation** refers to very deep, rapid respirations while **hypoventilation** refers to very shallow respirations. The rate, depth, and rhythm of ventilatory movements indicate the quality and efficiency of the respiratory process. The nurse can directly assess only the process of external respiration, specifically by assessing ventilation.

3.2 Mechanics and Regulation of Breathing

Regulation of Breathing

Breathing is generally a passive process. It is carried out automatically and effortlessly; you breathe without thinking about it. Though can be controlled momentarily, such willful control are usually too transient and automatic control soon takes over. This automatic control is governed/regulated by (i) respiratory centers in the medulla oblongata and the pons of the brain, and (ii) chemoreceptors located centrally in the medulla and peripherally in the carotid and aortic bodies. These centers are sensitive to amount of CO_2, pH, and low level of O_2 (Hypoxia). Consequently, they respond to changes in the concentrations of O_2, CO_2, and H^+ in the arterial blood. An elevation in the CO_2 pressure of arterial blood causes the respiratory center to increase the rate and depth of breathing. This increased ventilatory effort removes excess PCO_2 during exhalation. Similarly, if the arterial O_2 levels fall, the chemoreceptors signal the respiratory center to increase the rate and depth of ventilation.

According to Webster (1995) rising PCO_2 levels naturally stimulate the initiation of inspiration but falling PCO_2 levels have a limited impact on the control of ventilation. He noted that in patients with chronic lung disease such as bronchitis and emphysema, the hypoxic drive to increase ventilation can become very important stressing that these people may have chronic hypercarbia (a chronic excess of CO_2 in arterial blood), which can suppress the normal stimulus for ventilation. A low level of arterial O_2 then becomes the primary stimulus to breathing in such patients.

Mechanics of Breathing

Normal breathing is accomplished by: (a) the downward and upward movement of the diaphragm to lengthen or shorten the chest cavity, and (b) the elevation and depression of the ribs to increase and decrease the anteroposterior diameter of the chest cavity. During inhalation, the diaphragm contracts (flattens), the ribs move upward and outward, thus enlarging the thorax and permitting the lungs to expand. This allows the inflowing of air into the lungs. In expiration or exhalation, the diaphragm relaxes, the ribs move downward and inward, decreasing the size of the thorax as the lungs are compressed, thus facilitating the movement of air out of the lungs.

3.3 Altered Breathing Patterns and Sounds

For a good appreciation of what altered breathing patterns and sounds are, there is a need learners to be conversant with what is considered as normal respiration in terms of rate, rhythm, depth and sounds. Hence this section examines alterations in respiration against the background of what is considered normal respiration.

(A) Normal Respiration

Normal respiration is quiet, rhythmical (regular), comfortable, being neither too deep nor too shallow and of rate considered normal for that age. Let us quickly look at what deviation from normal can occur across these characteristics.

Respiratory Rate – Respiratory rate is usually described in breathes per minute. It is the number of ventilations that take place in 1 minute. Breathing that is normal in rate and depth is called eupnoea**.** Respiratory rate have however been observed to vary considerably in healthy people. The rate varies with age, tending to drop as a person grows older. It is usually slightly rapid in women than in men. Nonetheless, some normal ranges have been established. These normal ranges are captured in the table below (Table 7 – 1).

Table 7 – 1 Variation in Normal Respiratory Rate by Age

Age	Average Range
Newborns	30 – 40
Early Childhood	25 – 30
Late Childhood	20 – 25
Teens	18 – 22
Adults	16 – 20
Aged	16 – 18

Source: Adapted from Usman, et. al. 2000. Ross and Wilson Foundations of Nursing and First Aid (6^{th} ed.). and Kozier, et. al. 2000. Assessing Health. In Fundamental of Nursing: Concepts Process and Practice.

SELF ASSESSMENT EXERCISE 1

List the factors that could influence respiratory rate.

Factors Influencing Respiratory Rate

Besides age and sex, several other factors affect the rate and character of respiration. They include:

- **Exercise** – Exercises increases metabolism and increased metabolism requires increase consumption of oxygen hence the increase in respiratory rate and depth to meet the body's greater oxygen needs.
- **Body Position** – Straight, erect posture promotes full chest expansion. Stooped or slumped position impairs respiratory movement.
- **Emotion** – Fear, excitement, and anger all increase the rate of respiration as a result of sympathetic stimulation.
- **Stress** – Gets the body ready for 'fight or flight' with accompanying increase in respiration.
- **Disease** – Certain diseases increase the rate of respiration (e.g. pneumonia, heart disease) while others decrease it.
- **Certain Drugs** – Some drugs such as caffeine stimulate respiration. Others such as narcotic analgesic and sedatives depress the respiratory center with associated slowing down of respiratory rate.
- **Acute Pain –** Pain increases rate and depth as a result of sympathetic stimulation.
- **Fever –** Increases metabolic rate and consequently increases respiratory rate.
- **Cold** – Decreased temperature results in decrease respiration.
- **Increased Altitude –** The higher the altitude the lower the oxygen concentration. In a bid to make up for reduced oxygen concentration at high altitude the body therefore increases the rate of breathing.
- **Smoking –** Long-term smoking changes the lungs airways, resulting in an increased rate.

(Donovan, Belsjoe, and Dillon, 1968; Webster, 1995; Kozier, et. al. 2000).

Respiratory Depth

The depth of respiration is assessed by observing the degree of movement in the chest wall. Ventilatory movements are objectively described as *shallow, normal,* or *deep.* During a normal, relaxed breath, a person inhales approximately 500ml of air. This volume is called *tidal volume.* Deep respirations are those in which a large volume of air is inhaled and exhaled, following a full expansion of the lungs with full

exhalation. Shallow respirations involve the exchange of small volume of air and often the minimal use of lung tissue.

The capacity of the lungs to take in air depends on gender and age. Lung capacity is determined by taking as deep a breath as possible and then blowing it entirely into a *spirometer,* a device that measures air volume. The amount of air exhaled after a minimal full inspiration is the *lung's vital* capacity and is about 4800ml 0f air. Men tend to have a larger vital capacity than women of the same age. Infants and young children have smaller vital capacities than adolescents and adults. With advancing age, the lung loses its elasticity, and the capacity for forcible exhalation declines (Webster, 1995).

Body position also affects the amount of air that can be inhaled. Kozier, et. al. submitted that people in supine position experiences two physiological processes that suppress respiration: an increase in the volume of blood inside the thoracic cavity and compression of the chest. Consequently, clients lying on their back have poorer lung aeration, which predisposes them to stasis of fluids and subsequent infection. Certain drugs such as barbiturates that depresses the respiratory center also affect the respiratory depth by depressing both respiratory rate and depth.

Respiratory Rhythm

This refers to the regularity of ventilation. Normal breathing is evenly space i.e. regular and uninterrupted. Hence respiratory rhythm is described as regular or irregular. Generally infants' respiratory rhythms are usually less regular than those of the adults.

Respiratory Quality/Character

This refers to those aspects of breathing that are different from normal. Depending on the level of oxygenation, respiratory alterations may bluish discoloration of the skin (*cyanosis*) and altered level of consciousness. Whereas normal breathing does not require any noticeable effort, some clients only breath with decided effort referred to as *labored breathing.* As breathing becomes labored, a person uses accessory muscles in the chest and neck to breath. The sound of breathing is also significant. Normal breathing is silent but when breathing becomes noisy, it is an indication of some respiratory disorder.

This will be discussed in fuller detail in the next section.

SELF ASSESSMENT EXERCISE 2

What are the requirements for observing a patients respiration, pulse and temperature?

(B) Abnormal Pattern/Dysfunctional Respiration

Rate:

- *Tachypnea* – Persistent rapid respiration marked by quick shallow breaths (greater than 20 breaths per minute).
- *Bradypnea* – Abnormally slow breathing; less than 10 breaths per minute.
- *Apnea* – Cessation of breathing, which may be for a few seconds or prolonged.

Volume:

- *Hyperventilation* – An increase in the amount of air in the lungs characterized by prolonged and deep breaths; may be associated with anxiety.
- *Hypoventilation* – A reduction in the amount of air in the lungs, characterized by shallow respirations

Rhythm:

- *Cheyne-Strokes* – Cyclic breathing pattern characterized by rhythmic waxing and waning of respirations, from very deep to very shallow breathing and temporary apnea. The respiration becomes deeper and deeper until they reach a climax, after which they decline until there is complete cessation of breathing for a few seconds and then the cycle is repeated. Often associated with cardiac failure, increased intracranial pressure, and drug overdose.
- *Biot's* – Cyclic breathing pattern characterized by shallow breathing alternating with periods of apnea. Seen in neurologic problems (meningitis, encephalitis), head trauma brain abscess, heat stroke.

Ease or Effort:

- *Dyspnea* – This is the term used for describing difficult or labored breathing. The difficulty may be transient and may or may not be accompanied by pain. Dyspneic patients usually appear anxious and worried. The nostrils flare (widen) as the patient struggles to fill the lungs with air. Associated with some lung and heart diseases.

- *Orthopnea* – When difficulty becomes so marked that the patient can breath only when in an upright position, it is called Orthopnea. It is associated with advanced heart disease. In many cases, it is helpful to pull a bed table up to the patient, cover it with pillow, and allow the patient to lean forward.

Breath Sounds:

- **Stridor –** A shrill, harsh sound heard during inspiration with laryngeal obstruction.
- **Stertor –** Loud snoring or sonorous respiration, usually due to partial obstruction of the upper airway.
- **Wheeze –** Continuous, high-pitched musical squeak or whistling sound occurring on expiration and sometimes on inspiration when air moves through a narrowed or partially obstructed airway as in asthma.
- **Whoop** – This long drawn-out noisy inspiration occurring after a paroxysm of coughing in whooping cough.
- **Grunting** – Grunting at the end of respiration is sometimes noticed in pneumonia.
- **Sighing** – Sighing or air hunger, is characterized by slow inspiration and rapid expiration. This occurs in shock following hemorrhage.
- **Bubbling** – Gurgling sounds called bronchi are heard as air passes through moist secretions in the respiratory tract.

Chest Movements

- **Intercostal Retraction –** Indrawing between the ribs.
- **Substernal Retraction –** Indrawing beneath the breast bone.
- **Suprasternal Retraction –** Indrawing above the clavicles.
- **Flail Chest –** The ballooning out of chest wall through injured rib spaces; results in paradoxical breathing, during which the chest wall balloons on expiration but is depressed or sucked inward on inspiration.

(Webster, 1995; Roark, 1995; Timby, 1996; Usman, et. al. 2000; Kozier, et. al. 2000)

3.4 Assessing Respiration

Respirations are the easiest of vital signs to assess but are often the most haphazardly done. Resting respirations should be assessed when the patient/client is at rest.

Equipment: – Watch with second hand or indicator.

Table 7 – 2 Procedure for Assessing Respiration

Suggested Action	Rationale
Assessment	
Determine when and how frequently to monitor the patient's respiratory rate.	Demonstrate accountability for making timely and appropriate assessments.
Review the data collected in previously recorded assessments of the respiratory rate and other vital signs.	Aids in identifying trends and analyzing significant patterns.
Read the patient's history for any reference to respiratory, cardiac, or neurologic disorders.	Demonstrate an understanding of factors that may affect the respiratory rate.
Review the list of prescribed drugs for any that may have respiratory or neurologic effects.	Helps in analyzing the results assessments findings.
Planning	
Arrange the plan for care so as to count the patient's respiratory rate as close to scheduled routine as possible.	Ensures consistency and accuracy.
Make sure a watch with a second hand is available.	Ensures accurate counting.
Plan to assess the patient's respiratory rate after a 5-minute period of inactivity.	Reflects the characteristics of respirations at rest rather than under the influence of activity.
Suggested Action	**Rationale**
Implementation	
Introduce self to patient if this has not been done during earlier contact.	Demonstrates responsibility and accountability.
Explain the procedure to the patient.	Reduces apprehension and enhances cooperation.
Raise the height of bed.	Reduces Musculoskeletal strain.
Wash your hands	Reduces spread of microorganisms.
Help patient to a sitting or lying position.	Facilitates the ability to observe breathing.
Note the position of the second hand on the wrist watch.	Identifies the point at which assessment begins.

Choose a time when the patient is unaware of being watched; it may be helpful to count the respiratory rate while appearing to count the pulse.	Prevents conscious control of breathing during the assessment.
Observe the rise and fall of the patient's chest for a full minute, if breathing is unusual. If breathing appears noiseless and effortless, count the ventilations for a fraction of a minute and then multiply to calculate the rate.	Determines the respiratory rate per minute.
Restore the patient to therapeutic position or one that provides comfort, and lower the height of bed.	Demonstrates responsibility for patient care, safety and comfort.
Document respiratory rate, depth, rhythm And character on the appropriate records and allows for future comparison.	Ensures accurate documentation.
Verbally report rapid or slow respiratory rates or any other unusual breathing Care.	Alerts others to monitor the patient closely and make changes in the plan characteristics.

Evaluation Focus
Note the respiratory rate in relation to the baseline data or normal range for age, relationship to other vital signs, respiratory depth, rhythm and character.

Source: Timby, B.K. (ed.) 1996. Vital Signs. Fundamental Skills and Concepts in Patient Care (6^{th} ed.)

3.5 Heamodynamic Regulation

The normal physiological function of the cells requires continuous blood flow and appropriate volume and distribution of blood to cells that need nutrients. This is accomplished through the heart's contraction and ejection of blood into the aorta and distensibility of the arterial system. The combination of the arterial distensibility and resistance reduces the pressure pulsations, allowing continuous blood flow to the tissues. The dynamics of distensibility and resistance maintain a constant blood flow; otherwise, blood would flow to the tissues only during systole with an absence of blood flow during diastole.

The circulatory system consists of the **heart** (the pump), the network of **blood vessels** (arteries, arteriole, capillaries, venules and veins), and the

blood that bring oxygen and nutrients to body cells and carries away waste products. The heart is a four-chambered muscular organ (two upper chambers called atria and two lower chambers called ventricles). When the right and left atrium contract blood is forced into the two lower chambers, the right and left ventricle. As wave of contraction continues, blood, which has filled each ventricle, is forced out into the two main arteries – the aorta, which supplies the body; and the pulmonary artery, which supplies blood to the lungs (**systole**). At the onset of systole the increase in ventricular pressure causes the mitral and tricuspid valves to close. The closing of these valves produces the first heart sound (S_1). Ventricular pressure continues to increase until it exceeds the pressure in the pulmonary artery and the aorta, causing the aortic and pulmonic valves to open and allowing the ventricles to eject blood into these arteries. Ventricular emptying and relaxation cause a decrease in the ventricular pressure and closure of the aortic and pulmonic valves (**diastole)**. Closure of these valves produces the second heart sound (S_2). During diastole the pressure in the ventricles becomes lower than that in the atria, causing the mitral and tricuspid valves to open. This together with atria contraction allows the blood to flow into the ventricles. Ventricular filling causes an increase in pressure that closes the mitral and tricuspid valves (the beginning of systole) and starts another cardiac cycle (Estes, 1998).

The amount of blood pumped out into circulation at each systole is known as the **stroke volume**. As the blood enters the artery, the artery expands. The rhythmic expansion and contraction (recoil) of the elastic arteries during each cardiac cycle creates a pressure wave (a pulse) that is transmitted through the arterial tree with each heartbeat. This wave of distension and recoil of the arterial wall can be felt particularly where a peripheral artery runs over a bone.

When adult is resting, the heart pumps about 5 litres of blood each minute. This volume is called **cardiac output** (CO), which can be expressed mathematically as follows:

CO = Stroke Volume x Heart Rate.

A person's heart rate varies throughout the day. Nevertheless the heart functions to maintain a relatively constant circulatory blood flow (Webster, 1995). This it does through the action of the cardiac center located in the medulla of the brainstem. Upon receipt of sensory impulses from sensory receptors, the cardiac center either speed up or slow down the heart rate through sympathetic and parasympathetic innervation. There are however some factors that causes normal variation in heart/pulse rate in health. These include:

- **Age –** As the age increases, the pulse rate decreases. See Table 7 – 3 for specific variation in pulse rate from birth to old age.

Table 7 – 3 Normal Age Related Variations in Pulse

Age	Normal Range	Average Rate/Minute
Newborn	80 – 180	130
1 – 3yrs	80 – 140	120
6 – 8 yrs	75 – 120	100
Teen years	50 – 90	70
Adult	60 – 100	80
Older Adult	60 – 70	65

Source: Adapted from Kozier, et. al. 2000. Assessing Health. In Fundamental of Nursing: Concepts Process and Practice & Estes, M. E. Z. 1998. Vital Signs and Physical Examination. In S. C. Delaune & P.K. Ladner (eds.) .*Fundamentals of Nursing, Standards and Practice.*

- **Sex –** After puberty, the average female have a slightly higher pulse rate than male.
- **Exercise –** Pulse rate normally increases with activities.
- **Posture/Position –** When a person assumes a sitting position, blood supply usually pools in dependent vessels of the venous system. Pooling results in transient decrease in the venous blood return to the heart and a subsequent reduction in blood pressure and an increase in heart rate.
- **Stress –** In response to stress, sympathetic nervous stimulation increases the overall activity of the heart. Stress increases the rate as well as the force of the heartbeat. Fear and anxiety as well as the perception of pain also stimulate the sympathetic system.
- **Medications –** Some medications decrease the pulse rate while others increase it. For instance digitalis preparations (e.g. digoxin) decrease the pulse rate while epinephrine increases it.
- **Hemorrhage –** Loss of significant amount of blood from the cardiovascular system results in an increase in pulse as the body strives frantically to compensate for the loss.
- **Fever –** The peripheral vasodilation that occurs concomitantly with elevated body temperature and increased metabolism associated with fever results in an increase in pulse rate.

3.6 Assessing Pulse

In assessing pulse, the nurse is not just interested in the rate but the rhythm, volume and tension as well. The rate talks about how many counts per minute. The rhythm addresses the issue of regularity of the pulse i.e. the interval between successive pulse while the volume refers

to the strength or amplitude of force exerted by the ejected blood against the arterial wall with each contraction (It should require moderate pressure to obliterate the vessel). The tension relates to state of the vessel wall when being felt or palpated – the vessel should feel pliant and soft under the nurse's finger; it should not be hard and tortuous.

How to take the Patient's Pulse

There are nine sites where pulse is commonly taken:

- **Radial –** At the wrist, just above the base of the thumb (postero-inferior), where the radial artery run along the radial bone. Readily accessible
- **Temporal –** Just in front of the ear, where the temporal artery passes over the temporal bone of the head. Used when radial pulse is not accessible.
- **Carotid –** On the side of the neck where carotid artery runs between the trachea and sternocleidomastoid muscle. Used for infants and in cases of cardiac arrest.
- **Apical –** Apex beat can be heard by placing the stethoscope over the 5^{th} intercostal space in the mid clavicular line on the left side of the chest in non-cardiac patients. Routinely used for infants and children up to 3 years of age. Also used to clarify discrepancies with radial pulse.
- **Brachial –** locatable at the inner aspect of the biceps muscle of the arm or medially in the antecubital space (elbow crease). Employed in blood pressure measurement. Also used during cardiac arrest for infants.
- **Femoral –** In the groin where femoral artery passes alongside with the inguinal ligament. Used for infants and children. Used to determine circulation to the leg as well.
- **Popliteal –** Where the Popliteal artery passes behind knee. Difficult to find but accessible when the patient flexes his knee slightly. Used to determine circulation to the lower leg.
- **Posterior Tibial –** On the medial surface of the ankle where the posterior tibial artery passes behind the medial malleolus. Used to determine circulation to the foot.
- **Pedal –** Where the dorsalis pedis artery passes over the bone of the foot. Can be palpated by feeling the dorsum (upper surface) of the foot on an imaginary line drawn from the midline of the ankle to the space between the big and second toes. Used to determine circulation to the foot.

Assessing the Radial Pulse

Equipment – Watch with a second hand or indicator.

Intervention

- **Prepare the client –** Inform the client and explain the procedure to him. Select the pulse point and assist the client to comfortable and relaxed position. For clients in supine/dorsal position, the arm can rest alongside the body with palm facing downward or over the abdomen except where contraindicated. For clients who can sit, the forearm can rest across the thigh, with the palm facing downward or inward. With infants, have the parent close by. Having the parent close or holding the child may decrease anxiety and yield more accurate results.

- **Palpate and count pulse –** Place the first two or three fingers lightly and squarely over the medial aspect of the wrist just above the base of the thumb. Using a thumb is contraindicated because thumb has a pulse that the nurse could mistake for client's pulse. Feel the pulsation but before counting the pulse, note the rhythm, volume, and the state of the vessel wall. If the pulse is regular, count for 30seconds and multiply by 2. If it is irregular, count for a full minute. Count for a full minute also when taking a client's pulse for the first time or obtaining baseline data. An irregular rhythm requires a full minute's count for a correct assessment and indicate need to take apical pulse.

- **Document and report pertinent assessment –** Record the pulse rate, rhythm and volume on the appropriate records. Report to the nurse in charge abnormal variations in pulse (Usman, et. al. 2000; Kozier, et. al. 2000).

Abnormal Variations in Pulse

The pulse may vary in one or more of its characteristics.

Rate: An abnormally elevated pulse/heart rate above 100 beats per minute in adults is referred to as **Tachycardia.** This is found in certain heart conditions and in some anaemias. Tachycardia may be continuous or paroxysmal. **Bradycardia** on the other hand is a pulse/heart rate that is less than 60 beats per minute in adults. Could occur in cases of head injury.

Rhythm: Arrthythmia is the name given to irregularities in heart rhythm. A pulse is described as **irregular** when the interval between

successive beat is uneven. **Intermittent** pulse means that a pulsation is being missed and it may occur at regular or irregular intervals. **Extra systoles** are actually extra beats produced by an excessively irritable cardiac muscle with resultant irregularity.

3.7 Blood Pressure and its Determinants

Blood pressure (Bp) is the force exerted by the blood against the walls of the vessels that carry it measured by an instrument called sphygmomanometer. In other words Bp is a product of cardiac output and total peripheral resistance (TPR).

$$Bp = CO \times TPR$$

As earlier stated, the CO is the quantity of blood being pumped out of the heart per minute while TPR represents the total force exerted by the heart and the walls of the vessels against the blood.

Bp is highest during ventricular contraction. This is **systolic pressure**, that is, the pressure of the height of the blood wave. The pressure diminishes as the heart relaxes and is lowest when the heart is relaxed before it begins to contract again; this is **diastolic pressure** that is the pressure when the ventricles are at rest. Bp is measured in millimeters of mercury (mmHg) and recorded as fraction, the systolic pressure written over the diastolic pressure. Diastolic pressure then, is the lower pressure, present at all times within the arteries. The difference between the two readings is called **pulse pressure**.

Bp can either be high or low. The World Health Organization has considered a range of 90/60 – 140/95mmHg as normal. Therefore, when there is a persistent rise in Bp above what is considered as average for an age and sex, a condition known as **Hypertension** is said to have developed. On the other hand, when the Bp falls extremely below normal range for an age, e.g. a systolic reading consistently between 85 and 110mmHg in an adult, **hypotension** is said to have set in.

Determinants of Blood Pressure

Arterial Bp is the result of several factors. These include:

- **The Pumping Action of the Heart** – When the pumping action of the heart is strong, the volume of blood pumped into circulation tends to increase with corresponding increase in Bp and vice versa.

- **Peripheral Vascular Resistance –** The higher the peripheral resistance (TPR), the higher the Bp. Some of the factors create TPR are the size of the blood lumen, the compliance of the arteries and the viscosity of the blood. The smaller the lumen of a vessel, the greater the resistance. Normally, the arteries are in a state of partial constriction, increased vasoconstriction therefore raises the Bp. The degree of distensibility (compliance) of the arterial wall, which is a factor of the elasticity of the arterial wall is yet another factor in TPR.

- **Blood Volume –** The smaller the blood volume, the lower the Bp and the greater the blood volume the higher the Bp.

- **Blood Viscosity –** In viscous (thick) fluid, there is a great deal of friction among the molecules as they slide by each other. This explains why the Bp is higher when the blood is highly viscous as it's usually the case when the hematocrit is more than 60 – 65%.

Mechanism involved in Blood Pressure Regulation

- **Sympathetic Stimulation/Cardiac Accelerator (Adrenalin) –** Increases peripheral resistance and heart rate and consequently increases the Bp.

- **Parasympathetic (Vagal) Stimulation –** Cardiac inhibitor; reduces Bp.
- **Baroreceptor Mechanism –** The baroreceptor are nerve receptors in the wall of most great vessels like the aorta and the carotids that are sensitive to changes in Bp. When the arterial pressure becomes great, these baroreceptors are stimulated excessively, and impulses are transmitted to the medulla of the brain. Here the impulses inhibit the vasomotor center, which in turn decreases the number of impulses transmitted through the sympathetic nervous system to the heart and blood vessels. Lack of these impulses causes diminished pumping activity of the heart and an increased ease of blood flow through the peripheral vessels both of which lowers the arterial pressure back to normal. Conversely, a fall in arterial pressure relaxes the stretch receptors, allowing the vasomotor center to become more active than usual with resultant rise in Bp.

- **Renin-Angiotensin Phenomenon** - Narrowing of the lumen of an artery as a result of arteriosclerosis or renal artery stenosis results in a decrease in the volume of blood to the kidney. The kidney by virtue of its receptors that are very sensitive to changes in blood volume secretes a substance called rennin. Renin while

circulating in the blood acts on a protein component (angiotensinogen) and convert it to angiotensin. Angiotensin causes constriction of blood vessels and also stimulates the release of aldosterone from the adrenal gland. Aldosterone causes salt and water retention. The net result is a rise in Bp.

Factors Influencing Blood Pressure: The various factors influencing Bp are outlined as follows:

- **Age –** Bp increases with age. In old age, as part of the degenerative process, the arterial wall becomes more rigid and less yielding to pressure and no longer retract as flexibly to decreased pressure, hence the high Bp associated with this group.
- **Exercise –** This increases cardiac output with consequent increase in Bp.
- **Stress –** The stimulation of the sympathetic nervous system as observable in stress causes increased the cardiac output with increased vasoconstriction. The aftermath is increased Blood pressure. Pain however can decrease Blood pressure greatly and cause shock by inhibiting the vasomotor center and producing vasodilation.
- **Race** – The Negroid race tend to have higher Bp than the Caucasians.
- **Obesity** – Bp is generally higher in obese people than in individuals with normal weight (due to possible arteriosclerosis).
- **Sex** – After puberty, females usually have lower Bp than males of the same age probably due to hormonal variation.
- **Medications** – Some medication increases the Bp while many others decreases it. To this end the nurse needs to be conversant with the actions and side effects of drugs and consider their possible impact on the health status of their client.
- **Disease Process** – Many conditions that affect cardiac output, blood volume, the arterial network and renal system exact a direct effect on Bp.
- **Diurnal Variations** – Bp is usually lowest early in the morning, when the metabolic rate is lowest, then rises throughout the day and peaks in the late afternoon or early evening. (Kozier, et. al. 2000).

3.8 Assessing Blood Pressure

Since blood pressure can vary considerably, it is expedient for the nurse to know a specific clients baseline Bp.

Preparation

- ***Patient:*** The patient should be resting in a bed, couch or chair, in a quiet location. The patient should not have had a meal/alcohol or caffeine or have smoked or exercised in the previous 30 minutes.
- ***Equipment/Environment:*** Sphygmomanometer with appropriate size cuff (see Points for Practice), Stethoscope, Alcohol-impregnated swabs, Observation chart
- ***Nurse***: The hands should be clean. No special preparation is necessary unless required by the patient's condition.

Procedure

1. Assess the patients knowledge of the procedure and explain as necessary
2. Ensure the patient is resting in a comfortable position. If a comparison between lying and standing blood pressure is required, the lying recording should be done first.
3. When applying the cuff, no clothing should be underneath it if clothing constricts the arm remove the arm from the sleeve (see PPP)
4. Apply the cuff so that the center of the bladder is over the brachial artery 2 - 3cm above the antecubital fossa. This is easier to do if the cuff tubing is disconnected from the sphygmomanometer.
5. The arm should be positioned so that the cuff is level with the hear and may be more comfortable resting on a pillow
6. The sphygmomanometer should be placed on a firm surface, facing you, with the center of the mercury column at eye level. Connect the cuff tubing to the sphygmomanometer.
7. Locate the radial pulse. Squeeze the bulb slowly to inflate the cuff while still feeling the pulse. Observe the mercury column and note the level when the pulse can no longer be felt. Unscrew the valve and quickly release the pressure in the cuff.
8. If using a communal stethoscope clean the earpieces with an alcohol-impregnated swab. Curving the ends of the stethoscope slightly forward, place the earpieces in your ears. Check that the tubes are not twisted
9. Check that the stethoscope is turned to the diaphragm side by tapping it with your finger.
10. Palpate the brachial artery, which is located on the medial aspects of antecubital fossa.
11. Place the diaphragm of the stethoscope over the artery, and hold it in place with your thumb while using your fingers to support the patient's elbow.

12. Position yourself so that the column of mercury in the sphygmomanometer is clearly visible.
13. Ensure that the valve on the bulb is closed firmly but not too tightly, so that it can be loosened with one hand. Inflate the cuff to 20 - 30 mmHg above the level noted in step 7 Open the valve to allow the column of mercury to drop slowly (2mm per second).
14. While observing the level of mercury as it fails, listen for korotkoff (thudding) sounds: Sudden appearance of a sharp click sound which increases in intensity and duration until it reaches a peak, then suddenly becomes muffled and less intense after a further fall of about 5mmHg. The systolic pressure is the level where this is first heard; the diastolic pressure is the level where the sounds disappear.
15. Once the sounds have disappeared, open the valve fully, to completely deflate the cuff, and remove it from the patient's arm

Points for Practice

The sphygmomanometer may be mercury or an aneroid type. These are used in exactly the same way, however, unlike the mercury column, which must be placed in an upright position for accurate recording, the dial on an aneroid sphygmomanometer may be positioned anywhere. The bladder of the cuff must cover at least three quarters of the circumference of the upper arm. If the patient is receiving intravenous therapy, avoid using the arm that has the intravenous cannula or infusion in progress. If the patient is unable to lift his/her arm, tuck the patient's hand under your arm to support the arm while you position the cuff. If recording lying and standing blood pressure, do not remove the cuff between recordings, keep it in the same position. The doctor may have requested that the patient stands for at least five minutes before the standing blood pressure is recorded. Be aware that the patient may feel dizzy on getting out of bed (postural hypotension). Electronic blood pressure recording machines are now often used. The cuff should be positioned in the same way as described in step 4 but no stethoscope is required because the machine provides a digital display of the systolic and diastolic pressures.

4.0 CONCLUSION

The assessment of physiological functioning provides specific data regarding the client's current condition. It also provides a basis for evaluating response to nursing interventions. However, most accurate values could only be obtained when the client is at rest, the environment

controlled for comfort, and the nurses well armed with knowledge and skills for assessing vital signs.

5.0 SUMMARY

The assessment of the other components of vital signs (i.e. respiration, pulse and blood pressure) is as crucial as that of temperature and various sites and methods can be used to obtain them. Respirations are normally quiet, effortless, and automatic and when assessing respiration care must be taken to ascertain the respiratory rate, depth, rhythm, and sound. The normal physiological function of the cells requires continuous blood flow and appropriate volume and distribution of blood to cells that need nutrients. The pulse rate, rhythm, and volume, in addition to blood pressure are good indicators of the functionality of this system. Although the radial pulse is the site commonly used, eight other sites may be used in certain situations. Blood pressure which is a product of cardiac output, peripheral resistance, blood volume and blood viscosity can be measured by auscultation using a sphygmomanometer and a stethoscope. And like temperature, several factors cause changes in one or more of these vital signs. These include: age, sex, exercise, anxiety and stress, metabolism, diurnal variation, hormones, medication, pain and alteration in physiological functions.

ANSWER TO SELF ASSESSMENT EXERCISE 1

Exercises, Body position, Emotion, Stress, Diseases, Certain drugs, and acute pain.

ANSWER TO SELF ASSESSMENT EXERCISE 2

Thermometer, Sphygmomanometer, Stethoscope, Spirit swabs and Observation chart for record.

6.0 TUTOR-MARKED ASSIGNMENT

1. A 65-year-old known hypertensive patient was brought into your clinic with complaint of slurred speech and labored breathing.
2. You have been assigned to check the vital signs. How will you take his pulse and his blood pressure? What things should you pay particular attention to while assessing the pulse? Differentiate between normal and abnormal breathing patterns stating their implications.

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UNIT 2 ASSESSING HEALTH III – HISTORY TAKING/PHYSICAL EXAM

CONTENTS

1.0 INTRODUCTION

Assessing health status is a major component of nursing care. Smith (1982) remarked that if good nursing care entails meeting the needs of the clients, then these needs must first be identified. As such, the skill of observation becomes an invaluable asset. Assessment technique is therefore a skill that nurses must develop right from the very beginning of their training. Speaking in the same vein, Swash and Mason (1986) submitted that one statement that gets near to the truth is that diagnosis should precede treatment whenever possible. They observed that are two steps critical to making a diagnosis: the first is observation by history taking, physical examination, and ancillary investigations; and the second – interpretation of information obtained in terms of a disorder of function and structure, then in terms of pathology. These two steps put together form part of the assessment phase of the Nursing process, which incidentally has become the decision making tool in Nursing practice.

However, as beginners, will be limiting ourselves to the first step, knowing fully well that a thorough understanding of it is vital to elucidating our clients problem(s) without which the resolution of such problem(s) will be elusive. Therefore, this unit focuses on the purpose, components, and techniques related to the health history and physical examination.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- explain the purpose, components, and techniques related to the health history and physical examination
- differentiate between health history and nursing history
- identify information to collect from nursing history before an examination
- describe the appropriate use and techniques of inspection, palpation percussion, and auscultation
- identify some of the equipments needed to perform a physical examination
- conduct physical assessments correctly in the right sequence and in an organized fashion.

3.0 MAIN CONTENT

3.1 Types of Assessment

Generally speaking, three types of assessment are employed in evaluating the health status of patients/clients. They are: **Comprehensive Assessment, Focused Assessment,** and **Ongoing Assessment.** However, it is health care setting and needs of the patient that literally dictates what type of assessment that is needed.

Comprehensive Assessment – As the name suggest, this is a comprehensive assessment that is usually collected upon admission to a health care agency. It includes a complete health history to determine the current needs of the client. This database provides a baseline against which changes in the client health status can be measured and should include assessment of physical and psychosocial aspects of client's health, the client's perception of health, the presence of health risk factors and the client's coping patterns (Moffett, 1998). While it is true that comprehensive assessment is the most desirable in the initial assessment of client's health needs, time constraint or special circumstances may indicate the need for the abbreviated data collection, the focused assessment.

Focused Assessment – As insinuate in the preceding paragraph, this assessment is limited in scope (in comparison with comprehensive assessment) in order to focus on a particular need or health care problem or potential health care risks. It is often used in health care agencies in which short stays are anticipated (e.g. Emergency departments), in specialty areas such as labor and delivery, and in mental health settings

or for the purposes of screening for specific problems or risk factors as obtainable in well child clinic (Moffett, 1998).

Ongoing Assessment – An ongoing assessment is a continuous systematic assessment and reassessment or evaluation of a client's health status with revision of care plan. This type of assessment allows the nurse to broaden the database or to confirm the validity of the data obtained during the initial assessment and to measure the effectiveness of nursing interventions.

3.2 Indications for Health Assessment

The purposes of health assessment include to:

- Collect data about the client through observation, interview and physical examination.
- Assess the patient's current physical condition.
- Establish a database for future comparisons.
- Continuously update database.
- Detect early signs of developing health problems
- Evaluate responses to medical and nursing interventions.
- Make clinical judgments about a client's changing health status and management.

3.3 Data Collection

This is the process of gathering information about a client's health status. It must be both systematic and continuous to prevent omission of significant data and reflect a client's changing health status. A **database** (baseline data) is all information about a client; it includes the nursing health history, physical assessment, the physician's history and physical examination, results of laboratory and diagnostic tests, and materials contributed by other health personnel (Wilkinson, 2000).

Types of Data

There are basically two types of data**: objective data** and **subjective data**. **Objective data** also referred to as **signs** or **overt data** are factual measurable and observable information about the patient and his overall state of health i.e. they can be seen, heard, felt, or smelled, and they can be obtained by observation or physical examination. Example includes vital signs; height; weight; urine colour, volume and odour; skin rashes e. t. c. **Subjective Data** sometimes called **symptoms** or **covert data** are data client's point of view that cannot be empirically validated. Encompasses patient's opinion or feelings, client's sensation, values, beliefs, and perception of personal health status and life situation. For

instance, only the patient can tell you that he/she is afraid or has pain or experiencing itching.

Methods of Data Collection

The basic methods employed in data collection or data gathering are:

- Observation
- Interview, and
- Physical Examination.

SELF ASSESSMENT EXERCISE 1

List the indications for patient's assessment.

3.1.1 Observation

The term observation is defined as a systematic and exhaustive search for any significant physical deviation from the normal. Observation has two aspects: (a) noticing the stimuli and (b) selecting, organizing, and interpreting the data including distinguishing stimuli in a meaningful manner. Observation as an assessment techniques involve the use of all the five senses:

Visual Observation: Sight provides an abundance of visual clues about general appearances, mannerisms, facial expressions, mode of dress, family – friend's interaction, to mention but a few.

Tactile Observation: Touching or palpating any part of the patient can provide information such as hotness/coldness of the body, swelling, edema, muscle strength e.t.c.

Auditory Observation: The sense of hearing. Quite a lot of information can be gathered through mere listening to the patient or using specialized equipment like the stethoscope to listen to breath sounds, bowel sounds, and heart sounds.

Olfactory or Gustatory Observation: The sense of smell identifies odors that can be specific to a patient's condition or state of health. This include body and breath odour which might indicate Gamalin poisoning, alcohol intoxification, poor hygiene, diabetic ketoacidosis e.t.c.

3.4 Interviewing/History Taking

This is a planned communication or a conversation with a purpose, for example, to get or give information, identify problems of mutual concern, evaluate change, teach, provide support, or provide counseling or therapy (Wilkinson, 2000). During assessment, the purpose of interview is to gather information about client's health history. The goal of history taking is to get from the client an accurate account of his complaint and see this against the background of his life as a whole. How well this is achieved is a factor of the nurse's knowledge and skill at eliciting information from the client using appropriate techniques of communication and observation of nonverbal cues. Effective communication is therefore a key factor in the interview process (Cecere & McCash, 1992).

There are two approaches to interviewing: directive and nondirective. The **directive interview** is highly structured and elicits specific information. The nurse establishes the purpose of the interview and controls the interview, at least at the outset, by asking closed-ended questions that call for specific data. During the **nondirective interview,** or rapport-building interview, the nurse allows the client to control the purpose, the subject matter, and pacing. The nurse encourages communication by asking open-ended questions and providing empathetic responses (Wilkinson, 2000).

Guidelines for an Effective Interview/History Taking

- **Be prepared –** The interview is more productive if the nurse has an opportunity to prepare for the interaction. Such preparation includes the review of client's clinical record, conversation with other health care personnel, and literatures about client's health problem (Moffett, 1998, Wilkinson, 2000). This will focus the interview and prevent tiring the client, and save your time.
- **Appropriate Timing –** Schedule interviews with client at a time when the client is physically comfortable and free of pain, and when interruptions by friends, family, and other health professionals are minimal.
- **Create a Pleasant Interviewing Atmosphere –** A quiet, well-lighted, well-ventilated and relaxed setting, relatively devoid of noise and interruptions enhances communication. A relaxed atmosphere eases the patient's anxiety, promotes comfort, and conveys your willingness to listen. Ensure privacy, as some clients will not share personal information if they suspect others can overhear. In all instances, the client should be made to feel comfortable and unhurried.

- **Establish a Good Rapport –** Greet the client by name if possible; sit and chat with the client before the interview. Be sure to explain the purpose of the interview and show concern for the patient's story.
- **Set the Tone and be Focused –** Encourage the client to talk about his chief complaint. This helps you to focus on his most troublesome symptoms. Keep the interview informal while still being professional. Speak clearly and simply, avoiding medical jargons and be sure patient understands you.
- **Choose your Words Carefully –** Ask open-ended questions to encourage the client to provide complete and pertinent information.
- **Take Notes –** Avoid documenting everything during the interview but make sure you jot down important information such as date, times.

3.5 Health History and Nursing History

The primary focus of the data collection interview is the health history and Nursing history. A **health history** is designed to collect data to be used primarily by the physician to diagnose a health problem and it usually collected by the medical team. Often the admitting nurse also collects this same information during the admission interview. However, there is a growing disapproval of the nurse repeating this process, as credibility is lost when the nurse repeats virtually all the questions that others have already asked. A **nursing history** on the other hand has a different focus – the client's response to the health problems, which assist the nurse more accurately in identifying nursing diagnoses (Cecere, & McCash, 1992). While the health history concentrate on symptoms and progression of disease, the nursing history focuses on client's functional patterns, responses to changes in health status and alterations in lifestyle.

Health History – The components of a health history include:

- **Demographic Information –** encompasses demographic variables such as name, date, age, sex, e.t.c.
- **Chief/Presenting Complaint –** try to define what has motivated the client to seek health care and its duration.
- **History of Present Illness (HPI) –** HPI provides detailed data about the chief complaint or reason for entering the health care system.
- **Past Health History –** provides information about the client's prior state of health. Includes questions about childhood and adult illnesses, immunizations, injuries, hospitalizations, surgeries,

therapeutic regimens, allergies, travels, habits, and use of supportive devices.

- **Family Health History (FHH) –** FHH notes illnesses that have environmental, genetic, or familial tendency or that are communicable. A genetic chart or family tree of three generations can be developed to illustrate the family health history.
- **Social and Occupational History –** Enquire about what may be grouped as the client's physical and emotional environment, his surroundings both at home and work, his habits and his own mental attitude to life and to his work.
- **Review of Systems –** This is the final portion of health history. It is systematic collection of specific information about the client's past and present health status related to common problems of body systems. (Swash & Mason, 1986; Cecere, & McCash, 1992).

It is important to mention here as Swash & Mason, (1986) noted, that in taking history, it neither possible nor desirable to tie a patient down to a particular sequence. The client must be allowed to tell his own story. Besides, a good clinician begins the examination of a patient as the latter walks into the room – his appearance, the way he walks, the way he answers questions and so on – and only finishes taking the history when the consultation is over. Occasionally a vital piece of information may come out just when the patient is leaving. Swash & Mason, (1986) remarked that while the list of headings is formidable, it does take some experience to know in a given case which part of the history is particularly worth pursuing. And following the health history, a **general survey** statement is made, which is a statement of the provider's impression of a client, including behavioral observations.

Nursing History – Numerous nursing history/database formats are available in literatures (Carpenito, 1989; Christensen & Kenney, 1990; Cecere, & McCash, 1992). The format in use in most clinical setting is the **11 functional patterns** credited to Majory Gordon. This format (presented below) allows systematic data gathering and facilitates making inferences (nursing diagnosis).

Health-Perception-Health-Management Pattern – Focuses on client's perceived level of health and well-being and on personal practices for maintaining health. It also embraces preventive screening activities such as breast and testicular examination; hypertension and cardiac risk factor screening e.t.c.

Nutritional-Metabolic Pattern – Assesses food and fluid intake, food References/Further Reading and taboos, cultural factors relating to food

and nutrition, e.t.c. Also explores difficulties if any with ingestion, digestion, absorption, transport and metabolism of nutrients.

Elimination Pattern – Assesses bowel and bladder functions such as frequency, amount, relationship of output to intake, and any discomfort or difficulty associated with each function.

Activity-Exercise Pattern – Explores the client's activities of daily living including client's usual pattern of exercise, leisure and recreation.

Sleep-Rest Pattern – This inquires about the client's pattern of sleep, rest and relaxation in a 24hour period, noting any deviation from client's premorbid rest and sleep pattern.

Cognitive-Perceptual Pattern – Assessment of this pattern involves a description of all the senses (vision, hearing, taste, touch, smell and pain) and the cognitive functions (such as communication, memory, and decision making).

Self-Perception-Self-Concept Pattern – This pattern explores the client's self-concept, which is critical to determining the way the client interacts with others. Attitudes about self, perception of personal abilities and body image, and general sense of worth are also addressed under this pattern.

Role-Relationship Pattern – Describes the client's role and relationships including major responsibilities of the individual. It examines person's self-evaluation of the performance of expected behaviors related to these roles.

Sexuality-Reproductive Pattern – This pattern describes satisfaction or dissatisfaction with personal sexuality and describes the reproductive pattern.

Coping-Stress Tolerance Pattern – This pattern explores the client's general coping pattern and the effectiveness of the coping mechanisms. It encompasses analyzing the specific stressors or problems that confront the client, the client's perception of the stressor and the person's response to the stressor.

Value-Belief Pattern – Describes the values, goals, and beliefs (including spiritual) that guide health related choices. (Cecere, & McCash, 1992).

3.6 Physical Examination

Physical examination or physical assessment is a systematic examination of the body structures. There are basically four techniques of conducting a physical examination and the examination may be done using the cephalocaudal (head – to – toe) approach or the body systems approach. The four techniques are:

- **Inspection**: - Inspection is the most frequently used assessment techniques. It involves deliberate, purposeful and systematic observation to identify deviation from normal.
- **Percussion**: - The assessment techniques least used by nurses. It requires considerable skills. Percussion involves striking or tapping a particular part of the body to produce vibratory sounds. The quality of sound aids in determining the location, size and density of underlying structures. If the sound is different from that which is normally expected, it suggests that there may be some pathologic changes in the area being examined.

Types of percussion: There are three types of percussion viz: **Indirect, Direct, and Blunt percussion**.

Indirect Percussion: The most commonly used. Produces clear, crisp sounds when performed correctly. To perform indirect percussion, use the middle finger of your non-dominant hand as the pleximeter by placing it firmly on the part that is to be percussed. The back of its middle phalanx is then struck with the top of the middle finger of the dominant hand (the plexor). The stroke should be delivered from the wrist and finger joints, not from the elbow, and the percussing finger (the plexor) should be held perpendicular to the pleximeter. Tap lightly and quickly, removing the plexor as soon as you have delivered each blow.

Direct Percussion: In direct percussion, the nurse strikes the area to be percussed directly with the pads of two or three or four fingers or with the pad of the middle finger. This method helps in assessing an adult sinus for tenderness.

Blunt Percussion: This is done by striking the ulnar surface of your fist against the body surface. Alternatively, both arms may be used with the palm of one hand placed over the areas to be percussed and then striking it's back with the fist of the other hand. Both techniques aim at eliciting tenderness (not to create a sound) over such organs as the kidneys, gallbladder, or liver (another blunt percussion method used in the neurologic exam involves tapping a rubber – tipped reflex hammer against a tendon to create a reflexive muscle contraction).

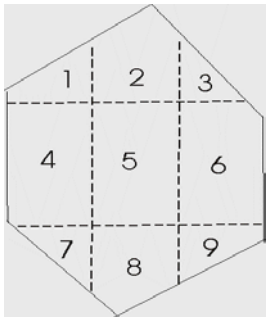
- **Palpation**: This is an assessment technique that uses sense of feeling and pressure to assess structure size, placement, texture, temperature, distension, mobility, pulsation and tenderness. There are two types of palpation:

Light Palpation: Involves the use of pads of fingertips, the dorsum (back) of the hand or the palm. Used because their concentration of nerve endings makes them highly sensitive to tactile discrimination. In light palpation, the body surface is indented gently using the slightest touch possible; too much pressure blunts your sensitivity. The nurse extends the dominant hand's fingers parallel to the skin surface and presses gently while moving the hand in a circle.

Deep Palpation: Deep palpation is done with two hands (bimanually) or with one hand. In deep palpation, the hand is held flat and relaxed and molded to the body surface as in light palpation. The best movement is gentle but with firm pressure with the finger held almost straight but slightly flexed at the metacarpophalangeal joints. Indent the skin or tissue about $1\text{-}1^{1/2}$ inches (2.5 - 4cm). Place your other hand on top of the palpating hand to control and guide your movements. This approach (bimanual palpation) is usually employed while palpating for deep, underlying, hard – to – palpate organs (such as the kidney, liver or spleen) or to fix or stabilize an organ (such as the uterus) while palpating with the other hand. To perform a variation of deep palpation that allows pinpointing an inflamed area, press firmly with one hand, and then lift your hand away quickly. If the patient complains of increased pains as you released the pressure, you have identified **rebound tenderness**. Other variations of deep palpation are: **Light Ballottement** usually performed by applying light rapid pressure from quadrant to quadrant of the patient's abdomen. Hands are kept on the skin surface to detect tissue rebound. **Deep Ballottement** on the other hand, is performed by applying abrupt, deep pressure and releasing it while maintaining contact.

NOTE: Palpation forms the most important of abdominal examinations. Tell the patient to relax as best as he can, to breathe quietly and that you will be as gentle as possible. Enquire for the site of any pain and come to this region last. It is helpful to have a logical sequence to follow and if this is done as a matter of routine, then no important point will be omitted. Presented below are the different regions of the abdomen and the different incision line employed in abdominal surgeries.

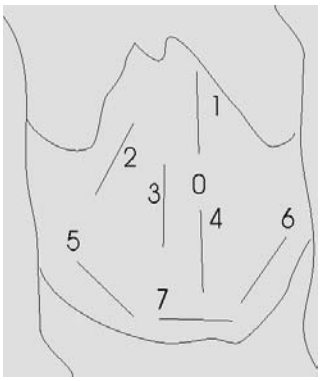
Fig 7 – 1 Regions of the Abdomen



1. Right hypochondrion
2. Epigastruium
3. Left hypochondrion
4. Right lumbar
5. Umbilical
6. Left lumbar
7. Right Iliac
8. Hypogastrum or suprapubic
9. Left Iliac

Source: Adapted from Swash & Mason, 1986. Hutchison's Clinical Methods (18th ed)

Fig 7 – 2 Some Commonly Employed Abdominal Incisions



1. Upper midline
2. Right sub costal (Kocher's)
3. Right paramedian
4. Lower midline
5. Gridiron (appendectomy)
6. Left
7. Suprapubic (pfannenstiel)

Source: Adapted from Swash & Mason, 1986. Hutchison's Clinical Methods (18th ed).

- **Auscultation**: Auscultation is an assessment technique that involves listening to sounds created in body organs to detect variations from normal. Some sounds can be heard with unassisted ear, but most sounds are heard through a stethoscope. You must first become familiar with normal sounds before you

can be able to pick abnormal sounds. The heart, lungs and abdomen are the structures that are most often assessed by this technique. To auscultate effectively therefore requires good hearing acuity, a good stethoscope and knowledge of how to use the stethoscope correctly.

Assessing High-Pitched Sounds – Example of high-pitched sounds are 1st and 2nd heart sounds (S_1 & S_2) and breath sound. This is done with the use of the diaphragm of the stethoscope. Ensure that the diaphragm entire surface is closely / firmly applied to the patient's skin.

Assessing Low-Pitched Sounds – The heart murmurs, 3rd and 4th heart sounds (S_3 and S_4) are all low-pitched sounds. To pick such sounds lightly place the bell of the stethoscope on the appropriate areas. Do not exert pressure. If you do, the patient's chest will act as diaphragm and you will miss low-pitched sounds.

Like all the other assessment techniques, it requires conscious effort and regular practice to become proficient in its use.

SELF ASSESSMENT EXERCISE 2

What is the use of the five (5) special senses in observation/physical examination?

4.0 CONCLUSION

In spite of proliferation of ancillary aids, history taking and physical examination remain essential skills for nurses. The unit though might not have included the interpretation of findings; it has presented a comprehensive package on assessment techniques, especially as relating to knowledge that are vital to skill acquisition.

5.0 SUMMARY

Health assessment is a vital part of nursing care and it is conducted in a systematic manner through history taking and physical examination. Effective nursing history requires good communication and interpersonal skills while skills in inspection, palpation, percussion, and auscultation are needed for complete physical examination. Furthermore, knowledge of the normal structure and function of body parts and systems is an essential perquisite to conducting physical assessment.

ANSWER TO SELF-ASSESSMENT EXERCISE 1

i. For evaluating the patient's current physical condition
ii. For detecting early signs of developing health problems
iii. To establish a data base for future comparisons.
iv. To evaluate responses to medical and nursing interventions.

ANSWER TO SELF-ASSESSMENT EXERCISE 2

Eye (Sight) for visual clues e.g. patient's appearance, mannerisms, mode of dressing.
Touch (Tactile) for palpating any part of the patient to provide information such as coldness, swelling etc.
Auditory (Ear) - use of hearing aids to collect information (stethoscope).
Olfactory (Nose) an offensive smell when perceived around a patient can be suggestive of an underlying problem.

6.0 TUTOR-MARKED ASSIGNMENT

You are asked to make an initial assessment on a woman entering the nursing home. Describe the methods/techniques you will use in making the assessment and identify types of data you will collect.

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UNIT 3 DIAGNOSTIC MEASURES IN PATIENTS CARE

CONTENTS

1.0 INTRODUCTION

A mastery of assessment technique no doubt will go a long way in assisting a clinician in elucidating clients' problems. However, experience has shown that occasionally the findings generated from physical assessment no matter how comprehensive may be insufficient for making a definite diagnosis. This is not surprising as many diseases present with similar clinical features; hence without the benefit of hindsight it may be difficult if not impossible to make an accurate diagnosis. Diagnostic investigations provide this benefit of hindsight. Diagnostic investigations could therefore be likened to the third leg to making an appropriate diagnosis. Consequently, it is expedient for nurses to become conversant with simple diagnostic techniques that are employed in the management of clients/patients conditions. Unlike the preceding unit, students are provided information on how these investigations are carried out and possible interpretation of results.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- describe common invasive and noninvasive diagnostic procedures
- explain to patient what is involved to allay anxieties
- discuss the relevant client teaching guidelines for care of client before, during and after diagnostic testing

- identify specific physical preparations (such as bowel preparation, fluid deprivation e.t.c.) needed for certain diagnostic procedures
- describe accurately sample collection techniques and means of ensuring delivery to right places
- determine what routine observations are required to spot dangers associated with certain investigations that carry risks (e.g. renal biopsy) and be equipped with what measure to take to avert such risks.

3.0 MAIN CONTENT

3.1 Preparing a Client for Diagnostic Investigations

The nurse plays a key role in scheduling and preparing the client for diagnostic investigations. When tests are not scheduled correctly, the clients are not only inconvenienced, but also deprived of timely interventions, thus further subjecting the client to untold hardship and further risk. The institution is also at risk of losing money (Delaune & Ladner, 1998).

General Nursing Responsibilities

- Explain to clients why the test needs to be performed, what is involved, an estimation of how long the test will take, outcome and adverse effects of the test, and assess effectiveness of teaching. An investigation that involves the cooperation of patients requires the nurse to give definite instructions to clients on what they are expected to do. This helps to allay clients' anxiety, enhances their cooperation, encourages relaxation of muscles to facilitate instrumentation, promotes reliability of test and efficient utilization of time, and above all, increases cost effectiveness.
- Ensure proper identification of clients. This promotes client's safety.
- Review client's medical record for allergies and previous adverse reactions to nip in the bud any anaphylactic reaction and its associated complications. Notify other physician accordingly.
- Assess the presence, location, and characteristics of physical and communicative limitations or preexisting conditions.
- Assess vital signs of clients scheduled for invasive investigations to establish baseline data. Establish intravenous access if necessary for procedure.
- Adequate physical preparation such as bowel preparation, fluid deprivation e.t.c. Clarify with practitioner if regularly scheduled

medications are to be administered. The nil per oral (NPO) status is determined by the type of investigation. Monitor level of hydration and weakness for clients who are NPO, especially geriatric and pediatric population. Administer cathartics or laxatives as denoted by the test's protocol.

- Evaluates client's knowledge of what to expect, client's anxiety and client's level of safety and comfort.

3.2 Common Laboratory Tests

Common laboratory studies are usually simple measurements to determine how much or how many **analytes,** (a substance dissolved in a solution, also called a solute) are present in a specimen. Laboratory tests are ordered by the practitioners to:

- Detect and qualify the risk of future disease
- Establish and exclude diagnoses
- Assess the severity of the disease process and determine the prognosis
- Guide the selection of interventions
- Monitor the progress of the disorder
- Monitor the effectiveness of the treatment

The laboratory results are interpreted and compared to the clinical observations.

Hematocrit

Hematocrit measures the percentage of packed red blood cells (RBC) in a whole blood sample. The hematocrit value depends mainly on the number of RBC but is also influenced by the size of the average RBC. Therefore, conditions that result in elevated concentrations of blood glucose and sodium (which cause swelling of RBC) may produce elevated hematocrit.

Procedure-Related Nursing Care: Explain the purpose to the patient and tell him it requires a blood sample drawn from his finger. Then perform a fingerstick on an adult, using a heparinized capillary tube with red band on the anticoagulant end. Fill the capillary tube from the red-banded end to about two-thirds' capacity, and seal this end with clay.

Interpretation of Result: Hematocrit values vary with age and sex, the type of sample, and the laboratory performing the test. Reference values range from 40% – 54% for men and from 37% – 47% for women. High hematocrit suggests polycythermia or hemoconcentration caused by blood loss; low hematocrit may indicate anemia or hemodilution.

Red Blood Cell Count or Erythrocyte Count
This is part of full blood count. This test determines the number of RBCs in a cubic millimeter (microliter) of whole blood. Can be used to calculate two RBC indices, mean corpuscular volume and mean corpuscular hemoglobin. These, in turn, reveal RBC size and hemoglobin concentration and weight.

Procedure-Related Nursing Care: Explain the purpose of the test to the patient and tell him you will need a blood sample. Then draw a venous blood sample, using a 7ml lavender-top tube. Fill the collection tube completely, and invert it gently several times to mix the sample and the anticoagulant. Handle the sample gently to prevent hemolysis.

Interpretation of Result: RBC values vary with age and sex, the type of sample, and altitude. In men, normal RBC counts range from 4.5 – 6.2 million/mm^3 (4.5 – 6.2 x 10^{12}/L) of venous blood; in women, from 4.2 – 5.4 million/mm^3 (4.2 – 5.4 x 10^{12}/L) of venous blood. People living at high altitude usually have higher values. An elevated RBC may indicate primary or secondary polycythemia or dehydration. A depressed count may signify anemia, fluid overload, or recent hemorrhage.

White Blood Cell (WBC) Count

Like the RBC Count, this is also part of full blood count. WBC count reports the number of WBC found in a cubic millimeter (microliter) of whole blood. On any given day, the WBC count can vary by as much as 2,000. Such variations may result from strenuous exercise, stress, or digestion. The WBC count can rise and fall significantly in certain diseases, but the count is diagnostically useful only when interpreted in the light of WBC differential and patient's current clinical status. It is particularly useful for determining the presence of infection and for monitoring patient's response to chemotherapy.

Procedure-Related Nursing Care: Explain the purpose of the test to the patient. Tell him to avoid strenuous exercise for 24 hours before the test. If he is receiving treatment for an infection, advise him that this test may be repeated to monitor his progress. Perform venipuncture, collecting the sample in a 7ml lavender top tube. Handle the sample gently to prevent hemolysis. After the procedure tell the patient he may resume normal activities.

Interpretation of Result: The WBC normally ranges from 4,00 – 10,9000/mm^3. An elevated WBC count (leukocytosis) usually signifies infection. A high count may also be secondary to leukemia or tissue necrosis emanating from burns, myocardial infarction or gangrene. On the other hand, a low count (leukopenia) indicates bone marrow

depression which may be secondary to viral infections or toxic reactions following ingestion of mercury or other heavy metals. It could also be complication of treatment with antineoplastics, or exposure to benzene or arsenicals. Leukopenia also characteristically accompanies influenza, typhoid fever, measles, infectious hepatitis, mononucleosis, and rubella.

Creatinine Clearance

This test determines how efficiently the kidneys clear creatinine from the blood. The clearance rate is expressed in terms of the value of blood (in milliliters) that the kidneys can clear of creatinine in 1 minute. The test requires a blood sample and a timed urine specimen. Creatinine, the chief metabolite of creatinine, is produced and excreted in constant amounts that are proportional to total muscle mass. Normal physical activities, diet, and urine volume have little effect on this production, although strenuous exercise and a high-protein diet can affect it.

Purpose

- To assess renal function (primarily glomerular filtration)
- To monitor the progression of renal insufficiency.

Procedure-Related Nursing Care: Explain the purpose of the test to the patient. Tell him that you will need a timed urine specimen and at least one blood sample. Describe the urine collection procedure. Also inform client on need to avoid eating an excessive amount of meat before the procedure and to avoid strenuous exercise during the urine collection period. Collect a timed urine specimen for a 2, 6, 12, or 24 hour period. Perform a veinpunctcre, and collect the blood sample in the appropriate specimen bottle. Collect the urine specimen in a bottle containing a preservative to prevent creatinine degeneration. Refrigerate it or keep it on ice during the collection period. At the end of the period send the specimen to the laboratory. Then inform patient he may resume normal diet and activities.

Interpretation of Result: For men at age 20, the creatinine clearance rate should be 90ml/minute/1.73m square of body surface. For women at age 20, the creatinine clearance rate should be 84ml/minute/1.73m square of body surface. The clearance rate declines by 6ml/minute for each decade of life. A low creatinine clearance rate may result from reduced renal blood flow (from shock or renal artery obstruction), acute tubular necrosis, acute or chronic glomerulonephritis, advanced bilateral renal lesions (as occur in polycystic kidney disease, renal tuberculosis, or cancer), or nephrosclerosis, congestive heart failure and severe dehydration may also cause the creatinine clearance rate to drop. ** An

elevated creatinine clearance rate usually has little diagnostic significance.

Erythrocyte Sedimentation Rate

A sensitive but nonspecific test, the erythrocyte sedimentation rate (ESR) measures the time needed for erythrocytes (red blood cells) in a whole blood sample to settle to the bottom of a vertical tube. It commonly provides the earliest indication of disease when other chemical or physical signs are still normal. The rate typically rises significantly in widespread inflammatory disorders caused by infection or autoimmune mechanisms. Localized inflammation and cancer may prolong the ESR elevation.

Purpose

- To aid in diagnosing occult disease such as tuberculosis and connective tissue disease
- To monitor inflammatory and malignant disease.

Procedure-Related Nursing Care: Explain the purpose of the test to the patient, and inform him on the need for his blood sample. Then perform a venipuncture, collecting sample in appropriate bottle. Examine the sample for clots and clumps; then send it to the laboratory immediately.

Interpretation of Result: The ESR normally ranges from 0 to 20mm/hour; it increases with age. The ESR rises in most aneamias, pregnancy, acute or chronic inflammation, tuberculosis, paraproteinemias (especially multiple myeloma and waldenstrom's macroglobulinemia), rheumatoid arthritis, and some type of cancer. Polycythemia, sickle cell anemia, hyperviscosity, and low plasma protein levels tends to depress the ESR.

Glucose, Fasting Plasma

Also known as the fasting sugar test, the fasting plasma glucose tests measures the patient's plasma glucose level after an 8 to 12 hours fast. When a patient fasts, his plasma glucose level decreases stimulating the release of the hormone glucagon. This hormone raises plasma glucose level by accerelating glycogenolysis, stimulating gluconeogenesis, and inhibiting glycogen synthesis. Normally the secretion of insulin stops the rise in glucose level. In patients with diabetes however, the absence or deficiency of insulin allows glucose level to remain persistently elevated.

Purpose

- To screen for diabetes mellitus and other glucose metabolism disorders.
- To monitor drug or dietary therapy in patients with diabetes mellitus.
- To help determine the insulin requirements of patients who have uncontrolled diabetes mellitus and those who require parental or enteral nutritional support.
- To help evaluate patients with known or suspected hypoglycemia

Procedure-Related Nursing Care: Explain the purpose of the test to the patient. Tell him that it requires a blood sample and that he must fast (taking only water) for 8 to 12 hours before the test. If the patient is known to have diabetes, you should draw his blood before insulin or an oral antidiabetic drug. Tell him to watch for symptoms of hypoglycemia, such as weakness, restlessness, nervousness, hunger and sweating. Stress that he could report such symptoms immediately. Prepare the laboratory slip for the blood sample, noting the time of the patient' last pretest meal and pretest medication. Also record the time the sample was collected. Perform a venipunctcre collecting the sample in appropriate sample bottle. If the sample cannot be sent to the laboratory immediately, refrigerate it and transport it as soon as possible. Give the patient a balanced meal or a snack after the procedure. Assure him that he can now take medications withheld before the procedure.

SELF ASSESSMENT EXERCISE 1

List out the purpose of glucose fasting plasma.

Interpretation of Result: The normal range for fasting plasma glucose level varies according to the length of the fast. Generally, after an 8 to 12 hours fast, normal values are between 70 and 115mg/dl. Fasting plasma glucose levels greater than 115mg/dl but less than 140mg/dl may suggest impaired glucose tolerance. A 2-hour glucose tolerance test that yields a plasma glucose level between 140 and 200mg/dl, and an intervening oral glucose test that yield a plasma glucose level greater than or equal to 200mg/dl confirms the diagnosis. Levels greater than or equal to 140mg/dl (obtained on two or more occasions) may indicate diabetes mellitus if other causes of patient's hyperglycemia have been ruled out. Such a patient will also have a random plasma glucose level greater than or equal to 200mg/dl along with the classic signs and symptoms of diabetes mellitus, such as polydipsia, polyuria, ketonuria, polyphagia and rapid weight loss. Elevated levels can also result from pancreatitis, hyperthyroidism, adenoma and pheochromocytoma.

Hyperglycemia can also stem from chronic hepatic disease, brain trauma, chronic

3.3 Lumbar Puncture (Cerebrospinal Fluid Analysis)

The cerebrospinal fluid (CSF), a clear substance circulating in the subarachnoid space, has several vital functions. It protects the brain and spinal cord from injury and transports products of neurosecretion, cellular biosynthesis, and cellular metabolism through the central nervous system (CNS). Most commonly, a doctor obtains three CSF samples by lumbar puncture between the third and fourth lumbar vertebrae. If a patient has an infection at this site, lumbar puncture is contraindicated, and the doctor may instead perform a cisternal puncture. If a patient has increased intracranial pressure, the doctor must remove the CSF with extreme caution because the removal of fluid causes a rapid reduction in pressure which could trigger brain stem herniation. The doctor may instead perform a ventricular puncture on this patient. CSF samples may also be obtained during other neurologic tests – myelography or pneumoencephalography for instance.

Purpose

- To measure CSF pressure and to detect possible obstruction of CSF circulation.
- To aid in diagnosing viral or bacterial meningitis, and subarachnoid or intracranial hemorrhage, tumors, and abscesses.
- To aid in diagnosing neurosyphilis and chronic CNS infections.

Procedure-Related Nursing Care

Before the Procedure: Explain the purpose of the test to the patient and describe the procedure. Make sure the patient has signed a consent form. Tell him to remain still and breathe normally during the procedure because movement and hyperventilation can alter pressure readings and cause injury. Following these instructions will also reduce his risk of developing a headache – the most common adverse effect of a lumbar puncture. Just before the procedure, obtain a lumbar puncture tray. Place the labeled tubes at the bedside, making sure the labels are numbered sequentially, and include the patients name, the date, and his room number as well as any laboratory instructions.

***During the Procedure*:** If you're assisting with the procedure, position the patient as directed – usually, on his side at the edge of the bed with his knees drawn up as far as possible (lateral decubitus position). This position allows full flexion of the spine and easy access to the lumbar subarachnoid space. Place a small pillow under the patient's head and

bend his head forward so that his chin touches his chest. Help him maintain this position during the procedure. Stand in front of him, and place one hand around his neck and the other around his knees. If the doctor wants the patient in sitting position, have him sit on the edge of the bed and lower his chest and head toward his knees. Help the patient maintain this position throughout the procedure. Monitor the patient for signs of adverse reactions, such as elevated pulse rate, pallor, or clammy skin. Make sure the samples are placed in the appropriately labeled tubes. Record the time of collection on the test request form; then send the form and the labeled samples to the laboratory immediately.

***After the Procedure*:** After a lumbar puncture, the patient usually lies flat for 8 hours. Some doctors, however allow a 30-degree elevation of the head of the bed. Encourage the patient to drink plenty of fluids and remind him that raising his head may cause a headache. If he develops a headache administer an analgesic as ordered. Check the puncture site for redness, swelling, drainage, CSF leakage and hematoma every hour for the first 4 hours, then every 4 hours for the next 20 hours. Monitor the patient level of consciousness, pupillary reaction, and vital signs. Also observe him for signs and symptoms of complications of the lumbar puncture such as meningitis, cerebellar tonsillar herniation, and medullary compression.

Interpretation of Result: Normal CSF pressure ranges from 50 – 180 mm H_2O. The CSF should appear clear and colorless. Normal protein content ranges between 15 and 45 mg/dl; normal gamma globulin level, between 3% and 12% of total protein. Glucose levels range between 45 and 85 mg/dl, which is two–thirds of the blood glucose level. CSF should contain 0 – 5 white blood cells per microliter and no red blood cells All serologic tests should be nonreactive. The chloride level should be 118 to 130 Eq/liter and the Gram-stain should reveal no organism. CSF abnormal results are summarized below:

Element	Abnormal Result	Possible Causes
CSF Pressure	- Increase	- Increased Intracranial Pressure
	- Decrease	- Spinal subarachinoid obstruction above puncture site.
Appearance	- Cloudy	- Infection
	- Xanthochromic	- Elevated protein level or RBC breakdown.
	- Bloody	- Subarachinoid, intracerebral, or intraventricular haemorrhage; spinal cord obstruction; traumatic puncture
	- Brown	- Meningeal melanoma
	- Orange	- Systemic carotenemia
Protein	- Marked increase	- Tumor, trauma, haemorrhage, Diabetes mellitus, polyneuritis, blood in CSF.
	- Marked decrease	- Rapid CSF production
Gamma globulin	- Increase	- Demyelinating disease (such as Multiple sclerosis),neurosyphilis, Guillain-Barre′ syndrome
Glucose	- Increase	- Systemic hyperglycemia
	-Decrease	- Systemic hypoglycemia, bacterial or fungal infection, meningitis, mumps, postsubarachinoid hemorrhage.
Cell count	- Increase in WBC count	- Meningitis, acute infection, onset of chronic illness, tumor, abscess infarction, demyelinating disease
	-RBC present	- Hemorrhage or traumatic puncture

Source: Cynthia, Breuninger, Ginnona,, & Mintzer, 1994. *Nurse's Pocket Companion.*

3.4 Sputum Studies

Purpose – Examination of sputum to identify the pathogenic organism and the presence of malignant cells.

Nursing Responsibilities – (a) Obtain a morning specimen. (b) Instruct the patient to clear nose and throat, rinse mouth, and take a few deep breaths; then have him/her cough up specimen from lung and tracheobronchial tree. (c) Send specimen to the laboratory immediately, or refrigerate to prevent overgrowth of organism. (d) Obtain specimen for culture before initiating anti-invectives.

3.5 Urinalysis

Simple urinalysis is usually performed at the side wards. Investigations involving blood, microscopy, culture and sensitivity however need a laboratory environment for meaningful result. Hence urinalysis can be classified as both laboratory and side ward investigation.

Purpose – To detect blood, casts, and other abnormalities of urine; renal or urinary tract disease; & metabolic or systemic disease.

Description – Obtain a urine specimen of at least 10 ml. A fresh morning specimen is usually preferred. Observe the urine for colour, clarity, volume (quantity), PH, specific gravity, deposits odour (Physical Examination).

Quick Dipstick Tests

The older chemical tests for urine have largely been replaced by simple dipsticks where the presence of glucose, blood, or protein can be readily detected. They are accurate and sensitive. Examples include:

(i) **Litmus paper** for PH (Acid urine turns blue litmus paper to red while alkaline urine turns red litmus paper to blue.
(ii) **Clinistix strip** for sugar.
(iii) **Albustix strip** for protein.
(iv) **Multistix strip** for a wide range of substances.
(v) **Ketostix** for acetone/ketone bodies
(vi) **Haemastix.**

Procedure:

- Completely immerse all reagent areas of the strip in fresh, well-mixed, uncentrifuged urine and remove immediately.
- Tap edge of strip against the side of urine container to remove excess urine. Hold strip in a horizontal position to prevent possible soiling of hands with urine or mixing chemical from adjacent reagent areas, making sure that the test areas face upwards.
- Compare test areas closely with corresponding colour charts on the bottle label at the times specified. Hold strip close to colour blocks and watch carefully.

Test for Sugar

Cold Test

Clinictest Reagent Tablet – This is a quantitative test for sugar.

Equipment – Clinictest tablet, test tube, and dropper.

Procedure: (a) Place 5 drops of urine into a test tube with the aid of the special dropper provided. Rinse the dropper and add 10 drops pf water to the urine. Drop in one clinictest tablet. Effervescence will occur. Watch the test carefully until effervescence stops and for 15secs longer. Then shake the tube gently and compare the colour with the colour range on the chart scale.

Hot Test

(i) Benedict's Qualitative Test

Equipment: Bursen burner, test tube, benedict solution.

Procedure: Drop 5ml of Benedict's reagent into a test tube and add 8 – 10 drops of urine. Boil this mixture vigorously for 2 minutes. If sugar is present, green, yellow, or brick-red coloration will occur. The changes from green to back-red indicates out of sugar

(ii) Fehling Test

Equipment: Bursen burner, test tube, fehling solution A & B.

Procedure: To equal quality of fehling solution A & B, add 8 – 10 drops of urine and boil for 2 – 3 minutes. Any colour change from blue to brick-red is indicative of presence of sugar.

Test for Protein

Cold Test

(i) Salicylsulphonic Acid Test

Equipment: salicylsulphonic acid, test tube.

Procedure: Add 5 drops of 25% salicylsulphonic acid to about 5ml of urine in a test tube. Shake the tube and look for cloudiness in the urine. The appearance of opacity indicates the presence of protein and the

degree of cloudiness gives some idea of the relative protein concentration.

(ii) Esbach Quantitative Test

Equipment: Esbach Urinometer, Esbach's reagent.

Procedure: Esbach Urinometer is used for this test. All urine passed by the subject over a period, say 6 hours, is collected in a chem. Stoppered bottle and mixed. Measure its specific gravity. If this exceeds 1.010, dilute a portion with an equal volume of water. If the urine is alkaline, acidify it with a few drops of 10% acetic acid. Add urine to an Esbach tube to the level marked U. Add Esbach's reagent up to the level marked R. Cork the tube and invert it gently several times to mix the contents. Stand the tube upright and leave it in a constant temperature for 24 hours. Then read the level of the precipitate of protein on the tube's scale, with the eye on a level with the top of the sediment. This gives the protein concentrate of the urine in parts per 1000 (g/l).

Boiling Test

Heat plus Acetic Acid

Equipment: Bursen burner, test tube, dropper, acetic acid.

Procedure: Check that urine is mildly acidic. If it is not, add 10% acetic acid solution until it is. Failure to check initial PH and adjust if necessary can invalidate this test. If urine is cloudy, filter some for this procedure. Fill a boiling tube about three-quarter (¾) full with urine and heat the top inch of the liquid gently over a bursen flame, turning the tube while heating to prevent it from cracking. Let it boil for a few moments. Compare the top boiled part of the urine with the lower part to see if any cloudiness has appeared. If cloudy, add a drop of acetic acid. If cloudiness or flocculation disappears, it has been due to the presence of phosphate and is of no significance. But if it remains or persists, it indicates the presence of albumin.

Test for Acetone or Ketone Bodies

(i) Acetest Reagent Tablets

Equipment: Acetest tablets (Acetest tablets contain sodium intropusside, glycine and buffers), Clean white paper.

Procedure: Place an Acetest tablets on clean, dry, white paper. Put 1 drop of urine on the tablet, leave for 30 seconds, and then compare any

colour change with the colour chart. A positive result varies from lavender to deep purple, and may be recorded as a trace to strongly positive.

(ii) Rothera's Test

Equipment: Ammonium sulphate, freshly prepared 2% sodium nitroprusside, strong ammonia solution.

Procedure: Saturate a portion of urine with ammonium sulphate by shaking about 5ml of urine in a test tube with about the same volume of crystals of this salt. Add 10 drops of freshly prepared 2% solution of sodium nitroprusside. Add 10 drops of strong ammonia solution. Allow to stand for 15 minutes. The development of a purple colour indicates Ketone. This test is considered to be too sensitive, as it often gives a positive result on a well subject who has not eaten for several hours

Test for Blood

Occultest – This is a test that determines the presence of blood but not necessarily the amount of blood present.

Equipment: Occultest tablet, filter paper, water.

Procedure: Place 1 drop of urine on a filter paper square and put one occultest tablet in the center of the moist area. Add 2 drops of water to the tablet and allow it to stand for 2 minutes. If after 2 minutes a diffuse blue colour appears on the filter paper around the tablet, blood is present. The amount of blood is proportional to the intensity of the colour and the speed with which it develops. If no blue colour appears, the test is negative.

Test for Bile Pigments

(i) Ictotest – A special test mat is required. 5 drops of urine are placed on this special mat and one Ictotest reagent tablet is put in the center of the moistened area. Flow 2 drops of water over the tablet. If bilirubin is present, a bluish-purple colour appears around the tablet in about 30 seconds. The amount of bilirubin present is determined by the speed of intensity of the reaction. If there is no colour change or only a pinkish colour, then there is no bilirubin.

(ii) Iodine test – About an inch of urine is poured into each of the two test tubes. Several drops of tincture of iodine are added drop by drop to one of them. Shake the test tube with the iodine and urine, and

compare it with the control test tube. If a green colour develops, it is positive for bile pigments.

Fractional Urine

Purpose: To determine site and degree of bleeding after prostate surgery.

Description: Patient voids into one urine container and then without stopping the stream, continues to void into another container. The amount of blood in each container gives an indication of the degree and site of bleeding.

Nursing Responsibility: Provide 2 or 3 urine containers and instruct patient to switch containers midway through the voiding without stopping the stream.

Urine Culture and Sensitivity

Purpose: For diagnosis of urinary tract infection (UTI) and identification of causative agent or organism.

Description: A midstream clean catch or sterile catheterized specimen is obtained, and the urine is placed in a culture medium for growth of bacterial colonies. After incubation, the colonies are counted. If more than 100,000 organisms per milliliter are counted, there is a UTI. The organisms are then identified as to type and a sensitivity test is run on it. Sensitivity tests involve exposing the bacteria to various anti-infectives to see which most effectively kills the organism.

Nursing Responsibilities: Instruct the patient in method for collection of a 'clean catch' specimen. Instructions come with the specimen container. Allow time for questions after patient is familiar with directives. Send specimen to laboratory immediately to prevent chance in PH which can affect bacterial growth.

Urine Osmolality

Purpose: To determine urine concentrating ability of the kidney.

Description: The patient is either placed on fluid restrictions or given a specific amount of fluid to drink before the test.

Nursing Responsibilities: Give high protein diet for 3 days prior to the urine collection. Restrict fluids for 8 – 12 hours before obtaining

specimen. Collect a random urine specimen preferably in the morning, label it (including the time), and send to laboratory.

24 Hours Urine Collection

Purpose: To determine how well kidneys can excrete creatinine (creatinine clearance) i.e. glomerular filtration rate (GRF).

Description: A 24 hours urine specimen is obtained and a blood specimen is also taken. Elevated serum creatinine with increased urine creatinine indicates decreased kidney function.

Nursing Responsibilities: Place a sign on patient's door and over the toilet stating 24 hours urine collection in progress, so that everyone can save the urine properly. Decide in conjunction with the laboratory technologist on a suitable time. Have patient void and discard the urine. Note the time and put successive voiding into the collection container. At the time the test is to end, ask the patient to void and add this to the collection bottle. Label the specimen adequately and send to the laboratory with the accompanying blood specimen/sample (5ml).

3.6 Radiologic Studies

Radiography (the study of x-rays or gamma ray exposed film through the action of ionizing radiation) is used by practitioner to study internal organ structure.

Chest X-Ray

The most common radiologic study is the noninvasive, noncontrasted chest x-ray. The best results are obtained when the films are taken in the radiology department; however a portable chest x-ray can be performed at the bedside. Radiologic projections of chest x-ray films are taken from various views. Multiple views of the chest are necessary for the practitioner to assess the entire lung field.

Indications: Chest films can indicate the following alterations and diseases:

- Lesions (tumors, cysts, masses) in the lung tissue, chest wall or bony thorax or heart.
- Inflammation of lung tissue (pneumonia, atelectasis, abscesses, tuberculosis); pleura (pleuritis); and pericardium (pericarditis).
- Fluid accumulation in the lung tissue (pulmonary edema, hemothorax); pleura (pleural effusion)
- Bone deformities and fractures of the rib and sternum.

- Air accumulation in the lungs (chronic obstructive pulmonary disease, emphysema); and pleura (pneumothorax).
- Diaphragmatic hernia.

Nurses Responsibilities: To prepare a client for a chest x-ray, remove metal objects (jewelry) and all clothing from waist up and replace with a gown. Metal will appear on the x-ray film thereby obscuring visualization of parts of the chest. Pregnant women are draped with a metal apron to protect the fetus.

Ultrasound

This is a non-invasive radiological investigation that employs high frequency sound waves and oscilloscope screen to visualize deep body structures. This study should be scheduled before any studies using a contrast medium or air to ensure accuracy.

Purpose: To evaluate size, shape, and location of internal some structures/organs such as: the brain, vascular structure, spleen, liver, gallbladder, pancreas, uterus, and e.t.c. It is also done during pregnancy to determine the gestational age, the expected day of delivery, the sex, the lie, the position and the size of the fetus including the location of the placenta.

Description: A coupling agent (lubricant) is placed on the surface of the body to be studied to increase the contact between the skin and the transducer (instrument that converts electrical energy to sound waves). The transducer emits waves that travel through the body tissue and are reflected back to the transducer and recorded. The varying density of body tissues deflects the waves into differentiated pattern on an oscilloscope. Photographs can be taken of the sound wave pattern on the oscilloscope.

SELF ASSESSMENT EXERCISE 2

Mention at least five (5) abnormalities which chest examination can reveal.

Nursing Responsibilities: Explain the purpose and procedure to the patient. The client is instructed to lie still during the procedure. Instruct patients to drink 6 – 8 glasses of fluid and avoid urination prior to sonogram.

4.0 CONCLUSION

As obvious from this unit there are so many diagnostic investigations for elucidating patients problems exist in clinical practice. The list is inexhaustible. Howbeit, thorough history taking and comprehensive physical assessment helps in knowing which will be most helpful to diagnosing the patient's condition.

5.0 SUMMARY

The unit has taken an incisive look at some of the common diagnostic tests employed in clinical practice. It specifically discusses the purpose, description with particular emphasis on nurses' responsibilities before, during and after the performance of such investigation, and interpretation of results that could be obtained from the conduction of each investigation

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ANSWER TO SELF ASSESSMENT EXERCISE 1

- To screen for diabetes mellitus and other glucose metabolism disorders.
- To monitor drug or dietary therapy in patients with diabetes mellitus.
- To help determine the insulin requirements of patients who have uncontrolled diabetes mellitus and those who require parental or enteral nutritional support.
- To help evaluate patients with known or suspected hypoglycemia

ANSWER TO SELF ASSESSMENT EXERCISE 2

- Lesions (tumors, cysts, masses) in the lung tissue, chest wall or bony thorax or heart.
- Inflammation of lung tissue (pneumonia, atelectasis, abscesses, tuberculosis); pleura (pleuritis); and pericardium (pericarditis).
- Fluid accumulation in the lung tissue (pulmonary edema, hemothorax); pleura (pleural effusion)
- Bone deformities and fractures of the rib and sternum.
- Air accumulation in the lungs (chronic obstructive pulmonary disease, emphysema); and pleura (pneumothorax).
- Diaphragmatic hernia

6.0 TUTOR-MARKED ASSIGNMENT

Discuss you're the nursing roles before, during and after the following diagnostic investigations: (a) Lumber puncture (b) Fasting blood sugar, and (c) Sputum studies.

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UNIT 4 PROVIDING SAFETY AND COMFORT I

CONTENT

1.0 INTRODUCTION

Safety, prevention of accidents and promotion of comfort are vital to survival, and these needs continue throughout life. When a client/patient enters the health care facility, an unwritten contract is established between the client/patient and health care personnel. Inherent in this contract is fact that the health personnel owe the patient a duty of service. As part of the package of that duty of care is the obligation to safeguard the patient from harm/danger as well as to ensure that the patient is made comfortable throughout his/her period of hospitalization.

In view of their infirmities, hospital patients are more susceptible to accidents than any other group of people. As such the management of all hospitals must be safety conscious. Even though it may be argued that safety in the health care setting is everybody's responsibility, the nurse is usually at a vantage point to detect any unsafe condition that could precipitate injury to patients and visitors in health setting and promptly institute corrective measures. Hence, the nurse should be well informed and be acquainted with safety practices in the ward setting and measures that promote patients' comfort.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- outline the general safety rules and practices in the health care setting
- describe the role of the nurse in moving and handling patients including principles underlying moving and lifting of patients

- give examples of risks in a health care setting and suggest preventive measures
- describe the role of the nurse in infection control
- describe the different comfort measures employed in patient's care in the hospital and explain their underlying principles.

3.0 MAIN CONTENT

General Safety Rules and Practices

First, it is important for you to believe that most accidents are preventable. Secondly, most accidents in the hospital result from carelessness or an error in judgment (Donovan, Belsjoe, and Dillon, 1968). Here however are some of the safety regulations and practices in the health care setting:

- Walk rather than run – especially on stairs and along corridors.
- Open doors slowly. Do not open a door by pushing on the glass part.
- Walk on right in halls – especially when pushing a wheelchair or stretcher. Installing corridor mirrors which enable those wheeling a stretcher or other patient vehicles to see around blind corners.
- Installing safety devices, wherever practicable including cautious use of bedside rails.
- Ensure adequate lighting by illuminating areas in which people move and work.
- Ensure good housekeeping and avoid wet patches on the floor. Using non-slip floor coatings. Placing rubber mats on inclines and in the bathtub before a patient uses the tub.
- Do not engage in horseplay or practical jokes.
- Observe principles of good body mechanics. Follow correct lifting procedures when lifting a heavy object or lifting a patient. Possibly introducing safety classes which teach correct lifting procedures and other safety principles.
- Remember the elderly and the very young are more accident-prone than the adult. Protect them as much as possible.
- Endeavor to properly label all materials including medicaments and water taps in bathrooms. Discard all unlabeled containers and bottles. Never use the content of an unlabeled container. Analyze causes of medication errors and instituting changes.
- Provision for refuse collection and proper waste disposal to maintain hygienic condition.
- Ensure proper bed spacing is maintained.
- Maintaining aseptic technique for all invasive procedures.

- Appropriate institution of isolation techniques and barrier nursing in infectious cases.
- Periodic fumigation of hospital ward and surgical theatres.
- Never overload an electric socket and avoid using defective electric equipments.
- All electrical appliances left on should be switched off and deplugged at the close of the day. Employ measures which minimize the accumulation of static electricity.
- Obey all NO SMOKING signs. Never smoke or permit anyone to smoke in the vicinity of oxygen equipment that is in use.
- When smoking in designated areas, see that cigarettes are completely extinguished in receptacles provided.
- Report any injury to self or to others immediately and secure first aid.
- Be safety-conscious at all times. If you notice a safety hazard, report it at once to the right person. Provide educational programs for employee which emphasize that accidents are preventable.
- When in doubt about how to handle or do something the safe way, ask someone with more experience and training than you for help or advice.
- Instituting incident reporting system and appointing members to a safety committee who are saddled with the responsibility of reviewing safety practices, analyzing potential safety hazards, and recommending constructive procedures to prevent accidents.

(Donovan, Belsjoe, and Dillon, 1968)

Activity 1

Quickly recap some of the safety rules and practices in the hospital.

3.2 The Role of the Nurse in Moving and Handling Patients

In professional nursing practice there will always be the need to move patients or heavy equipments from one point to the other and this exposes the nurse to additional risks. Parboteeah (2002) quoting the *Disabled Living Foundation* (1994) indicated that one in four nurses has taken time off with back injury sustained at work, this for some meaning the end of their nursing career.

The back is like a mast or a pillar that makes functional and productive movement possible. Geographically it is an entity comprising the vertebral column with its articular and periarticular structure and the musculature extending from the occiput to the sacrum. The back functions as a structure as well as a mechanism. As a structure, the back can withstand a comprehensive force 10 times the weight it normally supports. As a mechanism, with little effort the back can bent forward,

backwards, sideways and even twisted. However as strong as back is and as vital as it is, it is not immune to injury especially those arising from poor lifting techniques.

While it is beyond the scope of this unit to go into the pathogenesis of back pain, there may be no better period than now to examine what constitute correct lifting technique. Nurse should also know how to set the back muscles (i.e. keep their back muscles partially tensed to absorb any imminent shock) particularly when lifting, or bending forward to pick or give out something. In lifting:

- Keep as close as possible and safe to the object to be lifted.
- Maintain a good base of support.
- Keep the back as vertical as possible.
- Remember not to carry alone object than 70% of your body weight.

These four principles must always be borne in mind when lifting or transferring patients.

Here are additional safety tips or precautions that must be observed in the health care setting:

- Always make sure the brake is on when transferring patients to wheelchairs or stretchers or when the patient is left momentarily in a wheelchair or stretcher. Instruct the patient not to step on the footrest in getting into and out of the wheelchair.
- When transporting a patient on a stretcher, stand at his head and move slowly. Be alert for moving persons or conveyances coming from any possible direction.
- When going down an incline, guide the stretcher from the foot and proceed slowly.
- Check restraining straps for proper fastening.
- Never lift a patient who is too heavy without assistance.
- Never leave a paralyzed patient alone in the bathroom or in bed with the side rails down.
- Never leave a paralyzed or helpless patient sitting in a chair without a protective restraint around the waist.
- Never allow a patient who is in an oxygen tent to have any electric appliances inside the tent. This includes the electric call bell (Donovan, Belsjoe, and Dillon, 1968).

3.3 Control of Infection

Microorganisms exist everywhere in the environment: in water, soil, and on body surfaces such as the skin, gastrointestinal tract, vaginal, e.t.c (Kozier, et al., 2000). Some are harmless; some are beneficial while others otherwise referred to as pathogens are harmful to the body that is, capable of producing infection. The term **infection** is used to describe the invasion and development or multiplication of pathogens in the body of man or animal. Infection could be apparent/manifest, or inapparent/symptomatic/subclinical infection. It could be **autoinfection** (self-infection), or **cross infection** (contracted from other sources such as other individuals harboring or suffering from the same infection or associated with the delivery of health care services in health care setting, usually referred to as **Nosocomial** or hospital acquired infection including **Iatrogenic infection** i.e. those are due to any aspect of therapy). It is therefore the nurses' responsibility to provide biologically safe environment and reduce the spread of infection within the health care setting.

Below are some of the measures employed by nurses to achieve this lofty objective:

- **Hand Hygiene** – Many infections are spread by contact, the hands being a major vehicle in the transmission of infection (RCN, 1992). In Parboteeah (2002) words 'normal skin has a resident population of microorganisms, other transient organisms being picked up and shed during contact in the delivery of nursing care'. Parboteeah stated further that the goal of handwashing is to remove these transient organisms or reduce their number below that of infective dose before that are transmitted to a patient. Handwashing therefore is the most important method of preventing spread by contact. According to Parboteeah (2002) indications for handwashing include: Before and after aseptic techniques or invasive procedures; Before contact with susceptible patient; After handling body fluids; After handling contaminated items; Prior to the administration of drugs; Before serving meals; After removing aprons and gloves; At the beginning and end of duty; and If in any doubt. It is equally important that patients' hands are kept clean.

- **The Use of Face Mask** – Masks are worn to reduce the transmission of organisms by the droplet contact, airborne routes, and splatters of body substances. The CDC recommends that masks be worn under the following conditions: (1) Only by those close to the client if the infection is transmitted by large-particle aerosols (droplets) like measles, mump and other acute

respiratory tract infections; (2) By all persons entering the room if the infection is transmitted by small-particle aerosols (droplet nuclei) e.g. Tuberculosis; (3) During certain techniques requiring surgical asepsis to prevent droplet contact transmission of exhaled microorganisms to the sterile field or to a client's open wound (Kozier, et al., 2000).

- **Sterilization** – The process of destroying all microorganisms and their pathogenic agents e.g. spores. Often employed in the preparation of dressing materials, equipments and other materials needed for surgeries and all invasive procedures. Detailed discussion of sterilization techniques will be considered in some other units.

- **Disinfection –** This is defined as the killing of infectious agents outside the body by chemical or physical means, directly applied. Could be an on-going process (**Concurrent disinfection**) or **Terminal –** the application of disinfective measures after the patient has been discharged from the hospital or has ceased to be a source of infection.

- **Isolation –** Isolation refers to measures designed to prevent the direct and indirect conveyance of the infectious agent from those infected to susceptible individuals (other clients, visitors and health care personnel). A variety of isolation techniques are used in the health care setting. This will be expatiated in some other units but it is suffice to state that when patients are isolated because of contagious and infectious diseases, the nurse must be certain that proper technique is carried out in caring for them and must be sure that their visitors also understand and carry out necessary precautions.

- **Others are:** ***Adequate Bed-Spacing; Proper Waste Disposal; Health Education*** *e.t.c.*

3.4 Commonly employed Comfort Measures in the Hospital

(a) Bedmaking

Hospital patients spend varying degree of time in bed, as such; their comfort is of utmost importance. The need to improve and maintain, for as long as possible, the comfort of these patients therefore forms the primary reason for bed making. A related one is the need to relieve pressure from certain parts of the body and stimulates circulation thereby preventing the development of decubitus ulcer (pressure sore).

A Typical Hospital Bed

A typical hospital bed is higher than the conventional beds at homes. This is to reduce undue physical strain to the nurses' back while attending to the patient. The **bedstead** is usually 6ft 6 inches long, 3ft wide and 26inches high. The **framework** is steel or iron; the **castors** are well made and move easily without jarring the bed. In some cases the height may be adjustable, and the head or foot of the bedstead may be raised or lowered by levers. A movable back is supplied with most beds. This can be brought forward to act as a **backrest**, or removed completely for any treatment when necessary. A **mattress** is placed on the bedstead. Hair, interior spring, rubber foam, plastic foam, sorbo rubber are the types commonly used in hospital wards. The mattress is usually covered with a polythene sheet or protective waterproof material.

The number of **pillows** used will depend on the need of the patient. Pillows are usually stuffed with foams/hairs with a protective cover under the pillowcase. **Blankets** – Turkish toweling, cellular cotton, synthetic material or wool blankets may be used to keep the patient warm without being unnecessarily heavy or causing discomfort to the patient. Terry blankets and cellular cotton blankets are most commonly used nowadays. **Bed sheets** must be long and wide enough for the type of bed used. Sheets are often made of cotton, polyester/cotton mixture or linen. **Counterpanes** or bedspread are usually light in colour and weight. **Draw sheets** are usually placed over a polythene protector (mackintosh) across the bed under the patient's buttocks. They are often placed in such a way that they could be drawn at frequent intervals to give the patient a clean, cool, fresh piece of sheet to lie on. The standard size of drawn sheet is 2 yards wide and $1^{1/2}$ yards long. **Long waterproof sheets** – these are used routinely to cover the entire mattress in some hospitals while in others they are only used for selected patients.

Adjuncts to Hospital Bed/Special Appliances used in Bedmaking

Bed tables - Preferably of adjustable height. Meant for eating or leaning arms on when sitting upright or when in respiratory embarrassment.

Bed cradles - Made of metal. Used for keeping the weight of bedclothes off the patient's legs or body, especially in weak or debilitated patients. Particularly useful after Plaster of Paris (POP) has been applied to fractured leg.

Bed rest – Usually attached to but may be separate from the bed. More often than not metal but occasionally could be made of wood especially

the separate type. Most commonly used in putting the patient in sitting up position with pillows placed between it and the patient.

Bed elevators & bed blocks – A number of beds have elevators built into them so that the head or foot of the bed may be raised as required. In some cases, the elevators, which are usually metal, have several rungs at varying heights on which the bar of the bed may be supported at desired height. Sometimes a portable wooden bed blocks may be used for the same purpose. Such blocks usually have a depression at their tops into which the castors of the bed can fit. They also vary in height.

Bed – strippers – These are stands placed at the foot of the bed over which bedclothes are draped during bedmaking. Sometimes, two chairs placed back to back can be improvised for this.

Air rings /Air cushions/Foam rubber rings – These may be placed under the patient's buttocks to relieve pressure.

Fracture boards – Wooden. May be placed under the mattress to provide a firmer based on which to lie. In other words, they prevent the mattress from sagging. Patients with spinal conditions, back injuries and some fractures find this most helpful.

Sand bags – These are made of impermeable materials, which are filled with sand. They are used for immobilization of limb(s) in the treatment of special conditions e.g. amputation to control phantom movement/pain. They must always be covered with cotton.

Hot water bottles – These are made of rubber or aluminum. They are used to give added warmth to patient.

Others are Drip stand, Bed stirrup e.t.c

Principles Governing Bedmaking

Bed making is essentially two-man procedure. Some of the principles guiding this procedure are outlined below:

1. ***Principle of Organization*** – Bedclothes and other materials needed must be arranged in order of priority. The two nurses must work from top to bottom of the bed. They must equally work in unison/harmony i.e. there must be synchronicity of action.
2. ***Principle of Body Mechanics*** – There must be economy of movement.

3. ***Principle of Comfort and Safety*** – The two nurses must maintain a near erect position and avoid straining or overstretching their back to prevent injury. The bed should be crump and wrinkle free. Always lift the patient off the bed or roll from side to side in case of occupied bed. On no account should the patient be dragged on bed.
4. ***Principle of Asepsis*** – Fans must be put off. There should be no jarring or flying of bed sheets in the air to prevent cross infection. Uniforms are prevented from touching bedclothes and hands are washed before and after the procedure.
5. ***Time Management*** – The two nurses must work with speed and accuracy. There must be economy of movement.

Bedmaking: Definition and Types

The process of applying or changing linens is what is referred to as bed making. Types are:

The Unoccupied Bed: There are two types of unoccupied bed viz – The *Closed Bed* and the *Open Bed.* A closed bed is the bed making process that is performed following the discharge or transfer of a patient when no new patient is expected. An Open Bed on the other hand is the bed making process that is carried out when the occupant is able to be up while the bed is being made i.e the type that is made for an ambulant or out-of-bed patient

The Occupied Bed: Bed making process in which the bed is made while the patient is in it. There are different typologies – *Fractured Bed* (Characterized by a firm lying surface its offers the patient. Often employed in the care of patient with back pain and those with fractures); *Divided Bed* (So named by the fashion in which it is made. Used mostly in the care of amputees. Also employed in the drying of Plaster of Paris). *Post Operative Bed/Operation Bed* – This is the bed that is prepared to receive a post surgical patient with minimal disturbance.

Making the Unoccupied Bed

Points to Keep in Mind

Whether or not making empty beds for new patients is one of your responsibilities, bed making is a frequent procedure for any staff member giving nursing care.

Many patients are required by doctor's orders to sit up in a chair, even for a short time. So most patients' beds are unoccupied at one time or another during the morning and can be made when the patient is out of it.

In any case, it is important to remember that soon a patient will be occupying the bed. If the bottom sheet is anchored properly, it will not loosen and bunch in wrinkles under the patient's back. The top covers will be high enough to cover the shoulders, yet loose enough so that the patient's feet will not be restrained and pulled forward in an abnormal position.

In the procedure described here, there is no linen on the bed to start with; it is made with clean linen throughout. However, if the bed is unoccupied only because the patient is out of it for a while, then there will be linens on the bed. Thus the list below would be adjusted to those items needed in your situation.

Equipment Needed

1. Cotton quilted mattress pad or mattress cover according to policy.
2. 2 large sheets
3. Rubber or plastic draw sheet, if it is the policy to use one
4. Cotton draw sheet
5. Blanket, if needed
6. Bedspread
7. Pillowcase for each pillow used

	Important Steps	**Reasons for Action**
1.	Wash your hands before selecting linens; then take everything needed next to patient's unit.	Unclean hands may spread disease germs to clean linen, and to patient who is to be to and pillowcase.
2.	Place linen on straight chair near foot of bed. Stack the items in order of use, that is, bedspread and pillowcase on bottom, and so on with the mattress pad on top.	Stacking linens in this manner saves time and effort later on.
3.	See that bed is in high position and is flat and that wheels are locked.	The higher level will cause less strain on back and leg muscles.
4.	Place the folded quilted mattress pad on near side of bed and unfold it without lifting or shaking it out	Lifting and shaking any item of linen may stir up dust and lint which may which may carry and disease-causing organism.
5.	Place folded sheet on near side of bed and unfold it lengthwise in the same manner described above, that is without shaking or flapping	Also lifting and flapping linen at shoulder level to unfold it causes unnecessary strain and fatigue on the back, shoulder, and arm muscles.

	it out.	
	Arrange sheet in this way:	
	(a) With bottom hem even with foot of mattress, depending on length of sheet. (b) Allow 15 to 18 inches at head of bed tuck under mattress. (c) With center of sheet at center of bed, fanfold the far half of sheet beyond the center of bed.	Placing the bottom sheet correctly is the most important step in bedmaking. The Foundation sheet should be secure against anything that might tend to loosen it. For this reason, never skimp on this 15–to–18 inches allowance to tuck under head of mattress. Covering foot of mattress is far less Important. The sheet is doubled back on itself in folds of several inches - like a fan. Placing this foundation sheet straight on the bed is also important. A sheet that is even just a little crooked, on the base, will always have wrinkles.
6.	Lift the head of mattress with one hand and pull sheet under the mattress with the other hand. See that material is smooth after tucking under.	If you face in the direction of your work and move along in this position, you will Avoid twisting groups of muscles, thus reducing strain and fatigue.
7.	Make a mitered corner at head of mattress.	
8.	Continue tucking sheet under side of mattress from head to foot.	Move along with your work, facing side of mattress as you tuck sheet from head to foot of bed. Keep feet slighty separated.
9.	If rubber draw sheet is used, place it about 12 to 15 inches from head of mattress. Tuck smoothly under mattress on near side.	Where plasticized mattresses are used, it is often the policy to omit a waterproof sheet. It is sometimes placed over the mattress and under the quilted mattress pad.
10.	Cover rubber sheet with cotton draw the sheet or a large sheet folded once may	Lying directly on even a small strip of rubber sheet will be uncomfortable and cause skin

	cross-wise. Place this cotton sheet about two or three inches higher than the rubber sheet and see that it is completely covered.	irritation to patient.
11.	Tuck cotton draw sheet smoothly under side of mattresses on near side. Fanfold far side of the sheet at center of bed.	
12.	Go to other side of bed and tuck bottom sheet smoothly under head of mattress. Make a mitered corner.	You may be taught to make on entire side of the bed before going to the other side. If careful attention is given to unnecessary motion and energy there may not be much difference.
13.	Grasping bottom sheet with both hands, tuck under mattress along side of bed, tightening and smoothing it, as you Move from head to foot of bed.	By keeping your feet slightly separated and your back straight, you will reduce strain.
14.	Pull rubber draw sheet (at center of bed) toward you and smooth it out. Grasp with both hands, holding palms downward on level with mattress; tighten the sheet and tuck under side of mattress.	When holding the sheet with palms downward, the strong muscles of the shoulders and arms are used. Keep one foot in front and rock backward on the other, as you tighten the sheet.
15.	Pull the cotton draw sheet toward you and smooth it in place over the rubber sheet. Grasp it with both hands and tuck under side of mattress in the manner described above.	
Now you are ready to make the top part of the bed:		
16.	Continue on same side of bed. Place the folded top sheet on near side of bed and unfold it in the manner described earlier. Arrange it this way: (a) with upper edge of sheet even with head of mattress.	If wrong side of them is up, when the top edge of the sheet is turned down over the edge of bedspread, the right side of hem will show.

	(b) with center of sheet straight and at the center of bed.	
17.	Tuck sheet (and blanket if used) under foot of mattress and make a corner. Tuck under mattress at corner but DO NOT tuck in along the side of the bed. Allow it to hang free	
18.	Place folded spread on bed and unfold it as described earlier : (a) The upper edge is even with head of mattress. (b) It is centered and hangs evenly, covering the sheet and blanket completely.	
19.	Tuck bedspread under the mattress at foot of bed. Make a corner on near side, but do not tuck the finished corner under mattress.	Allow the top covers to hang free at side of bed.
20.	Go to opposite side of bed and repeat steps to complete making the bed.	
21.	Rest the pillow on foot of bed and draw on pillowcase - in this way: and grasp the inside seam at end of case. (a) Slip your hand inside pillowcase and grasp the inside seam at end of case. (b) Still holding the inside seam, place this same hand over the end of pillow and pull on pillowcase (c) Fit corners of case over corners of pillow.	If pillowcase is considerably wider than the pillow, tuck the excess material into a smooth fold on one side, making the case fit well over the pillow. Keep this tuck in place when placing on bed.
22.	Place the pillow(s) flat on the bed	

23.	If you wish to "open" this bed, here is one of various ways it might be done: (a) With both hands grasp the upper edge of the top covers; carefully bring your arms toward foot of bed, until the upper edge of cuff is at the foot of the bed. (b) With hands still in place, bring the cuff up to the fold halfway up the bed. Straighten and smooth the cuff.	Opening the bed, that is, turning the covers down, makes it look more inviting to the patient sitting for a time in a chair. If your patient has gone to a treatment room or X-ray Department, it will be easier to assist him back in bed.
24.	If you wish a "closed" bed for a patient not yet admitted, the upper edge of bedspread is left even with the head of mattress.	The steps of this procedure lend well to learning good body mechanics. There is a certain rhythm that can be developed which will help you do job in less time and with much less effort. Try it.

Making the Occupied bed

Points to Keep in Mind

1. Making the bed with a patient in it is necessary when the patient is too ill or disabled to be out of bed. It is a long procedure and if not accomplished skillfully, can be an extremely exhausting experience for the patient. It is therefore a time when individual adjustments are needed to save time and to lessen the exertion of the patient. And it calls for skills in handling each step smoothly and avoiding irritations, such as bumping and jarring the bed.
2. It is also a time to observe the patient and to give him chance to talk about anything on his mind. This may be done by listening, not talking about your own problems and experiences.
3. If this procedure follows the patient's bath in bed, the first steps as given here will have already been accomplished. For instance, all the top linen would have been removed and the patient covered with a bath blanket. However, to give a complete description here, this procedure starts with all bed linens in place.

Equipments Needed

1. 2 large sheets, or as many as policy calls for
2. Cotton draw sheet; if used, top sheet is now used for draw sheet
3. Bedspread
4. Pillowcase for each pillow
5. Bath blanket.

	Important Steps	**Reasons for Action**
1.	Wash your hands before selecting linens. Take everything needed to patient's unit and stack items on chair in order of use.	If this procedure follows the patient's bath, start with step 5 and loosen all the lower sheets. The reason is that the clean linen will already be stacked on chair at bedside. If top covers are removed and bath blanket is on the patient, move on to step 10.
2.	Provide for privacy by placing screen or pulling curtain.	
3.	Adjust the bed to level position and lock the wheels. Remove all but one pillow from under the patient's head.	
4.	See that laundry bag is in a place Close-by.	
5.	Loosen all bottom sheets all around the bed.	You will be delayed later if sheets are still tucked securely under mattress.
6.	Remove bedspread by grasping it at top edge and folding it to foot of bed. If it is not to be used again,fold and bunch it and drop in laundry hamper.	
7.	Place the folded bath blanket on near side of bed and unfold it over top sheet If patient is not too ill, ask him to hold the top edge of bath blanket.	If patient is not familiar with this step for removing sheet, tell him what you will do, so that he can be sure that he will not be exposed.
8.	Slip hands under side of blanket and grasp upper edge of sheet and pull it from under the blanket to the foot of bed.	
9.	Bring the top and bottom hems together and fold the sheet on lower part of bed without shaking it out.	Shaking and flapping linens (especially used linen) stirs up dust and lint which carry disease-causing organisms into the air.
10.	Place folded top sheet on back of chair.	This top sheet will be used again as a bottom sheet or to cover rubber

		draw sheet.
11.	Go to other side of bed and help patient move toward you, then turn him to side-lying position, facing you. Position him in good alignment without pillow, if this is not too uncomfortable for him.	It is much easier to remove sheets and replace them if there are no pillows on the sheets. However, one pillow can be managed, if patient is uncomfortable without it.
12.	Raise the side rail on that side of bed before returning to your original position.	If patient is turned away from you to his side, he may just keep on turning and fall out of bed. There is real danger of this.
13.	Fold the near half of used cotton draw sheet close against the patient's back.	
14.	Fanfold the rubber draw sheet smoothly to the back of patient.	These sheets are folded separately Because each will be removed later (except the rubber draw sheet) one at a time.
15.	Fanfold the entire length of the used bottom sheet to the center of bed and close to the patient's back. Tuck each sheet under the one before.	
16.	Place the folded clean bottom sheet on the near side of bed and unfold it length-wise in this manner: (a) With center fold straight with mattress with it. (b) Allow 15 to 18 inches at head of mattress. (c) With bottom hem even with foot of mattress. (d) Fanfold far half of sheet carefully to patient's back.	Face the direction of your work and move Keep back straight but not rigid; bend at hips. Knees should be slightly flexed and feet apart throughout action. This sheet will be placed under the patient later. Do not wrinkle or pull it out of shape.
17.	Lift corner of mattress with one hand as you tuck sheet under head of mattress with	

	the other hand.	
18.	Make a mitered corner at head of mattress.	
19.	Tuck sheet smoothly under mattress along side of bed from head to foot.	
20.	Locate the free end of the rubber sheet near patient and pull it toward you, without disturbing the folded bottom Sheet.	
21.	Straighten the rubber sheet in place and tuck it under mattress at side of bed.	Make sure that rubber sheet will never be next to patient's skin, because it will be irritating . Allow the cotton draw sheet to overlap the rubber sheet by two or three inches at upper and lower edges.
22.	Place the used top sheet (folded once crosswise) over the rubber draw sheet and completely cover it. Fold far half of sheet next to patient's back. Tuck hanging part under mattress, and make sure both rubber sheet and draw sheet are smooth.	
23.	Let the patient know that it is time for him to roll back toward you and that he is to roll over the folded sheets which are at the center of the bed.	
24.	First, cradle the patient's feet and lower legs in your arms and move towards you over the "bump" of folded line (Keep edges of the bath blanket folded up on the patient so it will be out of the way of patient's movements and your action).	Try to keep the patient's body in as good ' alignment as possible. It will be much - less strain on him. Also, it will cause you less strain and fatigue, if you keep your back straight your knees slightly flexed. Keep one foot a little in front of the other. This allows you to use the long strong thigh muscles rather than the small muscles of the back.
25.	Next, give patient the assistance he needs to move his hips and shoulders as he rolls toward you to his side.	

26.	Reach over the patient and push folded sheets away from patient's back toward the far side of bed.	If patient has a drainage tube of any kind, see that there is enough slack in tube for turning.
27.	Raise the side guard on your side, then go the other side of bed.	Use these side guards if available because the patient may misjudge the width of bed and move to near edge.
28.	Lower side guard. Starting with soiled bottom sheet, fold and bunch it as you remove it from the bed.	Hold linens away from uniform and drop in laundry hamper.
29.	Remove and discard cotton draw sheet in the same manner.	If patient is becoming uncomfortable Without a pillow, reach for the one you put aside earlier change pillowcase and place under patient's head.
30.	Pull clean bottom sheet in place; tuck under mattress at head of bed; make mitered corner and tuck under mattress along side of bed.	
31.	Pull both draw sheets toward you and straighten them. Tuck free end of rubber draw sheet under mattress, keeping it smooth and tight.	
32.	Straighten clean cotton draw sheet. Grasping and pulling at this step. it with both hands (palms down), hold it at level with mattress. Pull it tightly, but without lifting it up, and tuck under side of mattress.	There is no reason to overdo the tugging in place over rubber sheet. If you lift the draw sheet up higher than mattress level, you may cause the patient to roll out of bed. The cause and effect of this is something like using crowbar to pry up a heavy object.
33.	Place clean top sheet on near side of bed and unfold it on blanket top of bath blanket	
34.	Have patient hold upper edge of sheet while you fold bath blanket to foot of bed and remove it.	This is done to prevent exposing patient. At the same time, folding the blanket toward the foot of bed under the top sheet does not stir up dust.

35.	Arrange top sheet to extend high enough to cover patient's shoulders; leave excess at foot of bed; see that it hangs evenly on both sides.	
36.	Before tucking sheet (and blanket, if used) under foot of mattress, make a toe pleat to allow room for patient's feet. When blanket is used, make the pleat in sheet and blanket together. The toe pleat may be made in this way.	Tight top covers not only are uncomfortable for patient's feet but may cause a serious condition. If the feet are restrained in a forward position over a period of time, the muscles of he soles of the feet are weakened. Th1s results in a serious deformity called drop foot.

Note: The other types of bed making will be discussed in some other units.

(B) Personal Hygiene Practices

Maintenance of personal hygiene is necessary for comfort, safety and well-being. Hygiene refers to practices that promote health through personally cleanliness and it is fostered through activities like bathing, tooth brushing, cleaning and maintaining fingernails and toenails, and shampooing and grooming hair. Many a people shed their worries along with the day's accumulation of dirt by taking baths or showers. Man considers important to his well-being not only having his skin cleaned but also being well groomed – wearing decent clothes with nails cut and clean, and feet well shod. When clean and attractively dressed, a person often gains confidence and can face difficulty with equanimity.

Cleanliness and good grooming are even more important in illness than in health. Many a nurse has had experience of seeing a sick and uncomfortable patient drop off into a restful sleep after taking his bath and having his bed changed. Oral care to relieve bitter/distasteful taste and a general dryness of the mouth which is often associated with ill health; and hair care to bring refreshing feeling are all essential adjuncts of care. But when these factors are left unattended, the patient looks and feels more miserable than his state of health warrants.

Healthy individuals are capable of meeting their own hygiene. Sick people are however incapacitated by their ill health and as such require the nurses' assistance to meet all their hygiene needs. The onus therefore

lies on the nurses to assess the person's ability to perform self-care, plan necessary intervention to meet any deficit and evaluate the effectiveness of the care.

Hygiene practices and needs may differ according to age, inherited characteristics of the skin and hair, cultural values and of course health problems. Whatever, the point to be made is that, most hygiene practices are based or maintaining or restoring healthy qualities of the integument system.

Care of the Skin

In view of the enormous functions of the skin, it is just rational for the skin to be kept healthy. One of the principal ways to ensure this is by bathing. **Bathing** is the medium and method of cleansing the body. Although it's primarily objective is restoring cleanliness, it confers other benefits on the body. Such include:

1. Keeps the body clean of accumulated dirt, perspiration, secretions, microorganism and debris, which can clog the skin pores, and thereby reduce irritation and soreness. Removing these accumulations, which can act as culture media for pathogens also aids in preventing infection and preserving the healthy, unbroken condition of the skin?
2. Provides comfort and relaxation to a tired, restless patient.
3. Stimulates circulation, both systematically and locally.
4. Promotes muscle tone by active and or passive exercise.
5. Enhances elimination of wastes from the skin
6. Reduces, if not totally eliminate unpleasant body odour.
7. Prevents lung congestion by stimulating respiration through change of position
8. Improve the patient's self esteem (self image) through improved appearance, which lead to increased interaction with others.

Types

The different kinds of bathing that people undertake can be subsumed into two major groups:

- **Cleansing Bath: -** Tub bath or showers

- Partial bath
- Complete bed bath

- **Therapeutic Bath: -** Sitz bath

- Emollient bath or medicated bath

Cleansing Bath: The Objectives of cleansing bath are to:

- promote hygiene and comfort for the patient
- observed the patient's skin condition
- assess the patient's range of motion.
- encourage the patient to be as independent as possible on allowed
- assess the patient's physical and mental status
- establish a communication pattern between patient and nurse that promotes health teaching and expression of patient concerns.

Providing a Tub Bath or shower

Equipments: - Buckets; Sponge/body flannel; Soap in soap dish; Small bowl; Towel; Body lotions; Pyjamas.

Procedure

Actions	**Rationale**
(a) Assessment	
• Check nursing care plan for hygiene directives.	Ensures continuity of care.
• Assess the patient's level of consciousness, orientation, strength, and mobility	Provides data for evaluating the patient's ability to carry out hygiene practices independently.
• Check for gauze dressings, plaster cast, or electrical or battery operated equipment	Contraindicates taking a tub bath or shower.
• Determine if and when any laboratory or diagnostic procedures are scheduled	Aids time management
• Check the occupancy and cleanliness of the tub or shower	Helps in organizing the plan for care.
(b) Planning	
• Clean tub or shower if it appears to need it	Reduces the potential for spreading microorganisms.
• Consult with patient about a convenient time for tending to hygiene needs.	Facilitate cooperation between the patient and nurse.
• Assemble supplies, floor mat, towels, face cloth, soap, clean pyjamas or gowns	Demonstrate organization and time management.
(c) Implementation	
• Escort the patient to the shower	Show concern for the patient's

or bathroom	safety
• Demonstrate how to operate water faucet and drain	Ensures the patient's safety and comfort.
• If the patient cannot operate the water faucet, fill the tub approximately half full with water between 105^0F-110^0F (40-43^0C) or adjust the shower to a similar temperature.	Demonstrate concern for the patient's safety and comfort.
• Place a DO NOT DISTURB or IN USE Sign on the outer door.	Ensures privacy
• Help the patient into the tub if assistance is needed; this may be done by:	Reduces the risk of falling.
- placing a chair next to the tub - having the patient swing his/her feet over the edge of the tub - leaning forward, grabbing a support bar and raising the buttocks and body until they can be lowered within the tub.	
• Have patient sit on a stool or seat within the tub or shower, if the patient will have difficulty existing from the tub or may become weak while bathing.	Ensures safety.
• Show the patient how to summon help.	Promotes safety.
• Stay close at hand.	Ensure proximity in case there is a need to assist the patient.
• Check the patient at frequent intervals by knocking at the door & waiting for a response.	Shows respect for privacy yet concerns for safety.
• Escort the patient back to his/her room on completion of the bath or shower.	Demonstrates concern for safety & welfare.
• Clean the tub or shower with antiseptic/antibacterial agent and dispose off the soiled linen in its designated location.	Reduces the spread of microorganism and demonstrate a conscientious concern for the person who will use the tub shower or.
• Remove the IN USE sign from the door.	Indicates that the bathing room is unoccupied.
(d) Evaluation	
Patient is clean; Patient remains	

uninjured.	
(e) Document: Sample documentation: Date and time, Tub bath taken independently, signature, title.	

Source: Timby, B.K. (ed.) (1996). *Fundamental Skills and Concepts in Patient* Care (6^{th} ed.).

Partial Bath

A daily bath or shower is not always necessary. In fact, the older adults who do not perspire as much as younger adults and who are prone to dry skin, frequent washing with soap may further deplete the oil from their skin. Therefore, there may be certain instances when partial bathing may be appropriate.

A partial bath consists of washing those areas of the body that are subjected to the greatest soiling or source of body odour such as the face, hands, and axillae. Partial bathing may be done at a sink or with a basin at the bedside. There may also be situations in which just the perineum, the areas around the genitals and rectum are bathed. This is often referred to as perineal care.

Perineal Care

Indications

- Following a vaginal delivery or gynecologic or rectal surgery, so that the impaired skin is kept as clean as possible.
- Whenever male or female patients have bloody drainage (urine/stool); blood is a good medium for growth and development of microbes, therefore its removal through perineal care reduces risk of infection.

Principles Guiding Perineal Care

1. Prevents direct contact between the nurse and the secretion or excretion that may be present, and
2. Cleanse in such a manner as to remove secretions and excretions from less soiled to more soiled areas.

The Sitz Bath

A major component of perineal care is the sitz bath. It is the immersion of buttocks, thighs, and lower trunk in water of a temperature from 110^0 to 115^0F. The sitz bath may be given in a regular bathtub, filled approximately one third full. There are however specially designed sitz

tubs that allow the patient to sit comfortably with hips and buttocks immersed in water. A portable sitz basin is also is also available for use in commodes, chairs or even in bed. If nothing else is available, a large basin could be used. It is important to point out here that; local vasodilatation of the lower extremities may draw blood away from the perineal area when the feet and the legs are completely immersed in the water as in a bathtub. Therefore, wherever feasible, the feet and the legs should not be immersed in the water. As such seating a patient in a basin is more desirable than sitting him in a bathtub (King, Wieck & Dyer, 1977).

SELF ASSESSMENT EXERCISE 1

Quickly recap the indications for perineal care.

Indication

- The sitz bath is used to relieve discomfort, congestion, or inflammation in the pelvic and rectal regions.
- Promotes phagocytosis through increased peripheral vasodilation.
- Stimulate formation of new tissue through increased blood supply.
- Promote relaxation of local muscles.
- Provide for cleanliness.

Equipment – Sitz tub or bathtub, Bath thermometer, Water of indicated temperature, Rubber or plastic ring, Bath blankets and towel, Straight chair or bath stool.

Procedure

Suggested Action	**Reason for Action**
(a) Assessment	
• Pull the privacy curtain.	Demonstrate respect for modesty.
• Inspect the genital and rectal areas of the patient.	Provides data for determining if perineal care is necessary.
(b) Planning	
• Explain the procedure to the patient.	Reduce anxiety and promote cooperation
• Wash your hands.	Reduces spread of microorganisms.
• Gather equipments.	Demonstrate organization and time management.
• Place the patient in dorsal recumbent position and cover	Provides access to the perineum.

with a bath blanket.	
• With gloved hands remove soiled dressings and disposed off properly.	Soiled dressing are contaminated
• Consult the patient's folder for prescribed water temperature.	Engenders accuracy and enhances maximal Benefits from treatment.
(c) Implementation	
• Check the temperature of the water with your bath thermometer as you fill the tub scalding.	Facilitates bath and prevent possible one-third full with warm water.
• Place the bath stool or the straight chair next to the bathtub and cover the seat with one of the bath towels you have obtained.	Ensures safety.
• Assist the patient in removing his bathrobe and have him sit on the bath towel.	Promotes safety.
• Take the bath blanket and drape it around vasoconstriction.	Helps in avoiding chilling which may cause the patient. Pin the end together at the back.
• If indicated, place rubber ring in bathtub.	Sitting the patient on rubber ring will relieve Pressure and discomfort if he has rectal or Perineal sutures or pain.
• Help the patient get into the tub. Take the towel the patient was sitting on and place it under his buttocks.	Reduces the risk of falling and sustaining injury.
• Check the water temperature from time to time and add warm water as required.	Fluctuations in water temperature can cause cardiovascular stress.
• After the prescribed time for treatment has elapsed, usually 20 – 30 minutes, help the patient out of the bath tub.	Maximum benefit is obtained within the first 20 minutes. Prolonging the procedure tires the patient and increases chances of cardio-vascular stress.
• If necessary or requested by the patient, help him to dry himself and put on a clean gown.	Demonstrate concern for welfare.
• Help the patient to return to bed. See that the bed is dry and warm. Arrange the bedding for patient's comfort.	Promotes comfort.

• Return to bathroom.	Wash the tub, disinfect Reduces the spread of microorganism it, if necessary.
• Return to bathroom. Wash the tub, disinfect it, if necessary. Place used towels/washcloths in the hamper. Treat rubber rings as instructed and return it to designated storage.	Reduces the spread of microorganism and demonstrate a conscientious concern for the next person who will use the tub.
(d) Evaluation	
• Note and document the patient's total reaction Helps in monitoring patients response to treatment, including the colour of skin, therapy. The write-up serves as a vehicle pulse and respiration. In addition note the of communication with other team members.length of time in bath.	

Source: Donovan, Belsjoe, & Dillon (1968) *The Nurse Aide;* King, Wieck, & Dyer (1977)
Illustrated Manual of Nursing Techniques.

4.0 CONCLUSION

Provision of comfort and safety no doubt stands out as one of the nonnegotiable requirements for successful recuperation and rehabilitation of our clients. To say it is vital to good nursing care is to put it mildly. This explains why the unit has taken time to examine steps that could be taken to reduce threats to patients' life and discussed a few comfort measures commonly employed by nurses. You may ask why few? Well, that is what the scope of this unit can conveniently accommodate. Besides, the issue of comfort and safety is an ongoing thing, so it is going to be a recurring theme throughout the period of your training and beyond.

5.0 SUMMARY

The need for safety and comfort in the health care settings cannot be overemphasized. Hence the unit opens with a discussion on the general safety rules and practices in the health care setting. It particularly examined the role of the nurse clinician in moving and handling patients and the guiding principles thereof. The role of the nurse in infection control was equally examined. Last but not the least, the unit takes a detailed look at a few of the comfort measures currently being employed in our hospitals. However, like we did note, there are one thousand and one thing that could be done to ensure patient comfort and it is a dynamic issue as it differ from patient to patient and changes as the

patient's condition changes. So the list is inexhaustible. The few examples given here definitely would have help us to appreciate how far these seemingly simple measures can go in alleviating the varying degree of discomfort experienced by our clients.

ANSWER TO SELF ASSESSMENT EXERCISE 1

Following a vaginal delivery or gynecologic or rectal surgery, so that the impaired skin is kept as clean as possible.

ANSWER TO SELF ASSESSMENT EXERCISE 2

Whenever male or female patients have bloody drainage (urine/stool); blood is a good medium for growth and development of microbes, therefore its removal through perineal care reduces risk of infection

6.0 TUTOR-MARKED ASSIGNMENT

Describe the different comfort measures employed in patient's care in the hospital and explain their underlying principles.

7.0 REFERENCES/FURTHER READING

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UNIT 5 PROVIDING SAFETY AND COMFORT II – PAIN MANAGEMENT

CONTENTS

1.0 INTRODUCTION

Everyone at one point or the other has experienced some type or degree of pain. Inspite of its universality and eternal presence among mankind, the nature of pain remains an enigma (Fuerst, Wolff, & Weitzel, 1974). Pain is a complex experience that is not easily communicated; yet it is one of the most common reasons for seeking health care. It is the chief reason people take medication and a leading cause of disability and hospitalization. Pain is subjective and highly individualized and its interpretation and meaning involve psychosocial and cultural factors. In other words the person experiencing pain is the only authority on it. Besides, no two persons experience pain in the same way and no two painful events create identical reports or feeling in a person. And as the average life span increases, more people have chronic disease, in which pain is a common symptom. In addition medical advances have resulted in diagnostic and therapeutic measures that are often uncomfortable. One therefore cannot but agree with White (1995) that pain is one of the most common problems faced by nurses, yet it is a source of frustration and is often one of the most misunderstood problems that the nurse confronts. The truth however is that when patients are comfortable, encouraging necessary activities often become easier both for the patient and the nurse. This explains why much of nursing care revolves round relieving pain and ensuring comfort. This unit therefore discusses pain in its entirety with particular focus on pain management strategies.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- discuss the nature and concept of pain
- identify major causes of pain
- differentiate between acute and chronic pain
- discuss common misconceptions about pain
- outline factors influencing people's response to pain
- discuss pain-relieving strategies.

3.0 MAIN CONTENT

3.1 Nature and Concept of Pain

Pain of any kind is difficult to define, in view of its subjective nature. Pain is much more than a single sensation caused by a specific stimulus. Pain is a complex mixture of physical, emotional, and behavioral reactions. Pain is a subjective and highly individualistic, and interpretation and meaning of pain involve psychosocial and cultural factors. Pain cannot be objectively measured, such as with x-ray examination or blood test, and although certain types of pain creates predictable signs and symptoms, often the nurse can only assess pain by relying on the clients words and behaviour. This coupled with the fact that the nurse along with the physician and other health practitioners cannot see or feel to which they attend, makes the person experiencing pain the only authority on it. No wonder that a noted pain theorist, McCaffery (1980) defined pain as "what the person experiencing it says it is; and existing whenever he says it does". Therefore to help a client gain relief, the nurse must believe that the pain exists.

The most commonly accepted definition however is that of the International Association for the Study of Pain (IASP) which acknowledges the multi-factorial nature and the importance of individual interpretation and experience: Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described by the patient in terms of such damage (Blair, 2002). Pain has also been defined, and occasionally still is, on a philosophical and religious basis as punishment for wrongdoing. Aristotle defined pain as well as anyone when he wrote that it is the 'antithesis of pleasure…. the epitome of unpleasantness' (Fuerst, Wolff, & Weitzel, 1974). Fuerst,Wolff, & Weitzel, (1974) submitted further that another typical definition depicts pain as basically an unpleasant sensation referred to the body which represents the suffering induced by the psychic perception of real, threatened, or phantasied injury. Pain could therefore be viewed as a protective physiological mechanism. A

person with sprained ankles for instance avoids bearing full weight on the foot to prevent further injury, warning the body that tissue damaged has occurred. Even though pain may warn of tissue injury or disease, it should be noted that the degree of pain is not necessarily in direct proportion to the amount of tissue damage, nor tissue damage always present when pain occurs.

3.2 Prejudices and Misconceptions

Health personnel often hold prejudices against patients/clients in pain especially those suffering from chronic pain, except where the client manifest objective signs. White (1995) outlined the following as common biases and misconceptions about pain:

- Drug abusers and alcoholics overreact to discomfort.
- Patients/Clients with minor illnesses have less pain than those with severe physical illness.
- Administering analgesics regularly will lead to drug dependence.
- The amount of tissue damage in an injury can accurately indicate pain intensity.
- Health care personnel are the best authorities on the nature of the patient's/client' pain.
- Psychogenic pain is not real.

Unfortunately, all people are influenced by prejudices based on their culture, education, and experience. As such the extent to which nurses allow themselves to be influenced by prejudices may seriously limit their ability to offer effective pain relief. It is the realization of this fact that makes White (1995) to assert that the nurse must acknowledge his/her prejudices and of course view the experience through the patient's eyes to be able to render meaningful and formidable assistance to the patient.

SELF ASSESSMENT EXERCISE 1

List out the prejudices and misconceptions people have about pain.

3.3 Types of Pain

There are several ways to classify pain. Pain can be classified based on its duration, location and causes. As such the following are the different typologies of pain that exist:

Classification based on Duration

Acute Pain – Acute pain is the sensation that results abruptly from an injury or disease and usually it is short-lived. Meinhart and McCaffery

(1983) defined it as pain that follows an acute injury, disease, or types of surgery and has a rapid onset, varying in intensity (mild to severe) and lasting for a brief time. The client can frequently describe the pain, which may subside with or without treatment (Royle and Walsh, 1992). Acute pain however serves a biologic purpose. It acts as warning signal through activation of the sympathetic nervous system which causes the release of catecholamine neurotransmitters, such as epinephrine that gives rise to various physiologic responses similar to those found in fight reaction (Guyton, 1991).

Acute pain is usually confined to the affected area (localized) sometimes resolve with or without treatment after a damaged area heals. Could however lead to chronic pain if the cause is not discovered or not cared for properly (Cheney-Stern, 1995). In addition, acute pain seriously threatens recovery and therefore should be one of the nurses' priorities of care. For example, acute post-operative pain hampers the patient's ability to become mobile and increases the risk of complications from immobility (White, 1995).

Chronic Pain

Chronic pain is prolonged, varies in intensity, and usually last more than six months (Anderson et al, 1987), sometimes lasting throughout life. Onset is gradual and the character and the quality of the pain changes over time. Chronic pain is associated with variety of health problem such as cancer, connective tissue diseases, peripheral vascular diseases and musculoskeletal disorders, posttraumatic problems such as phantom limb pain and low back pain. While it is true that it is a symptom associated with many of the common primary care conditions, it may also occur as a distinct entity. The effects of chronic pain are far-reaching, and are at least as important as its cause. The degree of chronic pain varies depending on the types of problems and whether it is progressive, stable, or capable of resolution. The patient/client with chronic pain often has periods of **remission** (partial or complete disappearance of symptoms) and **exacerbations** (increase in severity). However, chronic pain may be severe and constant i.e. unrelenting. This sort of pain is referred to as **intractable pain**.

Chronic pain presents a major challenge to primary care and since chronic pain persists for extended period, it can interfere with activities of daily living and personal relationship. It stimulates a huge number of prescriptions, investigations and referrals, causes frustration in its resistance to treatment, and leaves patients and doctors with low expectations of successful outcomes. Hence, can result in emotional and financial burdens sometimes leading to psychological depression. Thus, its management requires the effort of an interdisciplinary health care

team otherwise it may become an overwhelming frustrating experience for both the sufferer and the caregiver. While treatment of acute pain tends to focus on its cause, with a view to a cure, treatment of chronic pain must also focus on its effects, with a view to limiting disability and maximizing potential. Assessment and management must be multidimensional and rehabilitative, and agreed, realistic treatment goals are important. The goal of nursing nonetheless must be to reduce the patient's perception of pain and to promote patient's and family adaptation through identification and enhancement of coping strategies (White, 1995; Blair, 2002).

Classification based on Pain Location

Pain may be categorized in relation to the area of the body where it originates.

Superficial Pain – Originates in the skin or mucous membranes. The source usually can be located easily because there are many nerve endings in the affected structures. The patient often describes superficial pain as prickling, burning, or dull.

Deep Pain – Pain emanating from inner body structures. Could manifest with vomiting, blood pressure changes, or weakness. Unlike superficial pain, the patient may have difficulty in pinpointing the exact location of deep pain. It is sometimes referred. Patient more often than not describes it as aching, shooting, grinding, or cramping.

Central Pain – Believed to originate within the brain itself (in the pain interpretation, and/or receiving centers)

Referred Pain – This is pain felt in a location different from the actual origin e.g. pain felt in the scapular region secondary to diseases of the gall bladder.

Phantom Pain – This is used to describe pain felt in an area that has been amputated.

Angina Pain is pain associated with cardiac pathology while **Neuralgia** is an intense burning sensation that follows a peripheral nerve. (Cheney-Stern, 1995)

3.4 Causes of Pain

There are many causes of pain. According to Cheney-Stern, (1995) these causes can be broadly grouped into three viz:

Physical Causes – Physical causes include: Muscle tightness (secondary to muscle spasm and resultant decrease in blood supply to that muscle); disease; infection; trauma; space-occupying lesions (tumor); metabolic factors; burns and temperature extremes.

Chemical Causes – Chemical factors include caustic chemicals and toxins such as alcohol, drugs, cigarettes, and pollution in the air and water.

Psychogenic Causes – That is, originating from the mind and has no identifiable physical cause. Can be as severe as pain from a physical cause.

3.5 Pain Perceptions and Reaction or Response

There are two facets to pain – perception and reaction or response. Pain perception is concerned with the sensory processes when a stimulus for pain is present. The threshold of perception is the lowest intensity of a stimulus that causes the subject to recognize pain. This threshold is remarkably similar for everyone though some authorities have theorized that a phenomenon of adaptation does occur; that is the threshold of pain can be changed within certain ranges (Fuerst, Wolff, & Weitzel, 1974).

While it may be true that there are no specific pain organs or cells, an interlacing network of undifferentiated nerve endings receives painful stimuli. Sensation is transmitted up the dorsal gray horn cells of the spiral cord, then to the spinothalamic tract and eventually to the cerebral cortex. Following pain impulse transmission within the higher brain centers including the reticular formation, limbic system thalamus and sensory cortex, a person then perceives the sensation of pain. However, there is an interaction of psychological and cognitive factors with neurophysiological ones in the perception of pain. Meinhart and McCaffery (1983) described the three interactional system of pain perception as sensory-discriminative, motivational-affective, and cognitive-evaluative. In addition, the Gate Control Theory suggests that gating mechanism can also be uttered by thoughts, feelings and memories. In essence the cerebral cortex and thalamus can influence whether pain impulses reach a person's consciousness. This realization that there is a conscious control over pain perception helps explain the different ways people react and adjust to pain.

Pain Reaction

The reaction or response to pain is concerned with the individual's method of coping with the sensation. This comprises the physiological and behavioral responses that occur after pain is perceived.

Physiological Responses

White (1995) submitted that as pain impulses ascend the spinal cord towards the brain stem and thalamus, the autonomic nervous system become stimulated as part of the stress response. Acute pain of low to moderate intensity, and superficial pain elicit the "flight or fight" reaction of the general adaptation syndrome. Stimulation of the sympathetic branch of the autonomic nervous system results in physiological responses such as: dilation of bronchial tube and increased respiratory rate; increased heart rate; peripheral vasoconstriction (pallor, elevation in blood pressure); increased blood glucose level; diaphoresis; Increase muscles tension; dilation of pupils; and decreased gastrointestinal motility. However, if the pain is unrelenting, severe, or deep, typically originating form involvement of the visceral organs (such as with a myocardial infarction and colic from gallbladder or renal stones), the parasympathetic nervous system goes into action resulting in the following responses: pallor; muscles tension; decreased heart rate and blood pressure; rapid irregular breathing; nausea and vomiting; weakness and exhaustion. Sustained physiological responses to pain could cause serious harm to an individual. Except in some cases of severe traumatic pain, which may send a person into shock, most people reach a level of adaptation in which physical signs return to normal. Thus a client in pain will not always exhibit physical signs.

Behavioral Responses

White paraphrasing the work of Meinhart and McCaffery (1983) on behavioral responses to pain identifies the three phases of a pain experience as: **anticipation, sensation**, and **aftermath**. The **anticipation** phase according to her occurs before pain is perceived. A person knows that pain will occur. The anticipation phase is perhaps most important, because it can affect the other two. In situations of traumatic injury in foreseen painful procedures a person will not anticipate pain. Anticipation of pain often allows a person to learn about pain and its relief. With adequate instruction and support, clients learn to understand pain and control anxiety before it occurs. Nurses play an important role-helping client during the anticipation phase. With proper guidance, clients become aware of the unknown and thus cope with their discomfort. In situation in which clients are too fearful or anxious, anticipation of pain can heighten the perception of pain severity.

She stated further that the **Sensation** of pain occurs when pain it felt. According to her, the ways that people choose to react to discomfort vary widely adding that a person's tolerance of pain is the point at which there is an unwillingness to accept pain of greater severity or duration.

Howbeit, the extent to which a person tolerates pain depends on attitudes, motivation and values.

She noted that pain threatens physical and psychological well-being and that client may choose not to express pain, considering it as a sign of weakness. In her words 'often clients believe that being a good client means not expressing pain to avoid bothering people around them. In addition client may not express pain because maintaining self-control is important in their culture. The client with high pain tolerance is able to endure periods of severe pain without assistance. In contrast, a client with low pain tolerance may seek relief before pain occurs. The client ability to tolerate pain significantly influences the nurse perception of degree of the discomfort. Often the nurse is willing to attend to the client whose pain tolerance is high. Yet it is unfair to ignore the needs of the client who cannot tolerate even minor pain she declared. Typical body movements and facial expressions that indicate pain include holding the painful part, bent posture, and grimaces. A client may cry or moan. Often a client expresses discomfort through restlessness and frequent request to the nurse. However, lack of pain expression does not necessarily mean that the client is not experiencing pain. It is equally important to note that unless a client openly reacts to pain it is difficult to determine the nature and extent of the discomfort.

She submitted that the **aftermath** phase of pain occurs when it is reduced or stopped. Even though the source of discomfort is controlled, the client may still require the nurse's attention. Pain is a crisis. After a painful experience client may experience physical symptoms such as chills, nausea, vomiting, anger, or depression. If there are repeated episode of pain, aftermath responses can become serious health problems. She therefore In concluded that the nurse should help clients gain control and self-esteem to minimize fear over potential pain experiences.

Factors in Pain Perception

Perception of pain is individualized and since pain is complex, numerous factors influence an individual pain experience. Some of these are:

Age – Developmental differences among different age groups can influence hoe children and older adults react to the pain experience. Infants and young children have difficulty in understanding pain and those that have not developed full vocabularies encounter difficulty in verbalizing pain. To help such children, it has been suggested that the nurse employs simple but appropriate communication techniques to enhance their understanding and description of pain. The nurse may

show a series of pictures depicting different facial expressions, such as smiling, frowning, or crying and ask the children to point to the picture that best describes how they feel (White, 1995). School-aged children and adolescents many times try to brave and not give in to pain. Adults' ability to interpret pain may be occluded by the presence of multiple diseases with varied but similar manifestations. Besides, adult may not report pain for various reasons ranging from fear of unknown consequences, fear of serious illness/death, to such erroneous notion as – 'it is not acceptable to show pain'. Aging adults may not feel acute pain because of decreased sensations or perceptions.

Sex/Gender – It is doubtful whether gender by itself is a factor in pain expression. Results of studies comparing pain tolerance in males and females to say the least have been at best confusing. As such the only conclusion that could be safely made is that there are certain cultural factors influencing the effect of gender on pain perception.

Culture – Culture influences how people learn to react to and express pain. People respond to pain in different ways, and the nurse must never assume to know how patients/clients will respond. However, an understanding of the cultural background, socioeconomic status, and personal attributes helps the nurse to more accurately assess pain and it's meaning for patients/clients (Lipton and Marbach, 1984; White, 1995).

Anxiety – The relationship between pain and anxiety is complex. Anxiety often aggravates pain sensation and tense muscle reinforces it while pain may induce feelings of anxiety. White (1995) states that emotionally healthy people are usually able to tolerate moderate or even severe pain better than those whose emotions are labile.

Meaning of Pain – The meaning that a person attributes to pain affects the experience of pain. A person will perceive and cope with pain differently if it suggests a threat, loss, punishment, or challenge (White, 1995).

Fatigue – Fatigue heightens an individual perception of pain i.e. amplifies it and decreases coping abilities.

Previous Experience – Each person learns from painful experiences. If a previous experience was very painful, a person may not feel great pain when the experience is repeated. This probably explains why people who are chronically ill and have almost constant pain often learn to tolerate it.

Attention and Distraction – The degree to which a patient focuses on pain can influence pain perception. According to Gil (1990), increased

attention has been associated with increased pain whereas distraction has been associated with a diminished pain response. This concept is applied in some of the pain relieving interventions (relaxation and guided imagery) employed by nurses.

Family and Social Support – People in pain often depend on family members for support, assistance, or protection. An absence of family or friends tends to make pain experience more stressful. The presence of parent is especially important for children experiencing pain (White, 1995)

Neurological Status – A patient/client neurological function can easily affect the client's /patient's pain experience. For instance any factor that interrupts or influences normal reception or perception will automatically affect client's awareness and response to pain. This explains why patients with spinal cord injury, peripheral neuropathy, multiple sclerosis e.t.c. may experience pain differently from patient with normal neurological function.

SELF ASSESSMENT EXERCISE 2

What are the factors that influence individual's perception of pain?

3.6 Pain Management

On a general note nursing interventions at relieving clients pain can be summarized as follows: understanding the patient; understanding the nature and extent of pain; removing the source of pain and decreasing pain stimuli; offering emotional support; and teaching in relation to pain. Inasmuch as a patient's background is very likely to influence his reaction to pain, a good starting point will be to learn about the patient including his medical history, diagnosis and the physician's plan of therapy. The nature of pain and extent to which it affect physical and psychological well-being is also crucial to determining the choice of pain relief therapies/measures. This, the nurse can establish through good observational techniques and adequate history taking. However, since pain is a complex phenomenon, several treatment options have been developed over the years and it takes a careful selection of the measure beat suited for every particular case but in some cases the much-needed relief is only secured through a combination therapy. The different measures/therapies employed by nurses in the management of pain are however paraphrased below:

Cutaneous Stimulation: One way to prevent or reduce pain perception is through cutaneous stimulation, the stimulation of a person's skin to relieve pain. A **massage, warm bath, application of liniment, hot and**

cold therapies, and transcutaneous electrical nerve stimulation (TENS) are simple measures that provides cutaneous stimulation. Although the specific way in which cutaneous application works is not very clear, some authorities have attributed their action to their inducing the release of **endorphins**, a naturally occurring analgesic substance that blocks the transmission of pain (White, 1995). While others have believed that they relieve congestion or promote circulation and oxygenation, thereby relieving pain (Cheney-Stern, 1995). **Heat** for instance, is said to offer pain relief by increasing blood flow to an area of inflammation or infection. In addition, heat also reduces joint stiffness, relaxes smooth muscles, and reduces peristalsis. Little wonder that it is being employed in the management of some abdominal pain painful infiltrated intravenous sites.

Cold when applied, on the other hand, penetrates the muscle thereby helping to reduce muscle spasm and inflammation. Cold also prevents bleeding and edema through vasoconstriction. Although not the primary treatment for pain cold compresses have been shown to be effective in reducing pain after orthopedic surgery (Bolander, 1994). **Massage** and **back rub** are yet other low cost, safe to use cutaneous stimulation. Massage may lessen pain by relieving congestion and/or promoting circulation and oxygenation, and enhancing muscular relaxation. **TENS** involves stimulation of nerve beneath the skin with a mild electric current passed through external electrodes. The therapy requires a physician's order. TENS unit consist of a battery powered transmitter, lead wires and electrode which are placed directly over or near the site of pain. Hair or skin preparations should be removed before attaching the electrodes. When a client feels pain, the transmitter is turned on. The TENS unit crates a buzzing or tingling sensation. The client may adjust the intensity and quality of skin stimulation. The tingling sensation can be applied as long as pain relief lasts. TENS is effective for postoperative procedure for example, removing drains and cleaning and repacking surgical wounds (Hargreaves, 1989).

Distraction: This technique is more effective with the short, mild pain lasting a few minutes than severe pain, though can be combined with pain medications to enhance pain relief. It is achieved by encouraging the person in pain to focus on a particular image or stimulus other than the painful one. In this way, the person's attention becomes drawn away from the painful stimuli with resultant decrease in perception of such painful stimuli. In some instances, distraction can make client completely unaware of pain. For example a client recovering from surgery may feel no pain while watching a football game on television, only for the pain to resurface when the game is over. An adolescent who feels pain from a fracture foot bone only after he finished playing a basketball game, is yet another example. Therefore, distraction does not

only decrease one's perception of pain but also improve one's mood while giving a sense of control over the painful situation.

In what look like a pathophysiologic approach, White (1995) explained that the reticular activating system inhibits painful stimuli if a person receives sufficient or excessive sensory input. With meaningful sensory stimuli, a person can try to ignore or become less aware of pain. She asserted further that pleasurable stimuli also cause the release of endorphins to relieve pain. This possibly explains why the most effective distraction techniques are those that the individual finds interesting and those that stimulate the senses - hearing, seeing, touching, and tasting. Moving activities are equally useful. For example, children and even adults that are in pains can be made to watch television or listen to favorite music or play indoor games. These activities keep the person occupied leaving no room for boredom, anxiety, loneliness all of which tend to aggravate pain. Furthermore, disturbing stimuli such as loud noise, bright light, unpleasant odour, and argumentative visitor can increase pain perception. Therefore the nurse needs to reduce disturbing stimuli. Some distraction techniques are:

- **Slow rhythmic breathing**: - In slow rhythmic breathing (SRB), the nurse asks the client to stare at an object, inhale slowly through the nose while the nurse counts 1, 2, 3, 4. The nurse encourages the client to concentrate on the sensation of the breathing and to picture a restful screen. This process continues until a rhythmic pattern is established. When the client feels comfortable, he or she can count silently and perform this technique independently.
- **Massage and slow rhythmic breathing**: - The client breathes rhythmically as in SRB but at the same time massages a painful body part with stroking or circular movements.
- **Rhythmic singing and tapping**: - The client selects a well-liked song and concentrate attention on its words and rhythm. The nurse encourages the client to hum or sing the words and tap a finger or foot. Loud, fast songs are best for intense pain.
- **Active listening**: - The client listens to music and concentrate on the rhythm by taping a finger or foot.
- **Guided imagery**: - In guided imagery the patient/client creates an image in the mind, concentrates on that image and gradually becomes less aware of pain. The role of the nurse is to assist the patient/client to form an image and to concentrate on the sensory experience. Asking the patient/client to close his or her eyes and imagine a pleasant scene, and then describing something pleasurable is one way this is achieved.

Relaxation and Guided Imagery

It is an established fact that patients/clients can alter affective-motivational and cognitive pain perception through relaxation and guided imagery. Relaxation per see is mental and physical freedom from tension or stress. However for effective relaxation, the client's cooperation is needed. The nurse describes the techniques together with common sensations that the client may experience in detail. The client uses such described sensations as feedback. The client may sit in a comfortable chair or lie in bed. A light sheet or blanket for warmth tends to help the client feel more comfortable and the environment should be free of noises or other irritating stimuli.

The client may have guided imagery and relaxation exercises together or separately. The nurse, acting as a coach guides the client slowly through the steps of the exercise. The nurse's calm, soft voice helps the client focus more completely on the suggested image, and it becomes unnecessary for the nurse to speak continuously. If the client shows signs of agitation, restlessness or discomfort, the nurse should stop the exercise and begin later when the client is more at ease. Progressive relaxation of the entire body takes about 15 minutes. The client pays attention to the body, nothing areas of tension. Some clients relax better with eyes closed. Soft background music may be helpful. Note that considerable practice is needed to achieve consistent pain reduction and it may take five to ten training sessions before clients can efficiently minimize pain.

Progressive relaxation exercise really, involves a combination of controlled breathing exercises and a series of contractions and relaxation of muscle groups. The client begins by breathing slowly and diaphragmatically allowing the abdomen to rise slowly and the chest to expand fully. When the client establishes a regular breathing pattern the nurse coaches the client to locate any area of muscular tension, think about how it feels, tense muscle fully and then completely relax them. This creates the sensation of removing all discomfort and stress. Gradually the client can relax the muscle without tensing them. When full relaxation is achieved perception is lowered and anxiety towards the pain experience becomes minimal. Relaxation technique provides clients with self-control when pain occurs reversing the physical and emotional stress of pain. The ability to relax physically also promotes mental relaxation. Examples of relaxation technique include medication, Yoga, guided imagery, and progressive relaxation exercises. Relaxation with or without guided imagery relieves tension-headaches, labor pain, anticipated episode of acute pain (for example a needle stick), and chronic pain disorders.

Anticipatory Guidance

The modifying anxiety directly associated with pain, helps in not only relieving pain but also enhancing the effect of other pain relieving measures. This is because knowledge about pain helps client/patient control anxiety and cognitively gains a level of pain relief (Walding, 1991). White, (1995) asserted that it is important to give clients/patients information that prevents misinterpretation of the painful event and promotes understanding of what to expect. According to her, such information includes:

- Occurrence, onset and expected duration of pain
- Quality, severity and location of pain
- Information on how the client's/patient's safety is ensured
- Cause of the pain
- Methods that the nurse and client/patient use for pain relief.
- Expectations of the client/patient during a procedure.

  A typical example of anticipatory guidance is preoperative teaching on incisional pain and methods used to control it. It has been observed that this helps the patient to adapt better postoperatively.

Biofeedback

White (1995) paraphrasing the work of Flor et al. (1983) defined Biofeedback as a behavioral therapy that involves giving individual information about physiological responses (such as blood pressure or tension) and ways to exercise voluntary control over those responses. This therapy is particularly effective for muscle tension and migraine headache. The procedure employs electrodes, which are attached externally. These electrodes measure skin tension in microvolts. A polygraph machine visibly records the tension level for the client to see. The client learns to achieve optimal relaxation, using feedback from the polygraph while lowering the actual level of tension experienced. The therapy takes several weeks to learn.

Acupuncture

Acupuncture literally means "needle piercing." It began with the discovery that stimulating specific areas on the skin via insertion of very fine needles affect the physiological functioning of body's processes. These specific areas/points on the skin are called acupoints. These acupoints are in very specific locations and lie on channels of energy called meridians. It has traditionally been taught as a preventive form of health care, but has also been found useful in the treatment of a variety of acute and chronic conditions. Acupuncture has been used for over

3,000 years in China as a major part of their primary health care system. In modern times, it is used for the prevention of and treatment of diseases, for the relief of pain, and as an anesthetic for surgery. There are various painless, non-needle methods of acupuncture administration, including electrical stimulation, ultrasound, and laser. Acupressure is based on the principles of acupuncture. This ancient Chinese technique involves the use of finger pressure (rather than needles) at specific points along the body to treat ailments such as arthritis, tension and stress, aches and pains, and menstrual cramps. This system is also used for general preventive health care. Shiatsu is a Japanese word that means "finger pressure." Pressure is applied to points in the body using fingers, palms, elbows, arms, knees, and feet, working on the body's energy system. Different techniques are used to relieve pain and release energy blockages.

Pharmacological Management of Pain

Quite a number of pharmacological agents provide satisfactory relief from pain. These agents are generally referred as analgesics ranging from mild to strong analgesics. They stand out as the most widely employed pain-relieving measure and are quite potent. Although most, especially the narcotic analgesics, require a physician's order, the nurse's judgment in the use of medications and management of clients receiving pharmacological therapies help ensure the best pain relief possible. Analgesics can be broadly classified into four groups viz:

- **Non-narcotic Analgesic** – Provides relief for mild to moderate pain. Example includes Paracetamol.

- **Non-Steroidal Anti-Inflammatory Drug (NSAID)** – Just like the Non-narcotic analgesics NSAID also provides relief for mild to moderate pain especially those associated with rheumatoid arthritis, surgical and dental procedure, episiotomies and low back problems. But unlike the Non-narcotic analgesics Non-steroidal anti-inflammatory drugs (NSAIDS) act by inhibiting the action of the enzymes that forms prostaglandin. With less prostaglandin released peripherally, the generation of pain stimuli is blocked. A reduction in pain sensitivity also occurs.

- **Opioids** – Opioids are generally prescribed for severe pain such as malignant pain. Neurotransmitters and opiate receptors are located in the dorsal horn of the spinal cord. Administration of opiates such as morphine results in the opiates binding to receptors and inhibiting the releases of substances P., as a result, transmission of painful stimuli to the spinal cords is blocked. In addition to the above, morphine sulphate and diamorphine

hydrochloride raises the pain threshold and at the same time reduces associated fear and anxiety, thereby reducing pain perception.

- **Adjuvants or Co-analgesics** – These include such drugs as anticonvulsants, antidepressants, and muscle relaxants. Adjuvant analgesics are prescribed for those clients/patients whose pain is less responsive to analgesics alone, usually due to specific co-existing pathophysiology such as neuropathic pain due to nerve compression. The administration of tricyclic antidepressants such as amitriptyline and imipramine creates an analgesic effect, as well as an antidepressant effect. The tricyclic inhibits the normal reuptake of serotonin at nerve terminals. With one serotonin present in nerve terminal, pain transmission is inhibited (Potter, 1993).

Note: As good and effective as the pharmacological management of pain is, it has its own disadvantages. This is because every drug is a potential poison and there is no drug without its adverse effect. This therefore calls for a thorough understanding of the actions, indications, dosages, routes of administration, side effects, and contraindications of each of these drugs for maximal benefit.

4.0 CONCLUSION

Pain is not is easy to define and the varied meaning attached to the word pain is an eloquent testimony of the difficulty inherent in explaining this complex phenomenon. Much of the difficulty encountered in understanding and precisely defining the term is attributable to the subjective nature of pain. Pain is a frequent and important problem in primary care, with far-reaching implications. Since pain is such a common problem faced in all health care settings, and one that not only threatens patient's comfort but also readily incapacitates, no effort should therefore be spared at procuring potent pain relieving measures. Many approaches to management are possible, and a multi-dimensional approach, in discussion with the patient, is the most helpful.

5.0 SUMMARY

Pain could be physical, chemical or Psychogenic in origin. It comprises the components of reception, perception, and reaction. Knowledge of these three components of pain provides the nurse with guidelines for determining pain-relief measures as pain experience is influenced by a variety of variables such as age, gender, culture, anxiety, to mention a few. Eliminating sources of painful stimuli is a basic nursing measure for promoting comfort. The nurse individualizes pain relief measures by

collaborating closely with the patient/client, using assessment findings and trying a variety of interventions. Measures that have proven helpful include: verbally acknowledging the presence of the pain; allowing patients to ventilate their feelings; listening attentively to what the client says about the pain; providing adequate information; conveying an attitude that you care; employing distraction, relaxation and guided imagery, cutaneous stimulation, biofeedback, or analgesic administration as the case may be. Good judgment and due caution are however important before utilizing any of these measures. All said and done, the nurse should not become frustrated when relieve measures fail to fully control pain while being careful not to offer false reassurance.

ANSWER TO SELF ASSESSMENT EXERCISE 1

- Drug abusers and alcoholics overreact to discomfort.
- Patients/Clients with minor illnesses have less pain than those with severe physical illness.
- Administering analgesics regularly will lead to drug dependence.
- The amount of tissue damage in an injury can accurately indicate pain intensity.
- Health care personnel are the best authorities on the nature of the patient's/client' pain.
- Psychogenic pain is not real.

ANSWER TO SELF ASSESSMENT EXERCISE 2

Family and social support, Neurological status, Attention and distraction, Fatigue, Previous Experiences, Anxiety, Culture, Sex/Gender and Age.

6.0 TUTOR-MARKED ASSIGNMENT

Mrs. Jones, a known arthritic and ulcer patient reported at your clinic with complaints of longstanding intermittent pain that is now growing worse. Attempt a classification of pain. What pain relief measures would be appropriate for the nurse to use in the management of Mrs. Jones?

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MODULE 3

UNIT 1 INFECTION CONTROL

CONTENTS

1.0 INTRODUCTION

Infection is the multiplication of micro-organism/infectious agents within the body tissue causing a disease in the host (human and animal).What happens under this circumstance depends on the difference in magnitude between two opposing forces namely: those of infection and the hosts resistance. The outcome is determined by the ability of the micro-organism to adhere, invade and damage the host versus the hosts defence mechanism. It may be severe or mild.

There are various groups of micro organism that interact with human beings to cause infection, these include: bacteria, viruses, fungi protozoa and a parasitic worms. Human beings and animals play host to populations of micro organism which lives on the skin or mucus membrane. The micro organisms that are capable of causing disease are termed pathogens or infectious agents.

Certain aspects of bacteria regularly inhabit different parts of the body where they constitute the normal flora of the area. While some are harmful, others are not but they ensure their survival and growth.

However, since they are circumstantial, a change in the circumstances can make them harmful e.g. flora from rectum and vagina when pushed in can cause infections.

One may then ask if infection control is possible. The answer is simply yes.
In this unit, we shall examine the infection control with the understanding of infection phases, course and chain of infection, predisposing factors as well as nursing interventions of infection control.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- describe the course of infection
- enumerate the chain of events which link the reservoir of infectious agents with the susceptible host
- discuss the factors that predispose one to infection
- analyze the measures for infection control.

3.0 MAIN CONTENT

3.1 Infection Phases

Infection occurs and extends over three (3) identified phases, these are: incubation, acute illness and recovery/convalescent phases.

Incubation Phases

This is the period between the entry of micro organism to the body and the initial clinical manifestation of the infection. At this stage, the micro organism multiplies while the host defense rises up to the challenge to counter the infection.

The host is asymptomatic of the disease but sheds off the infectious agents and may become carriers. When the host overcome the causative organism no obvious signs and symptoms of the disease is apparent only laboratory examinations can detect the host.

Acute Illness Phase

Here, the disease reaches its full intensity due to greater force exerted on the host by the invading micro organism. The duration of the acute illness varies from few hours to weeks and the disease**.**

Convalescence Phase

This is the stage when the clinical manifestation of the disease subsides. Most infectious disease is self limiting and recovery takes place over a short and defined period of time. The prognosis depends on the disease and management while death can occur from some highly virulent diseases or due to complications.

SELF ASSESSMENT EXERCISE 1

1. Mention 5 groups of micro organisms that causes infection
2. Who is a carrier?

3.2 Types and Chain of Infections

The following types of infection are explained below to further assist your understanding of the concept of infection and enhance your practice.

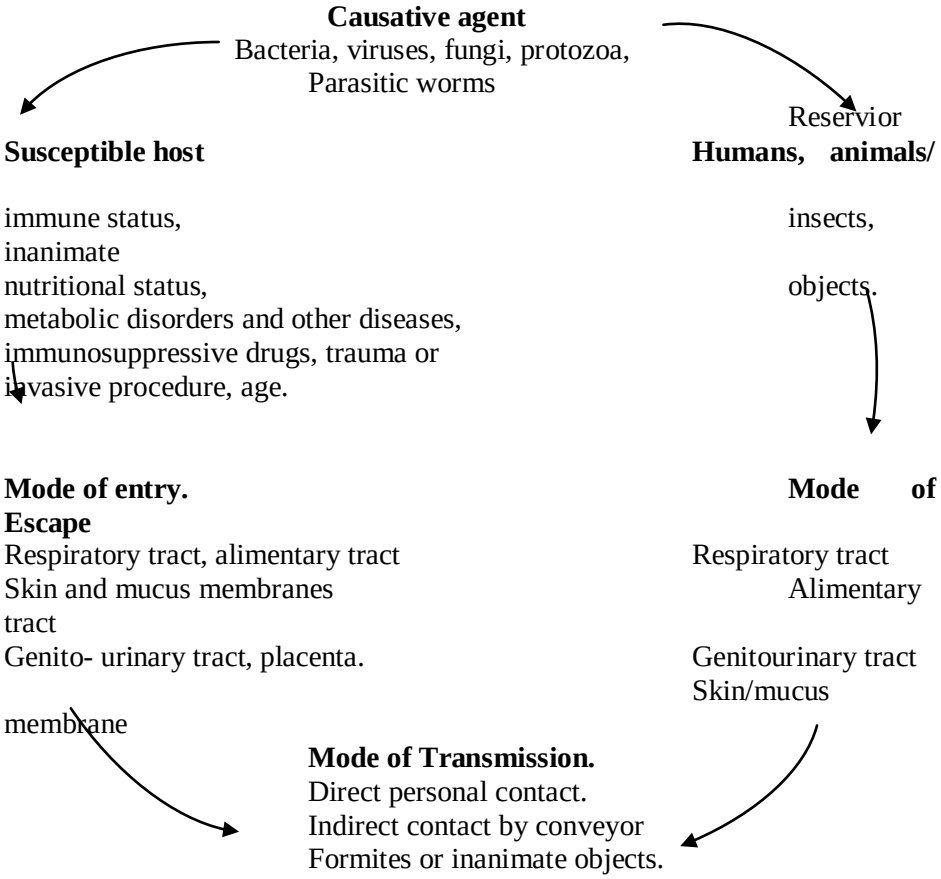
1. **Local Infection:** when infection is confined to an area or spot.
2. Generalized Infection: infection that is disseminated throughout the body.
3. **Focal Infection:** when infection spreads from a confined area to other parts of the body.
4. **Mixed Infection:** when infection is due to more than one type of pathogen.
5. **Primary Infection:** the infection of a host by another type of infection during the course of an infection.
6. Infection may also be sudden (acute) or manifest later with high resultant effects (chronic).

Chain of Infection

Infection results from chain of events which link the reservoir of infection agents with the susceptible host. These are:

- Mode of escape from the reservoir.
- Means or route of transmission.
- Models of entry into the susceptible host.

The chain of event is hereby represented diagrammatically:



***Chain of infection**

3.3 Predisposing Factors to Infection

The manifestation of infection in any host is dependent on the following factors:

i. Age

Children are more vulnerable to infection than adults due to the compromise of humoral and cellular immunity. The changes occur with puberty, pregnancy and menopause which also accounts for diminished resistance to viral infections. The elderly are more susceptible to autoimmune disease and cancer increased with advanced ageing.

ii. Occupation

Certain occupation provides increased exposure to infection than others e.g. industrial, sea and hospital workers

iii. Exposure to Cold

When a man is exposed cold it causes a lowering of the body temperature below normal. This reduces blood supply to superficial tissues and suppresses natural defense mechanism.

iv. Nutritional Imbalance

Protein and caloric undernutirtion is a prevalent cause of impaired cell media led immunity. Without the required nutrients and energy the production of antbodies, lymphocytes and the chemical mediators of the immune response is impaired. There is a decrease in immuno-competence due to excessive intake of cholesterol and fats.

v. Stress

Naturally occurring persistent stress accompanied by poor coping alters the body's immunocompetence. (See unit 8 on stress and adaptation).

vi. Drug and Other Therapeutic Intervention

Some commonly used antibiotics may impair immune functions. All drugs are capable of initiating a hypersensitivity reaction.

vii. Life Style

Life behaviors/style such as smoking, drinking and indolence can precipitate infection.

Activity 2

- Considering the aforementioned factors, did any of the factors applied to you when last you had an infection?
- What precautionary measures did you take?

3.4 Infection Control

Infection control is the effort made to maintain a micro organism free environment. These include:

- Improving and supporting the host defaces through intact skin, mucus membrane and cilia, white blood cells, antibodies and immunizations.

Cilia in the respiratory tract filter the air we breathe in and remove the micro organism which may cause infection. The secreted mucus like

hydrochloric acid (HCL) from Gastro Intestinal Tract is acidic and protective in nature. Proper nutrition rich in proteins, carbohydrate, fats and vitamins should be encouraged as these helps to produce antibodies and enhanced natural resistance against infections. Adequate rest should be observed while appropriate fluid intake helps to wash off micro-organism that have been ingested except where contraindicated, Personal hygiene and environmental care is to be encouraged.

- Destruction of causative organism.

This is usually through the use of drugs. Give prescribed drugs to maintain effective drug concentration. It should be taken as prescribed, find out if the individual is allergic and watch out for side effects as these can throw patient open to further infection.

- Prevention of eh transmission of infective agents to others through isolation, sterilization, barrier nursing, aseptic techniques, ethical asepsis. Quarantine, bed spacing, proper waste disposal, health education, hand washing (soap and running water) to take place before and after carrying out a procedure.

Some of these methods of infection control in bullet three will be explained briefly as follows:

Barrier Nursing: The patient is not isolated in any room but nursed in an open ward screened. Every item being used for him/her is strictly kept with there and used exclusively for him/her.

Isolation: A separate room or cubicle is reserved for the patient where s/he is nursed. This is usually done in conditions that are infectious like Tuberculosis.

Sterilization: It is a process by which all microorganisms including spores are destroyed completely. There is no half measure as an item is either sterile or not. It is achieved by subjecting the material either to heat, chemical, gamma, irradiation or gases. Sterilization can be physical or chemical.

Physical Sterilization: It is usually accompanied by use of dry heat and radiation. These alter the internal function of the organism thus rendering them inactive. The most common method under this is dry and wet heat. Dry heat (as in oven) will kill organism by oxidation process while moist heat (steam) co-agulates protein within the cell. Sterilization becomes effective when the heat is sufficient to destroy the micro-organism.

Radiation: Non-iodizing and ionizing radiation are used for physical sterilization and disinfection. They cause the death of microorganism by altering their essential metabolic processes. The most common type of non-ionizing radiation is the ultra violent rays. Ionizing radiation is used for pharmaceuticals, foods, plastic and other heat sensitive items.

Chemical Methods/Sterilization: Chemical sterilization implores liquid solutions/gases. Objects to be sterilized are immersed in a solution or exposed to fumes in a chamber for a specified time. Examples of this include Ethylene Oxide, Chlorine compounds, Hibitane lotion, Polyvidone Iodine and Methylated spirits.

SELF ASSESSMENT EXERCISE 2

1. Give 3 examples each of physical and chemical method of sterilization.
2. What is the major difference between barrier nursing and isolation?

Assignment: Visit your preceptor/clinical area and observe the methods of infection control. Find out who is responsible for the control and at what level.

3.2 Nursing Intervention at Every Infective Stage

The nursing intervention at every infective stage stems from assessment, planning and evaluation. There are five (5) potential problems relevant to most patients with infections. These include:

(vii) physical and social isolation
(viii) altered nutrition
(ix) alteration in comfort
(x) Maintaining functioning of others body systems.
(xi) Alteration in self management.

Reading Assignment: *Read this further in the recommended textbook and discuss within your study group.*

4.0 CONCLUSION

The development of infection of dependent on the nature of the interaction between the host and microbial agent. The stages of infection are seven fold and the knowledge of factors influencing the

interaction of the host and microbial agent has led to more effective preventive/control measures.

While remarkable progress is been made to control infection, the place of health education cannot be overemphasized. Hospital should have in place an infection control policy for the prevention and transmission of infection.

5.0 SUMMARY

This unit presented an overview of infection control with particular reference to infection phases, types and chains of infection, predisposing factors and nursing intervention at every infective stage.

ANSWER TO SELF ASSESSMENT EXERCISE 1

The 5 group of micro-organism are: bacteria, viruses, fungi, protozoa and parasitic worms.

A carrier is one who has no symptom of a disease but harbours the infectious agent.

ANSWER TO SELF ASSESSMENT EXERCISE 2

1. Dry heat, Radiation and Steam. (Physical). Liquid solution/gases e.g. Ethylene Oxide, Chlorine Compounds, Hibitane Lotion and Metylated Spirits. (Chemical).
2. Nursing a patient in an open ward while every item being used for him or her is strictly kept and use exclusively for him/her.

6.0 TUTOR-MARKED ASSIGNMENT

What are nosocomial infections? Identify eight (8) ways of controlling nosocomial infections?

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UNIT 2 ETHICAL ISSUES IN NURSING

CONTENTS

1.0 INTRODUCTION

In the last unit, we examined sexuality and gender in relation to nursing practice. Two major factor that influences sexual attitudes a re biological and personality which are determinants of individual sex roles. These are ethics in nursing practice which provides for confidentiality of care of patient. Ethics is a science of morals. It stipulate standard of behaviour and values relating to human conduct. It starts from childhood experiences, taught and learned from home, religious beliefs and standard of conduct. One is governed by an individual ethical code, professional code and the affirmation duties imposed by the Law. Nursing profession is guided by both ethical and legal concerns as it is the tool for professional discipline which gives the nurse a broad idea of what is expected of her as she moves from the protective atmosphere of school into the society. Ethics of any profession imposes some responsibilities on its members and consequently the recipient of a professional service has his/her rights to be protected.

This unit will examine the ethical issues in nursing practice considering the history of nursing ethic, development of nursing codes of conduct, ethical concepts applied to nursing, Patients Bill of Rights, and the interrelationship of ethics and Law.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- enumerate the elements in Patients' Bill of Rights that has ethical concerns

- identify the differences between ethical and legal concerns of nursing practice
- describe clients' expectation which has implications in the face of professional negligence.

3.0 MAIN CONTENT

3.1 History of Nursing Ethics

Many books on nursing ethics in the past have in larger part restricted their content to professional etiquette. In 1900, Robb one of the early nursing leaders wrote on a breach of etiquette, but her comments reflect the sociology of the situation, including difference in role, function and status. She remarked that occasionally we find a nurse who, through ignorance or from an increase of her self – conceit and an exaggerated idea of her importance, may overstep the boundary in her relationship with the doctor and commit some breach of etiquette. The implication of this does not rest with the nurse alone, but also her school and the profession comes under share of criticism and blame. Aikens (1937) observed the nursing ethics as old-fashioned virtues and this includes truth in nursing reports, discreetness of speech, obedience being teachable, and respect for authority, discipline and loyalty. The master and servant relationship between Physician and Nurses also expresses another angle of nursing ethics in 1943. Nurses were subservient to the hospital which employed them and the hospital becomes responsible for her acts. With this arrangement, any disobedience to the Physician's order is not only a matter of professional etiquette but a violation of the employee contract. During such times, even when the physician is mishandling the patients treatment, the nurse must either continue to carry out his orders or give up the case. This was more private duty nursing practice.

Many of the early ethics books delved into the private life and morality of nurses, reflecting the status of nursing students in an apprenticeship system and the stereotype of the intellectually and morally weak women. Such concerns focused on the individual's morality, and the nurses duties, obligations, and loyalties referred to a situation in which nurses were on the one hand, expected to exhibit a dedication of almost a religious nature while on the other hand, their morality was open to suspicion.

SELF ASSESSMENT EXERCISE 1

Clearly differentiate between ethics and etiquette.

3.2 Development of Nursing Codes of Conduct

The code of conduct for nursing practice has spanned from decade to decade with specific moderations. In order to provide one means of professional self-regulation, the America Nurses Association (ANA) revised its code of ethics, which had originally been adopted in 950. The Code of Nurses (1976) indicated the nursing professions acceptance of the responsibility and trust with which it has been invested by society. The requirement of the Code may often exceed, but are not less than, those of the law. While violation of the law subjects the nurse to criminal or civil liability, the Association many reprimand, censure, suspends or expels members from the Association for violation of the code. The interpretive statements that accompany the ANA code outline the ethical principles that underpin each section of the code.

Code of conduct for Nurses

- The nurse provides services with respect for human dignity and the uniqueness of the client unrestricted by considerations of social or economic status, personal attributes or the nature of health problems.
- The nurse safeguards the client's right to privacy by judiciously protecting information of a confidential nature.
- The nurse acts to safeguard the clients and the public when health care and safety are affected by the incompetent, unethical, or illegal practice of any person.
- The nurse assumes responsibility and accountability for individual nursing judgments and actions.
- The nurse maintains competence in nursing.
- The nurse exercises informed judgments and uses individual competence and qualifications as criteria in seeking consultation, accepting responsibilities and delegating nursing activities to others.
- The nurse participates in activities that contribute to the ongoing development of the professions' body of knowledge.
- The nurse participates in the professions efforts to implement and improve standards of nursing.
- The nurse participates in the profession's efforts to establish and maintain conditions of employment conducive to high – quality nursing care.
- The nurse participates in the professions' efforts to protect the public from misinformation and misrepresentation and to maintain the integrity of nursing.

- The nurse collaborates with members of the health professions and other citizens in promoting community and national efforts to meet the health needs of the public.

SELF ASSESSMENT EXERCISE 2

a. The mother of an AIDS patient knows that her son is seriously ill but does not know the diagnosis. One day, she asks the nurse if he is dying saying she's afraid he has Leukemia. What should the nurse do?
b. Discuss your opinion with others and check it in line with the code of conduct for nurse number 2.

3.3 Ethical Concepts Applied to Nursing

The fundamental responsibility of the nurse is fourfold: to promote health, prevent illness; restore health and alleviate sufferings.

The need for nursing is universal. Inherent in nursing is respect for life, dignity and rights of man. It is unrestricted by considerations of nationality, race, creed, age, politics or social status.

Nurses render health services to the individual, the family, and the community and co-ordinate their services with those of related groups. The International Council of Nurses in Geneva updated its code of ethics in 1977 and it includes:

- **Nurses and People**

The nurse's primary responsibility is to those people who require nursing care, the beliefs, values, and customs of the individual.

The nurse holds in confidence personal information and uses judgement sharing this information.

- **Nurses and Practice**

The nurse carries personal responsibility for nursing practice and for maintaining competence by continual learning.

The nurse maintains the highest standards of nursing care possible within the reality of a specific situation.

The nurse uses judgement in relation to individual competence when accepting and delegating responsibilities.

The nurse when acting in a professional capacity should at all times maintain standards of personal conduct that would reflect credit upon the profession.

- **Nurses and Society**

The nurse shares with other citizens the responsibility with co-workers in nursing and other fields.

The nurse takes appropriate action to safeguard the individual when his care is endangered by a co-worker or any other person.

- **Nurses and the Profession**

The nurse plays the major role in determining and implementing desirable standards of nursing practice and nursing education.

The nurse is active in developing a care of professional knowledge.

The nurse, acting through the professional organization, participates in establishes and maintaining equitable social and economic working conditions in nursing.

3.5 Patients Bill of Rights

2 Bill of Rights developed include:

- A patient's bill of right developed by the American Hospital Association in 1973.
- A Consumer Rights in health care published in Canada by the National Consumers Association.

Patient's Bill of Rights states the following:

- The patient has the right to considerate and respectful care. He has the right to an explanation to what is happening.
- The patient has the right to obtain from his physician complete current information concerning his diagnosis, treatment and prognosis. When consider not appropriate tell his/her relation.(see the box below).
- Patient has the right to receive from his physician information necessary to give informed consent prior to the treatment of everything to be done on them except in emergencies.
- Patient has the right to refuse treatment to the extent permitted by law and be informed of the medical consequences of his action. He should not be forced but the authority must be informed.

- Patient has the right to every consideration of his privacy concerning his own medical programes.
- Patient has the right to expect that all communications and records pertaining to his care should be treated as confidential.
- Patient has the right to expect that within its capacity a hospital must take reasonable response to the request of a patient for service.
- The patient has the right to be advised if the hospital propose to engage in or perform human experimentation affecting his care or treatment.
- Patient has the right to expect reasonable continuity of care.
- Patient has the right to examine and receive an explanation of his bill regardless of source of payment.
- Patient has right to be informed of hospital rules and regulations applied to his conduct as a patient.
- A disabled person has the right to treatments.
- A disabled person has the right to economic and social security and to a decent level of living.
- A disabled person has the right to live with their families and participate in all activities.
- A disabled person shall be protected against all exploitations.
- A pregnant woman has the right to explanation on any care to be carried out on her and the risks involve affecting her and the baby in the womb.
- The pregnant patient has the right to be accompanied during the stress of labour for and who cares for her.
- The obstetric patient has the right to be informed in writing of the name of the person who actually delivered her baby.

In given out information to patient as stipulated in the Rights consideration should be given to:

1. Who gives what information?
2. To whom is the information given?
3. When is it appropriate to give it?

Activity 1

Quickly recap eight (8) of the Bill of Rights off hand. Of what use is information to the nurse and patient?

3.7 Interrelationships of Ethics and Law

Ethics and Law interface in any nursing practice and administration. Smith and Davis (1980) identified four (4) situations in which ethics and law interface.

1. That which is ethical is legal e.g. informed consent.
2. That which is ethical is illegal e.g. euthanasia (see unit 14).
3. That which is unethical is legal e.g. abortion.
4. That which is unethical is illegal e.g. involuntary medical treatment in non emergency situations.

Two of the situations are congruent and two are conflict.

SELF ASSESSMENT EXERCISE 3

1. Mention 2 congruent situations:…….
2. Mention 2 conflict situations:……...

N.B. *If you are in doubt, check for the meaning of Congruent and Conflict in the Advanced Learners Dictionary (ALD) before attempting the exercise.*

The following statement serves to put the four situations in proper perspectives:

- The conflict between ethical and illegal and unethical and legal will probably always be with us. Ethical cannot be bound by the law when ethical considerations override legal ones. Law cannot be held hostage to ethics in the sense that a law cannot be enhanced to control every immoral act. Therefore the nurse as patient care administrator must expect this tension between ethics and law.
- The role of the institutional lawyer and that of the nurse as patient care administrator may conflict. A nurse care administrator can recommend that a health care institution hire additional lawyers as advocates for patients. This option provides a balanced perspective.
- Lawyers use basic tenets in formulating laws, and ethicist use laws or court decisions as part of their database in arriving at morally justified decisions. Ethics is not the final determinant of law, and the law is not the final determinant of ethics.
- A reasonable compromise or acquiescence to a majority decision by the nurse and lawyer may be in the overall best interest of all.

The standards of care and of professional performance help nurses as patient care administrators ensure that they are creating and maintaining a professional nursing system within their health care settings. Standards of professional performance are not static; they reflect changes in society, technology and the professions. Nursing's reflection of these changes, however, must always be a responsible one that ultimately is accountable to ethics, law and the society contract between nursing and society.

4.0 CONCLUSION

Both nursing and ethics are in state of profound transition. Regarding nursing, the scope of nursing practice and the ways in which nurses are reimbursed for their care are changing with ethics. During the past several decades, classical ethical theories and associated principles dominated. Today, feminist ethics and the ethics of care are coming into their own. Both are transformative ethics which are best articulated and developed from the outset with a keen awareness of multicultural and global perspectives in a search for and an understanding of a common humanity. A detailed lecture on Nurse and the Law in this course will further shed light into the legal implications of nursing practice and consequences of neglect or negligence since the code of nursing practice maintains that the primary ethical obligation is to the patient.

5.0 SUMMARY

This unit has examined extensively the Ethical issues in Nursing with clear definition of nursing codes of conducts, ethical concepts applied to nursing, Patients Bill of Rights, and the interrelationships of ethics and the Law to guide the nurse in the discharge of her nursing roles to the clients.

ANSWER TO SELF ASSESSMENT EXERCISE 1

Ethics are virtues and rules governing practice. Etiquettes deals with respect to constituted authority.

ANSWER TO SELF ASSESSMENT EXERCISE 2

Alley her fears, be sympathetic and empathetic, Use your observed signs to counsel her and provide full participation through answering of questions.

ANSWER TO SELF ASSESSMENT EXERCISE 3

Congruent situations are 1 and 4. While Conflict situations are 2 and 3.

6.0 TUTOR-MARKED ASSIGNMENT

List the fourfold fundamental responsibility of ethical concepts for nurses. Briefly state the International Council of nurses' code of ethics.

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UNIT 3 LEGAL ASPECTS OF PROFESSIONAL NURSING I

CONTENTS

1.0 INTRODUCTION

We live in a changing world and nothing is really static. Indeed the only thing that is permanent in life is change. It is therefore an open truth that the wind of change is blowing over every aspect of life including nursing professional practice. There are changes in orientation and standards of practice. The present unit therefore aims at introducing learners to the legal framework of nursing with a view to broadening the learner's horizon on legal intricacies in nursing practice.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- describe the legal framework and how laws are adapted
- discuss the impact of law on nursing practice
- enumerate legal responsibilities of nurses in delivering client care
- explain legal concepts that apply to nurses.

3.0 MAIN CONTENT

3.1 Nature of Law

Right from creation, every society, primitive or civilized, is governed by a body of rules which members of the society regard as standards of behaviour. It is when such rules involve the idea of obligation that they

become law. As such laws can be defined as those standards of human conducts established and reinforced by the authority of an organized society through its government. Bernzweig (1996) defined it as 'those rules made by human, which regulate social conduct in a formally prescribed and legally binding manner'.

3.2 The Sources of Nigerian Law

Nigeria laws has its origin primarily from two sources namely:

a) Nigerian Legislation, which consist of:

- **Customary Laws –** This consist of customs accepted by members of the community as binding among them. Can be broadly classified into **Ethnic** (i.e. Non-Moslem) customary law and Moslem or **Sharia** law.

- **The Constitution** – This is an embodiment of principles upon which any state (i.e. nation) is governed. A document written or unwritten containing a body of rules that specifies the functions of different organs of government and their interrelationship with each other for the purpose of good governance. All other laws take their validity from the constitution. As such the constitution is believed to be supreme to all other laws.

- **Judgments of Courts (Judicial Precedents)** – Decisions of the court of law. Judgments passed by courts of law usually serve as precedent for deciding similar cases in future (Decisional Laws). This principle of following precedent in settling legal tussles is known as the doctrine of '*Stare Decisis'* meaning to stand as decided or previous decision stands.

- **Statutes (Statutory Law)** – Decisions made by legal democratic institutions whether at National, State or Local level. They are laws enacted by the legislative arm of government and are usually politically inclined. Nigerian statutes include: (i) Ordinances (ii) Acts (iii) Law (iv) Decrees (v) Edicts.

- **Rules and Legislation (Administrative Law)** – These are promulgated by groups who are appointed to governmental administrative agencies, and who are entrusted with enforcing the statutory laws passed by the legislature.

(b) Received English Law, which encompasses:

- **Common Law –** Historically, these are laws made common to the whole of England and Wales after the Norman Conquest of 1066 and which following its full establishment was imported to all British colonial territories, Nigeria inclusive. With the passage of time the common law became so stringent, harsh and crafty so much that justice could not be done in all cases. This inability of the common law to render fair decisions in all cases provoked the emergence of Equity.

- **The Doctrine of Equity –** Body of rules or principles laid down in the court of Chancery before 1873 that are intended to supplement the common law by providing new rights and new remedies and by ameliorating the common law where this was too rigid, harsh and inflexible. Its emergence tremendously contributed to the fairness of court decisions in England and her colonial territories.

- **Statutes of General Application in force in England on January 1, 1960**.

- **Statutes and subsidiary legislation on specified matters**.

Types of Nigerian Laws/Classification of Nigerian Laws

Nigerian laws can be broadly classified into three main categories viz:

Public Law – Public law refers to the body of law that deals with relationships between individuals and the government and governmental agencies. The different types of public law are outlined below:

(a) Constitutional Law – The laws of the federal republic of Nigeria is set forth in the Nigerian constitution.

(b) Administrative Law – The Nurse Practice Act, The Pharmacy Law, Food and Drug Administration and Control Act e.t.c, are all examples of administrative laws.

(c) Criminal Law – These are sets of rules or statutes, which deals with how a society as a whole should behave. Criminal law addresses acts against the safety and welfare of the public. That is criminal offence is against the state. Prosecution is therefore by the state represented by the Commissioner of Police or Director of Public Prosecutions or Attorney General. Note that an individual can occasionally institute a criminal action in the

court. The objective is to convict by the way of fine, imprisonment or both or death. The prosecutor however has to prove the guilt of the accused beyond all reasonable doubt. Perhaps it should be added that an accused cannot agree with the state to withdraw a criminal case already in court but the Attorney General can enter '*Nolle Prosequi*' and thereby withdraw the case from court (Babajide, 2001).

(c) Civil Law – The phrase 'civil' has several meanings. It may be taken to mean a branch of the law of a country that governs the relations that exist between citizens themselves i.e. concerned with the protection of individual rights of members of society. It may even be viewed as laws made to direct the affairs of workers and government functionaries i.e. Government Order. Call it civilian law and one may not be wrong as the word civil to those in the armed forces denotes anything that is not peculiar to the military. Civil laws therefore encompass all laws that deals with crimes against a person or persons in such legal matters as contracts, torts, mercantile law, and protective/reporting law. Most cases of malpractice fall within the civil law of torts. Civil wrong is a breach of individual's right (Martin, 1998; Flight, 1993).

The individual who brings a civil action in court is called a plaintiff while the person for whom action is brought against is known as the defendant. The whole essence of civil suit is to compensate the victim of the civil wrong complained about. The standard of proof in civil cases is based on balance of probabilities. And unlike the criminal case, civil suit can be withdrawn from the court by the parties and be settled out-of-court.

(d) Customary Law – As earlier mentioned these are customs (written or unwritten) that are accepted by members of the community as binding among them. Can be broadly classified into **Ethnic** (i.e. Non-Moslem) customary law and Moslem or **Sharia** law. The ethnic customary law is indigenous and applies to members of a particular ethnic group. The Sharia law on the other hand is a religious law. It is based on Islamic injunction or Islamic doctrine and has its own principles which are Islamic oriented. It is basically applicable to members of the Islamic faith.

3.3 Functions of Law in Nursing and Legal Responsibilities of Professional Nurses

Functions of the Law in Nursing

Kozier, et.al. (2000) declared the following as the functions of law in nursing:

(e) It provides a framework for establishing which nursing actions in the care of clients are legal.
(f) It differentiates the nurse's responsibilities from those of other health professionals.
(g) It helps establish the boundaries of independent nursing action.
(h) It assists in maintaining a standard of nursing practice by making nurses accountable under the law.
(i) It serves as a professional update of client's/patient's legal right.

Legal Roles of Professional Nurses

Nurses have three separate, interdependent legal roles, each with associated rights and responsibilities as provider of service, employee or contractor for service, and citizen (Kozier, et.al. 2000)

Provider of Service – The nurse is legally responsible to ensure that the client receives competent, safe, and holistic care. To ensure this and to avert possible liability nurses are expected to:

- Render care based on their education, experience and circumstances. The standard of care by which a nurse acts or fails to act are legally defined by the nurse practice acts and by the rule of reasonable and prudent action i.e. what a reasonable and prudent professional with similar preparation and experience would do in similar circumstances.
- Discuss with the client the associated risks and outcomes inherent in the plan of care as well as alternate treatment modalities.
- Maintain clinical competence and refuse to carry out orders that would be injurious to client.
- Document the care the client receives and other significant events affecting the client. (Kozier, et.al. 2000; Martin, 1998).

Employee or Contractor for Service – In all nurse-patient relationships, the nurse holds the patient/client a duty of care. Personal inconvenience and personal problems are not legitimate reasons for failing to fulfill this contract whether as an independent practitioner or as an employee. The nurse employed by a hospital functions within the policies of the employing agency. According to Kozier, et.al. (2000),

this type of legal relationship creates the ancient legal doctrine known as **respondeat superior** ('let the master answer'). In other words the master assumes responsibility for the conduct of the servant (employee) and can also be held responsible for malpractice by the employee. This doctrine does not however imply that the nurse cannot be held liable as an individual nor does it exonerate her in cases where her actions are extra-ordinarily inappropriate, that is beyond those expected or foreseen by the employer. In a nutshell, the nurse has obligation to her employer, the client, and other personnel.

Citizen – The rights and responsibilities of the nurse in the role of citizen are the same as those of any individual under the legal system. Rights are privileges or fundamental power to which an individual is entitled unless they are revoked by law or given up voluntarily; responsibilities are obligations associated with these rights. An understanding of these rights and responsibilities associated with them will therefore promote legally responsible conduct and practice by nurses (Kozier, et.al. 2000).

3.4 Regulation of Nursing Practice in Nigeria

The Nursing and Midwifery Council of Nigeria established by decree 89 of 1979 and variously amended by decree 54 of 1988, decree 18 of 1989 and decree 83 of 1992, is saddled with the responsibility of regulating nursing practice in Nigeria. This specifies the functions and administration of the nursing and midwifery council of Nigeria. The major functions include: Registration, regulation of professional standard, training and discipline.

3.5 Contractual Arrangements in Nursing

Nature of a Contract: A contract may simply be defined as a legally binding agreement (oral or written) between two or more competent persons, on sufficient consideration (remuneration), to do or not to do some lawful act. Implicit in this definition is that an agreement between two or more parties is of the essence of a contract. Consequently the general principle is that no party can derive any benefit from a contract or have any obligation imposed on him by it unless he is a party to the contract. A contract then, is the basis of the relationship between a nurse and an employer. Contract may be implied or expressed. A contract is considered to be expressed when the two parties discuss and agree orally or in writing to its terms, for example, that a nurse will work at a hospital for a stated length of time and under stated conditions. An implied contract on the other hand, is one that has not been explicitly agreed to by the parties but that the law nevertheless considers to exist. For instance in the contractual relationship between the nurse and the

patients, the patients have the right to expect that the nurse caring for them have the competence to meet their needs. The nurse also has the associated right to expect the patient to provide accurate information as required (Kozier, et.al. 2000). It is important to mention at this juncture that it is not all agreement that one enters into that is legally binding.

The following are few examples:

- A gentle man's agreement.
- Agreement between family and friends relating to purely social or domestic matters.
- An agreement to marry commonly known as engagement.
- Agreement made under duress.

Essentials of a Contract: A valid contract requires the following five elements

- Offer
- Acceptance – the assent of the parties/persons involved.
- There must be a valid consideration or something of value, in most cases financial compensation for fulfilling the terms of the contract.
- The parties to the contract must have contractual capacity i.e. must be of legal age and must possess mental capacity to understand the requirement of the contract.
- Intention to enter into a legal relationship which in most cases are presumed by the parties' conducts, must be manifestly seen.

4.0 CONCLUSION

5.0 SUMMARY

The unit opens with a succinct background to the need for nurses to become conversant with legal concepatients affecting the practice of nursing. It portrays laws as rules made by human, which regulate social conduct in a formally prescribed and legally binding manner. That is law defines and limit relationships among individuals and the government. The unit contends that Nigerian laws are from two major sources: Nigerian legislation and Received English laws, and they can be classified into three broad groups namely: Public law, Civil law and Customary law.

Furthermore, the unit presents a synopsis of the functions of law in nursing which include providing a legal framework.

6.0 TUTOR-MARKED ASSIGNMENT

Outline the need for Law in professional practice today and the legal responsibilities of a professional nurse. Discuss the concept of contractual agreement in Nursing.

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UNIT 4 LEGAL ASPECTS OF PROFESSIONAL NURSING II

CONTENTS

1.0 INTRODUCTION

One of the direct consequences of the changes in life patterns talked about in the preceding unit is that, the employers and clientele now expects a level of excellence of practice from the professional. The public also becomes better informed than ever about their rights. This in addition to the subtle but complex legal relationship that is in existence in many countries of the world therefore demands that a nurse has an understanding of basic legal concepatients as they affect the practice of her profession.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- explain legal concepatients that apply to nursing
- identify areas of potential liability in nursing practice and actions nurses can implement to avoid these problems
- differentiate between unprofessional conduct and negligence
- distinguish between tort and crime
- explain the role of the nurse in the informed consent process.
- discuss how privileged communication applies to the nurse-client relationship
- discuss advance directives and differentiate between living will, directive to physicians, and durable power of attorney.

3.0 MAIN CONTENT

3.1 Selected Legal Aspects of Nursing Practice

(a) Confidential Communication

Medical and nursing practice is built on a relationship of trust and confidence in which the patient might disclose many things of confidential nature, which this undertakes to regard as a professional secret. It is not uncommon to find such privileged information to be given to a professional nurse who is forbidden by law not to divulge without the consent of the patient who provided it This relationship is imperative if the patient is not going to be afraid to seek advice from the nurse and if nurses are to be free to ask any question that they consider to be germane to the management of the patient. This rule is also entrenched in the nurses' code of ethics, which states that – *The nurse safeguards the individuals' right to privacy by judiciously protecting information of a confidential nature, sharing only that information relevant to his care.*

There are however exceptions to this rule. And that takes us to the question – when can we divulge such information?

(i) When compelled by the law: – Courts

- Notifiable diseases
- Vital statistics such as births and deaths

(ii) With the consent of the patient.
(iii) Where there is a public duty of disclosure, for example armed robbery cases or in a forensic case; an epileptic patient who may be a driver; or in a case of child or elder abuse.
(iv) Where the interest of the health personnel requires it, for instance patients refusal to pay bill.

(b) Informed Consent

The law has long recognized that individuals have the right to be free from bodily intrusions. This perhaps informs the inculcation of informed consent into medical practice. The doctrine of informed consent not only requires that a person be given all relevant information required to reach a decision regarding treatment but also that the person be capable of understanding the relevant information regarding various treatment modalities so that the consent can be truly an informed process. Therefore, informed consent can be described as an agreement by a client to allow a course of treatment or a procedure to be carried out on

him after complete information, has been provided to him by a health care provider, including the risks of such treatment and facts relating to it.

There are basically two types of consent: *express* and *implied* **Express consent** may either be oral or verbal. **Implied consent** is an assumed consent and it exist when the individual's non-verbal behavior indicates agreement. Examples of implied consent include:

- Tubal ligation in a grand multiparous woman whose attitude suggest acceptance of procedure.
- During surgery when additional procedures are needed that are consistent with the procedure already consented to.
- When clients continue to participate in therapy without removing previous consent.

Obtaining an informed consent for a medical or surgical procedure is the responsibility of a physician although this responsibility is delegated to nurses in some agencies. The nurses' responsibility is to witness the giving of informed consent for medical procedure. This involves the following:

- Witnessing the exchange between the client and the physician
- Establishing that the client really understands i.e. was really informed.
- Witnessing the signature.

In addition, nurses may play a role in decision-making through teaching, counselling, and clarifying issues with the patient but should not be made to provide medical information. This said, there are instances where the nurses themselves have to assume the responsibility of obtaining informed consent, especially when the procedure to be performed is purely nursing like passing a nasogastric tube, medication administration, and so on and so forth.

There is a common misconception that only written consent is legal or valid. On the contrary, oral consent is equally binding. Furthermore, the fact that consent is written is not the proof that the consent is informed or valid, but it can be a useful evidence that a discussion between the nurse/doctor and the patient/client took place. In fact written consent can give a false sense of reassurance especially when the wordings of such consent are vague and meaningless. Therefore the legal issue in litigation is precisely what the client was told and not the procedural aspects of signing the form. What then are the essential elements of an informed consent?

- The consent must be given voluntarily, not coerced.
- The client must be of age of maturity and must be mentally competent.
- The client must be given enough information to be ultimate decision maker.

Sometimes, the amount and type of information required for a client to make an informed decision can be challenging. Kozier et.al. (2000) gave the following as general guidelines:

- The purposes of treatment
- What the client can expect to feel or experience
- The intended benefits of treatment
- Possible risks or negative outcomes of the treatment
- Advantages and disadvantages of possible alternatives to the treatment (including no treatment).

It should also be noted that it is not in all cases that consent is required. Outlined below are instances when consent may not be required:

- **Prisoners –** No legal right in court
- **On a court order –** If the court orders that certain procedures be carried out on a client.
- **Immigrants –** Screening procedure to ensure safety of citizens.
- Milk and Food Handlers- Screen procedures for the health of the generality of people.

(c) Controlled Substances

In Nigeria like any part of the world, the law of the nation regulates the distribution and use of controlled substances such as narcotics, stimulants, e.t.c. Misuse of controlled substances therefore attracts criminal penalties. The law also requires that record be kept on dispensing narcotics. Hence the wisdom behind keeping these substances in double locked cupboards in most hospitals with special logbook for documenting their administration?

(d) Advance Directives

Lowe (1995) expressed that to preserve a patient's rights, all healthcare workers need to be aware of patient's wishes regarding continuing, withholding, or withdrawing treatment in the event the patient cannot make these decisions for himself or herself. Caulfield (1995) quoting the Omnibus Reconciliation Act of 1990 tagged Patient Self Determination Act defines an advanced directive as a written instruction such as a

living will or durable power of attorney for health care, that is recognized under state law and is related to the provision of such care when individual is incapacitated. Consequently, there are three types of advance directives viz:

- **A living Will –** This a written and legally witnessed document prepared by a competent adult instructing health workers to withhold or withdraw life-sustaining procedures in a person in event of the person's incapacitation or becoming unable to make decisions personally.

- **Durable Power of Attorney (Health Care Proxy) –** This is an authorization that enables a competent individual to name someone to make medical decisions for him/her in the event the individual is unable to make those decisions. This designated person does not necessarily be a relative.

- **Advance Care Medical Directive –** This is also a document made by the client in consultation with the physician and other advisors that authorizes the physician to be the decision maker in matters concerning his/her medical care. The physician must also agree in writing, to accept to be the client's agent.

What are the nurses' responsibilities in advanced directives?

- Understand the different types of advanced directives.
- Know the laws relating to the patient Self-Determination Act.
- Obtain assistance if the patient wishes to change an advanced directive, as the person's health or desires change.
- Teach patient so informed decisions can be made.
- Inform patients that they have the right to refuse treatment or can refuse life-prolonging treatment but still receive palliative care and pain control. (Caulfield, 1995).

3.2 Liability in Nursing Practice

The term liability actually connotes a sense of obligation or legal responsibility one incurs for one's acts (or inaction) including financial restitution for harms resulting from negligent acts, deliberate commission of a forbidden act or omission of an act required by law. We live in an information age and the public are not only better informed now than ever before about their rights, but do seek redress/damages (legal claims) where such rights are infringed upon. As such tort liability (intentional and unintentional torts) has become the subject of most litigations against nurses and other health care providers. A tort is a civil wrong committed against a person or a person's

property. Legally, it connotes wrongful doings by one citizen against another, serious enough to merit the award of compensation to the person affected (the victim). Intentional torts include malicious prosecution, invasion of privacy, defamation, assault and battery, and false imprisonment. Unintentional torts include: Negligence and Malpractice.

Negligence – This is one of the most common lawsuits instigated by patients. Because the society attaches great weight to a determination that conduct is or is not negligent, it is clear that an objective and fair a standard as possible must be established for measurement of such conduct. A search for the above culminated in the emergence of "the reasonably prudent man concept", whose hypothetical conduct is the standard against which all other conduct is judged. Negligence therefore is defined as 'the omission to do something which a reasonable man guided upon those considerations which ordinarily regulate the conduct of human affairs, would do, or doing something which a prudent and reasonable man would not do'.

A more lucid definition is – 'the failure of a professional person to act in accordance with the prevalent professional standards or failure to foresee possibilities and consequences that a professional person having the necessary skills and training would note in her area of knowledge and practice. Potential areas of negligence include: performing nursing procedures that you have not been taught; failing to meet established standards for the safe care of the patient; failing to prevent injury to patients, hospital employees and visitors; to mention a few.

Parameters for Negligence: For negligence to be established there are four things otherwise called element of negligence that must be critically looked at. They are:

- Owe a duty of care (contractual engagement)
- Breach of the duty of care
- The client suffers an injury or loss
- The breach is the proximate cause of harm/loss

The general rule is that the plaintiff must be able to establish the aforementioned points before negligence can be ascertained. The ultimate goal of law in negligence is to compensate the person who was injured by the wrongful conduct of the other person. It is not to penalize or punish the other person even though that is what is indirectly done.

Malpractice The term malpractice refers to behavior of a professional person's wrongful conduct, improper discharge of professional duties or failure to meet the standards of acceptable care, which result in harm to

another person (Zerwekh & Claborn, 1994). Stated differently, malpractice constitutes any professional misconduct, unreasonable lack of skill or fidelity in professional duties, evil practice, or illegal or immoral conduct which results in injury or death to the patient. To hold a nurse responsible in damages, it must be proved that the defendant failed to exercise the degree of skill and care required by the law.

Liability of Hospitals for Negligence of Nurses (Vicarious Liability)

Although it is possible for a patient to sue a nurse directly in action for negligence, in practice this is often not the case. Generally, the patient/client will sue the hospital or employing institution where the nurse works under the principle of vicarious liability/respondent superior literarily translated as 'let the master answer'. This is because it is assumed that an employer should ensure the competency of its staff. As such the employing institution is held liable for negligent actions of its staff. This however does not totally exonerate the nurse from litigation as she can be added as a second defendant.

Exemptions to this rule are:

- Where the nurse commit clear cut professional mistakes.
- In the case of a private hospital, where the hospital obtain the services of competent hands (nurses and physicians) and provides proper apparatus for treatment of clients.
- In cases of visiting nurses who have been selected with due care but are not servants of the hospital governor.
- Where the nurse is operating independently; not an employee of a hospital probably engaged and paid by the patient.

Defamation – This is the act of discrediting the reputation of someone else i.e. an act of creating wrong or false impression of somebody – negative connotation or giving wrong picture of another individual. Defamatory statements, whether oral or written, pictured or otherwise communicated therefore are those which tend to expose a person to hatred, contempt, aversion, disrespect and the likes. The most common examples of this tort are giving out inaccurate or inappropriate information from the medical record; discussing clients, families or visitors in public places or speaking negatively about co-workers (Zerwekh & Claborn, 1994; Caulfield, 1995).

Defamation can occur in two ways namely: *Slander* and *libel. Slander* is the term given to malicious verbal statements or defamatory statements made in a non-permanent form e.g. during a conversation, a gesture, sign language. *Libel* on the other hand is defamation by means of prints, writing, pictures, cartoons, broadcast, or telecast from a

prepared print that are of more permanent nature. Since libel can be broader in its application, it is generally actionable without the plaintiff's need to show special damages. There to avoid incessant litigations secondary to defamation, every member of the health team should refrain from idle conversations, gossips and inaccurate reports.

Assault and Battery – These two terms are often used together but each has a separate meaning. Assault is described as an intentional and unlawful offer or threat to touch a person in an offensive, insulting, or physically intimidating manner. For instance, a nurse who threatens a client with an injection after the client has refused oral medication may be committing assault. Battery is the willful touching or intentional harmful or offensive contact with another person without consent or with consent exceeded or fraudulently obtained. The term embraces such things as striking and beating another person but excludes accidental bumping of persons. In nursing care, giving an injection against the patient's will; forcing a patient out of bed; and wanton use of physical restraints, all constitute battery.

The legal issues arising from assault and battery are usually based on consent, in terms of whether the client agreed to the touching that occurred. In order not to be held liable for assault and battery, the nurse must respect the client's/patient's cultural values, beliefs, and practices and ethnic orientation. In the U.S, as a safeguard against assault and battery, adults are asked to sign a general permission for care and treatment on admission while additional written consent are obtained for special procedures.

False Imprisonment – Illegal detention as it is sometimes called means unlawful detention or intentional confinement without authorization. It occurs when clients are made to wrongfully believe they cannot leave a place. The most common example is telling a client not to leave the hospital until the bill is paid. Other examples are the use of physical or chemical restraints and threats of physical or emotional harm without legal justification. Note that restraints are legal only if they are necessary to protect the client or others from harm. The law mandates that the use of restraints or seclusion must have a physician order. False imprisonment must however not be confused with statutory authority which permits hospitals to quarantine for a limited time patients suffering from contagious diseases.

Of course occasions may arise in health care relationships that necessitate the extension of period of admission. In such situations, nurses should only counsel with the patient on the need to stay rather than detaining patients against their will. The point to be made is that patient has the right to insist on leaving even though it may be

detrimental to their health. The only rational and lawful thing that could be done is to make the patient to sign an absence without authority form (AWA) or discharge against medical advice (DAMA) form.

Invasion of Privacy – The right to privacy is the right of individuals to withhold themselves and their live from public scrutiny. Encroachment upon this right without a person's consent constitutes an invasion of privacy and it is actionable. Medical instances where privacy laws may be violated include photographing a patient without consent, revealing a patient's name in a public report, allowing an unauthorized person to observe the patient's care. To this end, nurses must always obtain patient's permission before disclosing any information regarding the patient, going through patient's personal belongings, performing procedures, and photographing the patient.

3.4 The Nurse and the Criminal Law

As earlier stated, a crime is an act committed in violation of public law and is punishable by fine and/or imprisonment in a state or federal penitentiary. Crimes are mainly of two types: a **felony** (a crime of serious nature, such as murder and manslaughter, arson and armed robbery, usually punishable by imprisonment) and **misdemeanors** (crime of less serious nature punishable by imposition of fines or imprisonment for less than a year).

Murder is defined as direct and deliberate killing of an innocent person (a person who has not forfeited his right to life); death is intended as end or means. It is an unjust killing, done without legitimate authority. It excludes killing criminals on authority of the state; the soldier killing the enemy in war; and killing in self-defense (excusable homicide). Because murder is morally wrong, the practice of *Euthanasia* (mercy killing) whether active or passive euthanasia, has come under great criticism over the years and the moral argument is that it violates the right of God who has exclusive full ownership over human life.

Manslaughter is an unintentional killing (accidental killing). Manslaughter in the first degree include cases where the victim is killed while the defendant was engaged in the commission or attempt to commit a misdemeanor affecting the person or property of the killed person or another. This embraces cases where there is willful killing of a viable fetus by injury inflicted on the mother, as in abortion deaths. Manslaughter in the second degree involves culpable negligence of a drunken doctor or nurse.

4.0 CONCLUSION

The significance of law in professional nursing practice cannot be overemphasized. The fact that ignorance is not a defense in law has therefore makes it mandatory for nurses to acquaint themselves with legal concepatients and issues relating to their practice. In pursuance of this lofty objective, this unit has provided a compendium of legal issues emanating from nurse-patient and nurse-employer's relationship. It is believed that if attention is given to these seemingly trivial but delicate issues, nurses will be able to wade off a lot of potential litigations.

5.0 SUMMARY

It contends that all nurses must know the law that applies to their area of practice.

6.0 TUTOR-MARKED ASSIGNMENT

1. What is negligence and how does it differ from malpractices? Identify and explain the key legal issues in professional negligence that will assist the court to award damages.
2. It is no exaggeration that nurse is the closest set of health practitioners to the patients and indeed the group that stay longest with the patients. However, this in itself tends to open them to liabilities. As a nurse clinician, give a succinct discussion of legal safeguards in nursing.

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UNIT 5 SEXUALITY AND GENDER ISSUES

CONTENTS

1.0 INTRODUCTION

Sexuality is the process of becoming and being a man or woman with all its attending manifestations. Sex as a topic or an issue has long been considered a “taboo” for proper adult conversation. People hardly want to talk about it openly, however, in the last two decades, knowledge about sex and discussion of sexuality have come to be recognized as important and necessary for human development.

Sexuality health has also been recognized as being relevant in the overall component of well being. In the face of this recognition, there is still lack of knowledge regarding human sexuality among many adults including health care providers. Clients are often reluctant to raise questions related to sexuality, the nurse in her bid to provide holistic care must assume the responsibility of initiating discussion of relevant sexual topics within client’s current developmental and health status. Acquisition of knowledge and desensitization towards sexual understanding of the vast range of normal sexual behaviour.

This unit will consider sexuality and gender issues in relation to personal attitudes and beliefs, sexuality counseling and disorders with the peculiar nursing process which enables health care provider (nurses) to be non-judgmental and more effective in working with clients.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- state the concept of sexuality and gender identity
- identify various attitudes towards sexuality
- discuss the nursing intervention in relation to sexuality and gender issues.

3.0 MAIN CONTENT

3.1 Concept of Sexuality

Sexuality is described as the sense of being a female or male. It has biological, psychological, social and ethical components. It influences and is influenced by life experiences. The biological aspect of sexuality is the act of sexual activity. Sex may be used for pleasure and reproduction. The activity can be controlled or curtailed due to life's change or a choice for brief or prolonged periods. Being born with female or male genitalia social roles is the main ingredient to the emergence of sexuality.

The adult sexuality has four major divisions:

- Biological sex
- Sexual behaviour
- Core gender identity
- Sex role imagery

Biological Sex:

This is determined at conception and refers to individual's physical attributes. This is based on the inherent genotype X and Y chromosomes. Female foetus receives two x chromosomes from the mother and a Y Chromosomes from the father. Initially, the genitalia of the foetus are undifferentiated, when the sex hormones begin to cue fatal tissues, the genitalia assumes male or female characteristics with corresponding underlying hormonal, neutral, vascular and physical components.

Core Gender Identity

This refers to one's sense of being a man or a woman and is established early in life, usually by 3years of age. Apart from the sex determination in utero with the aid of C. T. Scan, at this age, the child is known whether he is a boy or a girl. As children begin to explore and

understand their own bodies, they combine this information with the way that society treats them to create images of themselves as girls or boys. It is the core gender identity that corresponds to the physical attribute of the individual and self-concept development.

Sex Role Imagery

It refers to the learned behaviour that the particular society subscribes to their men and women. Sex imagery is complex because it includes the myriad beliefs about what is labeled feminine or masculine in a society. It also conveys the appropriate image of sexual conduct for particular social groups. It is important as it represents much of the learned behaviour which influences human choice and life-style.

SELF ASSESSMENT EXERCISE 1

1. Mention 3 examples of sex role imagery beliefs for male and female alike.

Male	Female

2. When does sex role imagery learning begins and ends?

Sexual Behaviour

This is the acting out of sexual expressions, feelings and beliefs. It is a combination of human behaviour and varies from how one walks to how and with whom one relays with sexually. These behaviours include promiscuity, masturbation, sexual preference (oral or genital) and the likes.

3. XY Chromosomes gives rise to ---------- foetus.
4. XX Chromosomes gives rise to ---------- foetus.

Sexual Anatomy and Physiology

Female Sex Organs

The female genitalia comprise of the external and internal organs. The external sex organs, collectively called the vulva includes the mons veneris, labia majora, labia minora, clitoris and vagina opening. The internal sex organs include the vagina, uterus, fallopian tubes and

ovaries. Menstruation and menopause are the main physiological features of female sex organs.

The male sex organs is made up of the penis, testicles, epididymis and ductus deference, the prostrate gland, seminal vesicles and cowpers glands whose secretions become part oaf the ejaculated semen.

Activity 1

- With your background knowledge of Biology / Health Sciences, sketch out the diagram of the reproductive system of man. (If in doubt check your textbook on the subject).

N.B: *You will have an extensive lecture on male and female reproductive system on Anatomy Course at 200 Level.*

Attitudes towards Sexuality

Attitudes towards sexual feelings and behaviours change as people grow older. These changes become traditional or liberal because of societal changes, feedback from others, and involvement in religious or community groups. Individuals reveal themselves as females or males by their gestures, mannerisms, clothing, vocabulary and patterns of sexual activity.

Factors Influencing Attitudes

Two main factors that help shape sexual attitudes and behaviors are biological factors and personality. Other powerful factors that are involved include religious beliefs, society and traditions.

- **Clients Sexual Attitudes**

Everyone has sexual value system which are acquires throughout life. These make it easy for a client to deal with sexual concerns in a health care setting or it becomes an obstacle to expressing it.

- **Nurses Attitudes Towards Sexuality**

Nurses should deal with personal attitudes by accepting their existence, exploring their sources and finding ways to work with them. Nurses are part of the society and her professional behaviour must guarantee that clients receive the best health care possible without diminishing their self worth. The promotion of sex education and honest examination of sexual values and beliefs can help in reducing sexual biases that can interfere with care. The nurse should give clients information about

sexuality and this does not imply advocacy. Clients require accurate honest information about the effects of illness on sexuality and the ways that it can contribute to wellness.

Sexuality Counseling

Sexuality complains are determined during history taking. An acceptable to open up makes sexuality an acceptable topic to discuss. Once the nature of the problem has been identified, treatment commences under the hinges of sexuality counseling. Sexuality counseling operates at four (4) levels:

- **Permission:** this involves letting the client realize or be reassured that the client realize or be reassured that s/he is normal and may continues doing what s/he has doing.
- **Limited Information:** this involves only providing information specific to the patients concerns or problem. A closed monitoring by the nurse is made possible by the assumed change in behaviour or action.
- **Specific Suggestions:** these may be a suggested course of action through more in-depth education and sexual exercise.
- **Intensive Therapy:** highly individualized and provided by professionals who have advanced experience and knowledge in the sex therapy field.

SELF ASSESSMENT EXERCISE 2

Using levels 2 and 3 what will be your guiding principle in the sexuality counseling of an Acquired Immune Deficiency Syndrome (AIDS) patient / client.

Disorders of Sexuality

Disorders of sexuality can occur in each of the four areas of sexuality can occur in each of the four area of sexuality (see 3.1), but most disorders are psychosexual in origin. These disorders include:

1. Variation in sexual expressions classified by object choice and sexual aim.

- Tran sexuality in which an individual appears to have a gender identity at odds with his or her physical self.
- Ambiguous genitalia which presents a genitalia different from the physical gender identity on the child.

- Sexual concerns over performance are also prevalent in which an individual doubts his or her necessary physical attribute to attract, satisfy and keep a sexual partner.
- Sexual dysfunction in the form of impotence, premature ejaculation, frigidity, dyspareunia and vaginism. It can be as a result of psychological or physical factors.

Sexuality and Nursing Process

Sex as a natural, spontaneous act that passes easily through a number of recognizable physiological stages and culminates in satisfaction for both partners. Nurses should expect to encounter clients who have problems with one or more of the stages of sexual behaviour excitement, plateau, orgasm and resolution).

Many nurses are uncomfortable talking about sexuality with clients, but they can reduce their discomfort using the nursing process which includes assessment, diagnosis, planning, implementation and evaluation.

The assessment level considers the factors affecting sexuality: physical relationship, lifestyle and self esteem factors. These assist in eliciting the exact cause of sexual concerns or problems of the client/patient. As a follow up to the assessment, altered sexuality patterns and sexual dysfunction are recognized as approved nursing diagnosis. The difference is in whether the client perceives problems in achieving sexual satisfaction or expresses concern regarding sexuality.

The planning of nursing care is dependent on clients needs, and should include referrals to resources to promote achievement of goals after contact with the nurse is discontinued.

Nursing interventions (implementation) should address client alterations in sexual patterns or sexual dysfunction generally to raise awareness, assist clarification of issues or concerns, and provide information. An acquisition of specialized education in sexual functioning and counseling may provide more intensive sex therapy.

Evaluation of the impact of nursing process on sexuality is determined by client or spouse verbalizations whether achievement of goals and outcomes has been achieved. Sexuality is felt more than observed and sexual expression requires an intimacy not amenable to observation. Clients are expected to verbalize concerns, share activities and satisfaction as well as relate risk factors. Outcomes are evaluated, the client, spouse and nurse may need to modify expectations or establish more appropriate time frames to achieve the target goals.

4.0 CONCLUSION

Sexuality is an integral component of personhood and therefore may have an impact on or be affected by health status. The nurse therefore needs to be clear about his or her own sexuality and moral beliefs about sex and reproduction before addressing the needs of the patient. Sex will always remain a controversial issue because of ethical value systems. Facts of conception, development conception and sexual diseased transmission may be taught but cannot be totally separated from ethical issues.

The nurse has many opportunities to be a promoter of good health in the fields of sex and reproduction which should be utilized at every available opportunity. No one should be left out (male or female) as the responsibility for sexual health transcends all boarders. With sensitivity and insight, the nurse can assist client in assuming responsibility for decisions about sexuality thus enhancing their total health**.**

5.0 SUMMARY

This unit on sexuality and gender issues reflected on the concept of sexuality stressing the four (4) major divisions of adult sexuality, brief anatomy and physiology of the sexual organs, attitudes towards sexuality and counseling in the face of sexuality disorders. The levels of nursing intervention were also identified in order to appropriate the client's expectation of health care from the nurse.

ANSWER TO SELF ASSESSMENT EXERCISE 1

1 Male: Leadership, Benefactor, and Dominance.
Female: Service, Caretaker and Role model.
2 From 3years to death.

ANSWER TO SELF ASSESSMENT EXERCISE 2

Closed monitoring, Provide privacy in management, provide education to overcome the stigma and offer suitable treatment.

6.0 TUTOR-MARKED ASSIGNMENT

1. What are the key elements in the concept of sexuality?
2. Briefly describe the interrelationship of the four (4) aspects of sexuality.

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MODULE 4

UNIT 1 STRESS AND ADAPTATION

CONTENTS

1.0 INTRODUCTION

Modern man is faced with the paradox of stress. Everyone experience stress from time to time and normally a person is able to adapt to long-term stress or cope with short term stress until it passes. Stress places heavy demand on a person, and if the person is unable to adapt, illness can result.

Stress is an essential part of our lives providing us with the impetus for vitality, drive and progress. Stress is the body response to the daily or everyday pressure of the body reaction to excessive demand by the trying to maintain equilibrium among its internal process. Conversely, it is also stress which is the root of a multitude of sociological, medical and economic problem. Stress can be mild, moderate and severe with behaviours that decrease energy and adaptive responses. The leading Cayuse of death today involves life-style stressor which precipitates stress with resultant effect on health-illness continuum. It is this cause and effect that this unit intends to examine stress and adaptation considering its concept, models of stress and stressor, factors influencing

response to stress, adaptation and stress management for improved patients' care.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- explain the concept of stress and stressor
- discuss four (4) models of stress as they relate to nursing practice
- describe stress-management techniques required for clients care.

3.0 MAIN CONTENT

3.1 Concept of Stress and Stressor

There can be no stress without a stressor. Stress is any situation that can upset and prevent an individual from relaxing naturally. Stressor is the stimuli that precipitate the change in a man. Stress as a stimulus, do tax the adaptive capacity of the organism to its limits and which in certain condition can lead to a disorganization of behaviour and maladaptation which may lead to diseases.

Stress is common denominator of the adaptive reaction in the body. It is any situation in which a non-specific demand requires an individual to respond physiologically and psychologically as well as taken an action. Stress can lead to negative or counterproductive feelings or threaten emotional well being; threatens the way a person normally perceives reality, solves problems or think; threatens relationship and sense of belonging and a persons general outlook on life, attitude towards loved ones, job satisfaction, ability to problem solve and health status. Response to stress is initiated by the individual's perception or experience of the major change.

The stimulus precipitating the response is called the **stressor** which may be physiological, psychological, social, environmental, developmental, spiritual, or cultural and represent unmet need. Stressors may be internal such as (fever, pregnancy, menopause and an emotion such as guilt; and external which originates outside a person such as marked change in environmental temperature, a change in family or social role or peer pressure.

Activity 1

- Have you ever been faced with stress? Yes or No
- If yes, what is/are the cause?

- How did you recognize that you were under stress?
- What did you do?
- What other sources of stress do you know?

Now that you have attempted Activity 1, discuss your views with another colleagues/learner before you continue.

3.3 Models of Stress and Stressor

Models of stress refers to classes of stress which are used to identify the stressors for a particular individual and predict that persons responses to them. These models are useful for planning individualized nurse care plan to help a client cope with unhealthy, non-productive response to stressors.

There are four (4) models of stress namely:

- Response Based Model (RBM)
- Adaptive Based Model (ABM)
- Stimulus – Based Model (SBM)
- Transaction- Based Model(TBM)

**Please follow as we discuss these models in relation to nurse client therapeutic care.*

i) Response Based Model (RBM)

RBM special the particular response or pattern of responses indicating a stressor. Selye, S. (1976) in his classic research into stress identified two physiological responses to stress namely:The local adaptation syndrome (LAS) and the general adaptation syndrome (GAS).While LAS is a response of a body tissue, organ or part of the stress of trauma, illness, or other physiological change, the GAS is a defense response of the whole body to stress. Individual response to stress is purely physiological and never modified to allow cognitive influences, but RBM does not allow individual differences in response patterns (No flexibility).

ii) Adaptation Based Model (ABM)

ABM states that there are four (4) factors that determines whether a situation is stressful or not. These are: ability to cope with stress;

practices and norms of the person's peer groups; impact of the individual to adapt to a stressor; and the resources that can be used to deal with the stressor.

ABM is based on the fact that people experience anxiety and increased stress when they are unprepared to cope with stressful situation.

iii) Stimulus-Based Model (SBM)

SBM focused on distributing or disruptive characteristics within the environment. The classical research of Holmes and Rahe (1978) identified stress as a stimulus resulting in the development of the social readjustment scale which measures the effects of major life events on illness. The following verdicts have been summed up for:

1) Life changes events are normal.
2) People are passive recipients of stress and their perceptions of the events are irrelevant.
3) All people have a common threshold of stimulus, and illness results at any point after the threshold.

iv) Transaction Based Model (TBM)

TBM views the person and environment in changing, reciprocal, interactive, relationship. It was developed by Lazarus and Folkman (1984) with a focus on the stressor as an individual perpetual response rooted in psychological and cognitive process.

SELF ASSESSMENT EXERCISE 1

1. Identify 3 physiological changes in the body that goes for Local Adaptation Syndrome (LAS)
2. Identify the physiological changes in the body that goes for General Adaptation Syndrome.

3.4 Factors Influencing Response to Stressors

The response to any stressor is dependent on physiological functioning, personality, behavioural characteristics and the nature of the stressor. The nature of the stressor involves the following factors:

i) **Intensity:** minimal, moderate or severe.
ii) **Scope:** limited, medium, extensive.
iii) **Duration:** time lag
iv) Number and nature of other stressors

Activity 2

- As a following to activity I, briefly comment in not more than a page, how the above underlined influences your response to the identified sources of stress.

3.4.1 Sources of Stress

The common sources of stress are classified under the following headings:

A) Stress problems at home: these includes

- Problem with co- tenants or neighbours
- Fear of attack by armed robbers
- Looking after dependants
- ……
- …… (complete the last two)

B) Stress provoking situations in the society:

- Eratic supply of electricity water and fuel
- Reckless driving and traffic hold ups
- Insecurity
- …….
- …….(complete the rest)

C) Stress provoking situation at work:

- having too much to do
- too much pressure and repeated deadlines
- poor physical working conditions
- ……..……

Activity 3

Now recap on the sources of stress above and compare with your write up in Exercise 1.

3.5 Adaptation to Stressors

Adaptation is the process by which the physiological dimensions change in response to stress. The focus therefore in health care is on a persons family's or community's adaptation to stress because many

stressors cannot be avoided. It involves reflexes, automatic body mechanisms for protection, coping mechanisms and instincts.

Adaptation is an attempt to maintain optimal functioning. To do this, persons must be able to respond to such stressors and adapt to the required demands or changes. It requires an active response from the whole person (physical, developmental, emotional, intellectual, social and spiritual). Adaptation response can be physiological or psychological.

Physiological Response

This model of stress response can be either Local Adaptation Syndrome (LAS) or General Adaptation Syndrome (GAS). See Exercise 1 in 3.2. An example of LAS is reflex (pain) and inflammatory response. The GAS consists of alarm reaction, resistance and the exhaustion stage.

1st Stage ALARM STAGE

Mobilization of the defence mechanisms of the body and mind to cope with the stressors.

2nd Stage RESISTANCE STAGE

Stabilization is attempted and success if achieved the body repairs damaged tissue that may occur if not exhaustion is the next stage.

3rd Stage: **i) RECOVERY STAGE**

Repairs done, the body goes back to full functioning

ii) EXHAUSTION STAGE:

The body can no longer resist stress and if it continues, death may occur.

Psychological Response

Exposure to stress threatens ones basic needs. The threat whether actual or perceived, provides frustration, anxiety and tension. The psychological response otherwise referred to as coping mechanisms is adaptive behaviors which assist the person's ability to cope with stressors. These behaviors are directed at stress management and are acquired through learning and experience as a person identifies acceptable and successful behaviors. The behavior includes:

i) Task Oriented Behavior

Use of cognitive abilities to reduce stress, solve problems, resolves conflicts and gratify needs. The 3 types of task-oriented behaviors are attack behaviour, withdrawal behaviour, compromise (by substitution or omitting the satisfaction of needs to meet other needs or to avoid stress).

ii) Ego Defense Mechanism

These are unconscious behaviors that offer psychological protection from a stressful event. It is used by everyone and helps protect against feelings of unworthiness and anxiety.

3.6 Management of Stress

The management of stress is classified into 3 headings for easy assimilation and understanding.

i) Reducing stressful situation through:

a) Habit formation
b) Change avoidance
c) Time blocking
d) Time management
e) Environment modification.

ii) Decreasing physiological response through:

a) Regular exercise
b) Humour
c) Nutrition
d) Rest
e) Relaxation

iii) Improved behavioural and emotional responses to stress through:

a) Support systems: family, friends, colleague, to be included in the stress management.
b) Crisis intervention
c) Enhancing self esteem.

SELF ASSESSMENT EXERCISE 2

What are the support system's roles in alleviating stress in an expectant mother who is due to put to bed in a week's time?

3.7 Nursing Intervention in Stress

The nurses understanding of the physiological and psychological indicators of client management easier. Since each client has specific perceptions and responses to stress, the nurses ability to assess, individual needs, diagnose in relation to stress, plan the levels of care, implement and evaluate will assist greatly in determining the effectiveness of stress management technique for the overall benefit of the client.

4.0 CONCLUSION

Each person reacts to stress differently according to perception of the stressor, personality, prior expectations with stress and use of coping mechanism.

The stages of illness development in stress-related diseases are 7 in all.

Stage 1: short stress situation (no risk)
Stage 2: moderate stress situation (at risk)
Stage 3: severe stress situation
Stage 4: early clinical sign
Stage 5: symptom
Stage 6: disease or disability
Stage 7: death

At any of this stage, there may be physical complaints such as nausea, vomiting, diarrhea or headache. Physical appearance also changes. The identification of the mind-body interaction is crucial for predicting the risk of stress-related illness. A nurse by mere studying the effects of a stressful lifestyle or event in a client can also assess the coping mechanism required by the client.

5.0 SUMMARY

This unit has examined the concept of stress and its relationship to health and illness. The various models of stress were also highlighted to help the nurse understand the causes and response to stress. Stress management techniques directed at changing a person's reaction to stressors were also discussed to assist the nurse in helping client manage stress carefully.

ANSWER TO SELF ASSESSMENT EXERCISE 1

1. Trauma, Illness and physiological change.
2. Alarm reaction, Resistance and Exhaustion stage.

ANSWER TO SELF ASSESSMENT EXERCISE 2

Family (social, economic, emotional), Friends, Colleagues, Acquitances and the Nurse**.**

6.0 TUTOR-MARKED ASSIGNMENT

What is your concept of stress? Identify and discuss the four (4) models of stress as they relate to nursing practice.

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UNIT 2 NURSING AND SOCIETY

CONTENTS

1.0 INTRODUCTION

The society is a system whereby people live together in organized community. It is dynamic with its attending challenges.

In the last lecture, the relationship of Nursing to other sciences and technology was established thus as the society is changing so much nursing. Throughout history, nursing has responded to society needs and ceases to remain static/practicing solely on tradition with threats to her existence and relevance.

In this unit, we shall examine Nursing and the Society with the trends influencing Nursing practice. The overall effect will be considered vis-à-vis Nursing adaptation to the challenges posed by the societal trends.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- to examine the societal changes and nursing practice
- to discuss the current societal trends and influence on nursing practice
- to identify the place of Nursing in the society.

3.0 MAIN CONTENT

3.1 Demographic Changes

Demography is the statistical description of population using: birth, death, migration, emigration, life expectancy, marriage and divorce rates. Population in every society increase daily, which accounts for more people in need of health services with greater demand on health practitioners (Nurses inclusive). Urban shifts, peculiarities in the health care of older persons and youths which forms 75% of the population, increased divorce rates and weakened family ties requires nursing assistance to family and other social problems with health implications. These include incidence of chronic long-term illness, e.g. AIDS, Cancer, mental disorders and alcoholism, epidemics, etc.

Nurses therefore have to explore new methods for providing care and establish practice standards in new areas.

Activity 1

a) What is the population of Nigeria today?
b) List three (3) problems of over population.

3.2 Technological Advances

The ongoing scientific research has continued to uncover new knowledge at a faster pace. With the advert of computer and other management information systems, societal values and quest for services have been tailored towards this e.g. canned foods, drinks and additives. Scientific advances closely associated with health illness, organ transplants, family planning methods and sophisticated diagnostic sets such as C. T. Scan machine, Ultra sound machines and Electrocardiograph machines. In the social sciences, great strides have been made in attempting to understand and predict human behaviour, which is an important area for nursing.

Nurses as agent of change uses the knowledge of values, attitudes and prejudices, social mobility, ethnic, social and cultural backgrounds to design patient care. Empirical knowledge of practice is no longer adequate as nursing programs are increasingly teaching scientific principles that will guide the practice for all possible circumstances.

SELF ASSESSMENT EXERCISE 1

Mention four (4) advancement in communication/technology that can facilitate Nursing Care in a Hospital set up.

3.3 Increasing Consumer Knowledge

There has been an increase in health information on consumable items thereby encouraging consumer movement aimed at getting quality health to the worth of their money. The society made up of consumers is demanding health care with high quality. Nurses as consumer of someone's product in the society with high expectations, is expected to support the clients right in the quality and cost of health care being offered.

3.4 Human Rights Movements

Human Rights movements is a non-governmental organization which seeks to address outright violation/negation of human rights to life, expression, association and religion that is considered as morally right or wrong in our relationship with others. The movement is concerned for the poor, lonely, neglected and oppressed.

Nursing respects the rights to good care for all and recognizes the right to life, advocates clients rights with recognitions of special needs of some groups: the dying, hospitalized, pregnant women, to ensure that quality care is provided without sacrificing their rights. Nursing holds the key to maintenance of human individualistic concern for people and their health problems hence it must be zealously enlarged.

3.5 Women Liberation Movement

Women to day are taking steps to free her for independent action. Nursing traces its origin in the society to orders with unquestioned obedience to superiors. Nursing is predominately made up of women and this reveals the role of a nurse as a mother surrogate to nurture those who were ill and helpless.

SELF ASSESSMENT EXERCISE 2

a) Who is the mother of modern Nursing?
b) When was she born?
c) What was her major role?

Women in the society today seek for social, economic, political and educational quality with men. The Women-In-Nursing (WIN) is one of such group which joining forces with non-nurses strives for equality in the society and changing nursing care practices.

3.6 Professionalism in Nursing

Nursing in Nigeria has evolved through several philosophical eras in the last decade. Having passed through the Nurses' Ordinance of 1947/1959, Registration of Nurses Regulation of 1962 and the legal status of as a professional cum trade union organization, trade Union Decree 21 and 22 of 1978, Decree 54 of 1989 and recently amended decree 54 of 1992. One common phenomenon that prevailed in all these has been that of uplifting the image of nursing.

This progress is attributed to the recognition accorded nursing by the society due to unique and essential contributions made. The emergence of professionalism in nursing has produce a self-regulatory, self determining and a body of scientific knowledge of a group of people who can assume responsibility and accountable for their action.

SELF ASSESSMENT EXERCISE 3

1) List the six – (6) societal changes identified already.

4.0 CONCLUSION

The scope and range of nursing responsibilities in meeting the needs of society mean assuming increasing responsibility for patient care, developing collaboration with other health practitioners, supporting and embracing new and promising methods for delivery health care service more effective.

Nursing has demonstrated interest in caring for society's unfortunates. The emphasis of the care is on compassion and understanding, sympathy and empathy in accepting the patient who is a member of the society as the nurse. Nursing is a member of the society as the nurse. Nursing as a profession holds the key to the holistic client care.

5.0 SUMMARY

In this unit, we have identified and examine concisely nursing and society with six (6) changes in the society that has positively influenced nursing practice. A dynamic society requires understanding and commitment on the part of service providers that will not be compromised.

ANSWER TO SELF ASSESSMENT EXERCISE 1

C.T. Scan, Ultra Sound Machines, and Electrocardiography.

ANSWER TO SELF ASSESSMENT EXERCISE 2

A). Florence Nightingale B). 1820 C). A researcher, a caring nurse of the sick and well. She gave birth to professionalism in nursing.

ANSWER TO SELF ASSESSMENT EXERCISE 3

Demographic changes, Technological changes, Increasing consumer knowledge, Human Rights movement, Women Liberation movement and Professionalism in Nursing.

6.0 TUTOR-MARKED ASSIGNMENT

Discuss in details the societal changes that have come on Nursing and its influence on the practice.

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UNIT 3 HEALTH EDUCATION

CONTENTS

1.0 INTRODUCTION

You will recall that we explored the concept and components of Primary Health Care in the Nature of nursing course of which Health education was one. Health education is a process by which individual or group of persons learn to prevent diseases, promote and maintain or restore health through voluntary adaptation of health behaviour**.**

The importance of health education was strongly highlighted by Alma Ata Conference. It was pointed out that community participation is crucial to ensure optimum utilization of health resources. It was also stressed that health is an individual responsibility and every individual need to be health conscious so that he may observe healthy living practices.

You know already that preservation of good health is dependent on following good health practices. Health education and communication about healthy practices bring about a change in health behaviour so that harmful; health practices can be given up and good health practices can be reinforced.

This unit presents to you the definition, growth, principles, practices, and levels of health education. The interrelationship of health education with communication is already dealt with in Nature of Nursing. (Please check up).

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- explain his/her own concept of health education
- list the objectives of health education
- describe how health education can be planned and methods of delivery.

3.0 MAIN CONTENT

3.1 Definitions

Activity 1

- What do you understand by the word 'health'?
- What is education?

(Write the answer somewhere and then read on)

Health: It is a state of complete physical, mental, social and spiritual well being and not merely the absence of diseases or infirmity (World Health Organization, 1948**).**

Education: It is the process by which there is a behavioural change resulting from an experience undergone.

Health Education: A process that informs motivates and helps people to adopt and maintains health practices for a healthy lifestyle, advocates environmental changes as needed to facilitate this goal and conducts professional training and research towards the same end (National Conference on Preventive Medicine, U.S.A). This is working definition that is more of practical value.

Health education is a process of known information which has the purpose of promoting health (Pearce, 1980).

Health education is also described as a process by which habits, attitudes and knowledge are changed to choose the path leading to better health. Success in health education depends on a great deal on the skills of communicating with the community (WHO, Health Panel).

It is also seen by many as a process of positively changing or influencing peoples' health knowledge, attitudes and behaviour through their own actions (Ewles and Simnelt, 1985 and Tones, 1990).

It is an all-round process which involves the whole life thereby helping people to help themselves live a healthful life.

SELF ASSESSMENT EXERCISE 1

What is your concept of (idea) of health education?

3.2 Growth of Health Education

Health education has begun with people being systematically interested in general sanitary progress, social and material causes which can impede their health.

In 1875, Maryland State of Health emphasised that the health of the pubic is dependent on the public conviction about health. Health education initially was the responsibility of Public Health personnel until the 2nd quarter of the century when it became formally recognized as a speciality and a major function of Public Health.

The development of newer interpretation of public bought about the need to do things with people and to get people accept an increasing responsibility for their own health.

Clair Turner at the Massachusetts Institute of Technology later recognised health education academically with the development of specialized graduate curriculum in 1922. Its global acceptance for knowledge acquisition and practice has brought its operation beyond the hospital setting to community, schools, churches, mosques and the public at large.

3.3 Purposes of Health Education

Health education is a process that informs, motivates and helps people to adapt and maintain healthy practises and lifestyles. The three main purposes of health education will be discussed below:

- **Informing people**

Informing people is the right of an individual. It is prerequisite to proper awareness and assessment of one's duties and rights. Health is a basic right of all human beings, so is health information. Only informed community will aspire, work, demand and fight for its right, that is, health. Health information helps people in becoming aware of their health problems and guides them to appropriate solution for the same.

- **Motivating people**

Only information is not enough. Information that alcohol or tobacco is harmful for health does not ensure that people will leave them. Besides informing, it is also necessary to motivate people to adopt certain behaviour. Health education must provide learning experiences, which favourably influence habits, knowledge and attitude. Consumers should make choice and decisions about health matters.

- **Guiding people into action**

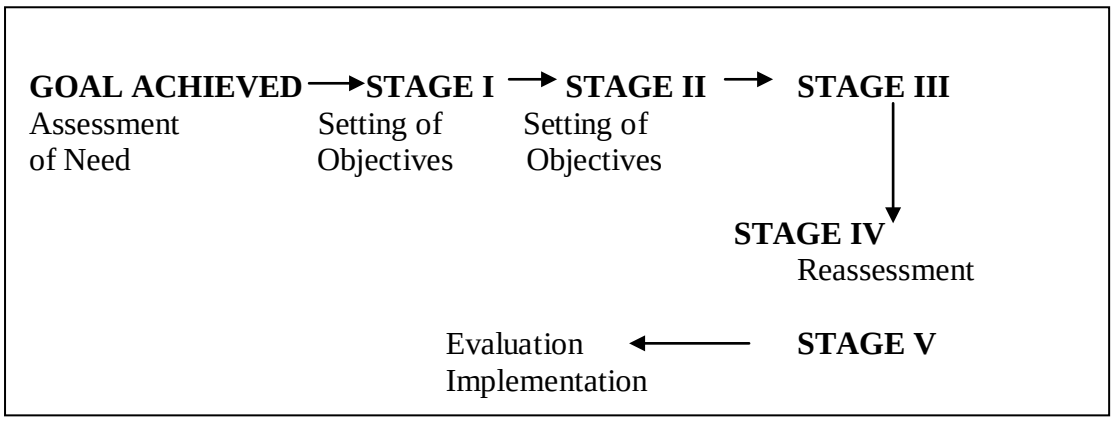
Motivation must be accompanied by guidance to achieve the expected behaviour. People need to adopt and maintain healthy practices and lifestyle.

SELF ASSESSMENT EXERCISE 2

Why do you need to health educate?

3.4 Process of Health Education

The process involved in health education as identified by Books (1980) includes: assessment, objectives setting, readiness, implementation and evaluation.



Note that a similar process is involved in nursing care. See unit 17 in Nature of Nursing for details. The nurse is expected to identify, plan, implement, and evaluate in relation to the patients knowledge and behaviour.

3.5 Principles of Health Education

Health education brings together the art and science of Medicine and the principle and practice of general education. It involves teaching,

learning and inculcation of habits concerned with healthful living. The guiding principles are:

- Issues to be discussed must be interesting (or made interesting) to the people.
- Personal involvement in form of group discussion, panel discussion and workshops.
- Start health education from what the people knew before the unknown.
- Study the people's level of understanding, literacy and education to ensure prompt comprehension.
- Reinforcement and repetition at intervals is useful.
- Motivation: incentives must be incorporated for good and bad habits.
- The education should role model any issue being taught. Consider this Chinese proverb. "If I hear it, I forget it. If I see it, I remember it. If I do it, I know it."
- Make the whole exercise attractive, palatable and acceptance with necessary methods.

SELF ASSESSMENT EXERCISE 3

Health education involves the following?

3.6 Health Education in Nursing

Health education is a continuous professional activity in nursing at all levels. It places on the nurse a sense of responsibility to:

- Supply relevant, accurate information about general and specific health matters to patients and relatives.
- Teach patients and relatives on self-care, avoidance of complication and reduction of consequences of ill health.
- Teach patient and relatives how to cope effectively with disability both in hospital and after discharge.
- Communicate effectively, appropriately and sensitively with patients and relatives.

SELF ASSESSMENT EXERCISE 4

Mention 4 problems in health education. ***(If in doubt study 3.5 again)***

4.0 CONCLUSION

Nurses have limitless opportunities to practise health education regardless of the nursing speciality. Health education can occur at both formal and informal settings whenever and wherever the nurse fulfils her professional function). The only limitation is when the nurse fails to appreciate or recognized those occasions and opportunities which are favourable.

An health educator desirous to affect the people for good must be sympathetic and friendly, knowledgeable and one who practises what he teaches (role model) talks the language of the people, uses different methods of health education (as identified by you in Exercise 4), uses audio-visual and proper medium of communication to be an effective communicator and achieve the desired result (change of life style for healthful living).

5.0 SUMMARY

In this unit, we have examined health education in relation to the definition, growth; principles purposes and processes. We also considered its relationship to nursing and exercises to check your progress on the unit.

ANSWER TO SELF ASSESSMENT EXERCISE 1

The answer is to incorporate all round process/procedure which contributes to healthy living.

ANSWER TO SELF ASSESSMENT EXERCISE 2

To provide information that will bring about a desired change in behaviour.

ANSWER TO SELF ASSESSMENT EXERCISE 3

Teaching, Learning and inculcating habits that is concerned with healthy living.

ANSWER TO SELF ASSESSMENT EXERCISE 4

No clarity of purpose, inappropriate methods, Wrong audience and Wrong evaluation

6.0 TUTOR-MARKED ASSIGNMENT

A health educator must possess certain qualities to be effective in his/her assignment. Comment in not less that 2 pages on four (4) of the qualities. Discuss the three (3) specific objectives of health education.

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