HOLY FAMILY NURSING AND MIDWIFERY TRAINING

COLLEGE, BEREKUM

A PATIENT/FAMILY CARE STUDY ON ACUTE PYELONEPHRITIS

ASUM FREDA

4120190052

A PATIENT/FAMILY CARE STUDY SUBMITTED TO THE NURSING AND MIDWIFERY COUNCIL OF GHANA IN PARTIAL FULFILMENT FOR THE AWARD OF LICENCE TO PRACTICE AS A PROFESSIONAL REGISTERED GENERAL NURSE.

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PREFACE

Nursing was “untaught” and instinctive. It was performed out of compassion for others, out of the wish to help others. Nursing was a function that belonged to women. It was viewed as a natural nurturing job for women.

Nursing emerged as a profession in the mid-19th century. Historian’s credit Florence Nightingale, a well-educated woman from Britain, as the founder of modern nursing. Nightingale challenged social norms – and her wealthy parents – by becoming a nurse.

At the time, the public objected to the idea of women nursing strangers. But Nightingale saw nursing as an extraordinary opportunity for females. She believed they could use their education and scientific knowledge to improve patient care while gaining personal independence.

In 1854, during the Crimean War, the British government requested Nightingale’s aid at a military hospital in Turkey. Within weeks of her small team arriving, the mortality rate of British soldiers fell dramatically. Nightingale’s accomplishments impressed the public and ultimately helped convince the Western world of the dignity and value of educated nurses.

One prominent change in the evolution of the nursing profession is formalized education. The first training programs opened at hospitals in the late-19th century. Student nurses received clinical instruction in exchange for providing care to patients. During this period of training, nurses helped hospitals make tremendous improvements in safety and quality, and humanized medical care.

By the second half of the 20th century, patient needs became more complex and hospitals required skilled nurses to manage them. The hospital-based education model thus declined in favor of training programs at colleges and universities.

The patient/family care study is a report of nursing care rendered to a patient and family by a final year student nurse in which a patient is selected from the ward, nursed from the day of admission till discharge and possible follow – up visits are made to maintain optimum level of health of the patient.

The patient/family care study forms part of the assessment of every final year student. It is a prerequisite for every candidate in order to partially fulfill the award of license in Registered General Nursing by the Nursing and Midwifery Council of Ghana. It affords the student the opportunity to develop his/her skills for future use.

The patient and family care study enables the student nurse to do more research, interact and co–ordinate with other members of the health team for the promotion of comprehensive and quality health care to individuals and the community as a whole.

The study also provides opportunity for the student nurse to use scientific methodology and holistic approach to nursing care. It helps the student nurse transform his/her theoretical knowledge acquired into practice so that the necessary skills and knowledge could be obtained for professional work.

The care study builds up confidence in the student nurse and helps him/her to take up full responsibilities in caring for a patient and his/her family.

Finally, it gives the student nurse some level of competence in rendering accurate nursing care using the nursing process approach.

ACKNOWLEDGEMENT

My foremost appreciation is to the Almighty God for His guidance, knowledge, strength and wisdom in bringing this piece of work into reality.

I am very grateful to Madam S.B. and her family for their co-operation during the care and providing me with all the necessary information needed for the study.

I appreciate the efforts of my supervisor Miss Grace Asantewaa who gave me valuable insights, guidance and unwavering support to perfect this work.

I also appreciate the efforts of the Staffs of the Female ward of Holy Family Hospital, Berekum.

I am highly indebted to all authorities, various authors and publishers of all the references used for this piece of work.

Finally, I am very grateful to my parents for their upbringing and monitoring during my education, not forgetting my friends for their prayers, support and encouragement for making this patient and family care study a success.

God richly bless you all.

INTRODUCTION

Patient care study is an academic exercise carried out by a final year student nurse.

The care study uses the nursing process approach which is deliberate activity whereby the practice of nursing is performed in systematic manner. The nursing process has five components. These are assessment, analysis, planning, implementation and evaluation.

Using the nursing process in the nursing care of the patient emphasis is placed on health promotion, maintenance and restoration of health or even enhancing a peaceful death depending on the patient's condition.

The patient/family care study forms part of the requirements of the Nursing and Midwifery Council in fulfillment of the award of license in Registered General Nursing.

This study was carried out on Madam S.B. a 25year old who was diagnosed of acute pyelonephritis was received into the Female Medical Ward from the Accident and Emergency Unit of Holy Family Hospital, Berekum on 12th December, 2021 at 9:00am. Patient was hospitalized for five days during which seven health problems were identified:

1) Patient had high temperature (40.3℃)
2) Patient complained of right flank pain
3) Patient vomited
4) Patient complained of loss of appetite
5) Patient complained of anxiety
6) Patient complained of body weakness
7) Patient had insufficient information on her condition

These problems were solved with the help of various health team members including physicians, nurses, laboratory technicians, and dietician, as well as her family members. The following treatment plan were ordered:

1. Intravenous Ceftriaxone 2g daily x 24 hours
2. Intravenous Ciprofloxacin 400mg bd x 48 hours
3. Intravenous Normal saline 0.9% 2 liters for 48 hours
4. Intravenous Ringers lactate 1.5 liters x 24 hours
5. Intravenous Paracetamol 1g tds x 24 hours
6. Tablet Paracetamol 1g tds for 3days
7. Tablet Ciprofloxacin 500mg bd x 10 days

These investigations were ordered and carried out on patient;

1. Full blood count
2. Blood film for malaria parasites
3. Urine routine examination

She was discharged on the 15th December 2021 in a well improved state. Patient reported for review on 22nd December, 2021. She and her family were visited three times at home before and after her discharge. First home visit was on 13th December, 2021, second home visit on 21st December, 2021 and third home visit was on 24th December, 2021. Termination of care was done during the third home visit which was 24th December, 2021.

The description of the detailed care study is in six (6) chapters as follows;

1. Chapter one involves assessment of the patient and family, literature review and validation of data.
2. Chapter two encompasses analysis of data.
3. Chapter three contains planning for patient family care.
4. Chapter four includes implementation of the care plan.
5. Chapter five involves evaluation of the care rendered to the patient/family,
6. Chapter six talk about summary and conclusion.

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CHAPTER ONE

ASSESSMENT OF CLIENT/FAMILY

1.0 Introduction

Assessment is the action or an instance of making a judgment about something (Merriam-Wester, 2020). It is the first step in the nursing process. It is done through interview, observation, physical assessment, laboratory investigations and radiographic reports to identify patient's problems and strengths to enable the formulation of appropriate nursing diagnosis and interventions to help care for the patient to live an independent normal life. This assessment comprises of client particulars, family medical and socio-economic history, patient's developmental history, patient's lifestyle/hobbies, past medical history, present medical history, admission of patient, patient's concept of the illness, literature review on disease condition and validation of data.

1.1 Patient Particulars

Patient particulars refers to information about a patient's history and behavioral patterns, gathered by a therapist or medical professional primarily from the patient but sometimes from others who know or are related to him or her (American Psychological Association, 2020).

Madam S.B. is the patient for the study. She is a 25-year-old woman, born on 1st January, 1997 to Mr. J. B.A. and Mrs. W.A. She comes from Osedzi in the central region of Ghana region and currently resides at Sofokyere a suburb of Berekum in the Bono region with house number SK-109. Her digital address is BD-0288-3601. She is single. She is the last born of five children. All her four siblings are alive and healthy. Patient is a Christian who worships with the church of Pentecost. Her next of kin is her mother Mrs. W.A. who also resides at the same place as the patient. Madam S.B. is a student who is currently pursuing her tertiary education at Ola Training College. Patient had her primary education at Freeman Methodist school, her

junior high school at Berekum Demonstration J.H.S and Senior high school at Mando Senior High and Technical. She speaks two languages (Twi and English). She is dark in complexion, 1.57m tall and weighs 50kg on admission with a Body Mass Index (BMI) of 20.3kg/m^2 which clearly indicates that she has a normal weight. She has no physical impairments or disabilities. Patient is registered under the National Health Insurance Scheme.

1.2 Family's Medical History

Medical history focuses on the patient's health throughout life, including congenital or acquired illnesses and disorders. The object is to uncover, where possible, clues to the cause of the patient's current condition (American Psychological Association, 2020).

Patient and her family mentioned that there is no hereditary diseases or chronic diseases such as hypertension or diabetes in both the paternal and maternal side of the family. There is also no history of mental illness and communicable diseases in either family. No birth defects or congenital anomalies has been reported in the family. Currently her parents are alive and so are her four siblings. Her grandparents are deceased, the cause of death of grandparents are unknown. According to her, her elder brother has ever been hospitalized due to road traffic accident and her elder sisters have also been hospitalized on account of childbirth. The source of medical care has been a blend of herbal and orthodox medications from over the counter drug sellers and from the hospital through the outpatient department basis. Patient and family were advised on the potentially harmful effects of over the counter medications and told them to report to the hospital anytime they feel unwell. According to patient there is no reported use of food supplements among the family. Food and drug allergies have never been manifested in any of the family members. She further mentioned that her family is not known for risky behaviors such as alcoholism and substance abuse.

1.3 Family Socio-Economic History

Socio economic history refers to the position of an individual or group on the socioeconomic scale, which is determined by a combination of social and economic factors such as income, amount and kind of education, type and prestige of occupation, place of residence, and in some societies or parts of society-ethnic origin or religious background (American Psychological Association, 2020).

Patient has a very good relationship and cohesion with her family. Socially the family is not noted for smoking, alcoholism and anti-social behaviors. She revealed that small proportion of her family members are into farming and majority of them are Civil servants. Her parents are retired teachers. Patient depends fully on her parents and older siblings for financial support. Her family members are well known for their enormous participation in religious activities, their kindness and generosity. Patient is a member of the singing group at church. In terms of religious believes she revealed that, all of her family members are Christians. She revealed that most of her family members are registered with the National Health Insurance Scheme which helps them in their medical expenses when they visit the health facility for healthcare. Family members are always ready and willing to support each other in times of financial hardships. She stated that there are no taboos governing the family.

1.4 Patient's Developmental History

Development refers to the process of growth and differentiation which involves cognitive, psychosexual and psychosocial processes (Weller, 2016). Maturation is the process of developing (Weller, 2016). Growth is the progressive development of a living thing, especially the process by which the body reaches its complete physical development (Weller, 2016). The developmental history was given by patient herself as told by her mother. Patient indicated that her mother went through normal pregnancy of nine months' gestation without any pregnancy

associated disorders and had spontaneous vaginal delivery with the help of medical staff at a health center at Osedzi in the central region. She was born without any congenital abnormality such as cleft lip or palate, hydrocephalus and was immunized against the childhood vaccine preventable diseases as evidenced by Bacilli Calmet Guerin (BCG) scar on her right shoulder. Patient was breastfed for several months before she was introduced to complementary foods. She was weaned off breastmilk at one and half years. She went through a normal developmental milestone. This includes sitting up at the 7^{th} month, crawling at the 10^{th} month, walking, talking and running between the ages of one and three. Patient around the age of twelve begun to experience secondary sexual characteristics such as enlargement of breast, broadening of hips, growing of pubic hairs and had her menarche at age fourteen. Patient is single and has no children. Madam S.B. is a student who is currently pursuing her tertiary education at Ola Training College. Patient had her primary education at Freeman Methodist school, her junior high school at Berekum Demonstration J.H.S and Senior high school at Mando Senior High and Technical. Upon asking patient about the aspirations and career plans, she said she wants to become a lecturer. She has never had difficulties with learning.

As specified by Jarvis (2000), Erik Erikson (1902 to 1994) focused on cultural and societal influences as determinants of behavior. Erickson was concerned with the growth of **ego,** the conscious, organized, rational part of the personality. He described eight stages of ego development that encompass the life span. Each stage is characterized by a distinct conflict, or crisis, relating to the person's physiologic maturation and to what society expects of a person at that age. According to Erik Erickson's psychosocial development which encompasses eight stages, Patient is now in her adulthood age group where there is conflict between intimacy versus isolation (19 to 40 years), As youth move even deeper into adulthood, developing intimate relationships becomes particular salient. Importantly, intimacy here involves both romantic and platonic relations-it is about sharing oneself with others. Indeed, once individuals

develop a reasonable sense of identity, they are then prepared to share that identity with others in order to develop successful intimate relations. If people cannot form these relationships, perhaps because of their own needs, a sense of isolation may result arousing feelings of darkness and danger. Patient has demonstrated beyond reasonable doubt that she has achieved a sense of identity as she is very keen on getting into a serious relationship after tertiary education and starting her own family coupled with the fact that she has a cordial relationship with her peers. These features makes it more convincing beyond reasonable doubt that patient is in the intimacy dimension of Erickson`s psychosocial development.

1.5 Obstetric History

An **obstetric history** involves asking questions relevant to a patient's current and previous pregnancies (Potter, 2020). According to patient she saw her menses at the age of fourteen. She is gravida 0 para 0. Her menstrual cycle is regular with moderate flow days and she has 28days cycle with normal flow of five days without any complication such as dysmenorrhea and amenorrhea. Mrs. A.A said, she had never used any of the contraceptives before.

1.6 Patient's Lifestyle and Hobbies

Life style is defined as the typical way of life of an individual, group, or culture (Merriam-Wester, 2020). Patient goes to bed around 10:30pm, she always pray before going to bed. She wakes up at 5:00am and says her morning prayers. She sweeps the family compound in the morning. She does the household chores after sweeping. She maintains her oral hygiene with the use of tooth brush and tooth paste, empties her bowel, takes her bath with warm or cold water depending on the weather. Patients favourite meal is fufu with light soup and meat. She also enjoys fruits like orange, banana, and pineapple. Patient does not have any fixated habit such as drinking, smoking, gossiping etc. For breakfast, patient mostly takes porridge with bread. She usually goes to the market on Thursday to buy food stuffs. She does most of the

meal preparation duties in the house. She is responsible for preparing breakfast, lunch and supper. She basically spends her whole day in the house when on vacation. In the evenings she stays glued to her television until she feels the edge to sleep which usually happens around 10:30pm. Her hobbies are reading and singing. Patient does not experience any difficulties when it comes to grooming, eating and dressing. On Saturdays she has to wash her clothes and that of her parents. On Sundays, she gets ready for church and after church she prepares herself for the weekdays ahead. She described herself as an extrovert who likes to attend funerals and weddings. Patient has no known allergy to food or drugs. Patient cited that she mostly takes three square meals per day thus breakfast, lunch and supper. She sometimes enjoys snacks. Her major medium of transportation in town is her motorcycle. Through our interaction patient revealed that her major stress is the fact that she is always thinking about doing well in school and becoming successful in life. Patient indicated that she does a lot of singing whenever she is stressed up. Patient cited that she likes honest people but dislikes dishonest individuals. Patient is an active member of the singing band at church. My personal impression about my patient is that, she is very calm, benevolent and generous.

1.7 Patient's Past Medical History

Past medical history is a record of a past medical problems and treatments that a person has had (Merriam-Wester, 2020).

According to patient she never experienced any childhood illness like whooping cough, poliomyelitis, measles, tetanus, tuberculosis, and diphtheria. Madam S.B. has not been involved in any major in her life. She has not been hospitalized before for any serious illness and this happens to be her first admission at the hospital. Patient has not suffered any disability from any previous illness. Currently, she is not taking any over the counter medication such as laxatives, aspirin or vitamins. She does not see any specialist for treatment. Her appointments

to the hospital have always been on outpatient basis. She does not have regular medical checkups. She has never had any surgeries performed on her.

1.8 Patient's Present Medical History

The history of the present health concern or illness is the single most important factor in helping the health care team arrive at a diagnosis or determine the patient's needs. The physical examination is helpful but often only validates the information obtained from the history. A careful history assists in correct selection of appropriate diagnostic tests (Hinkle & Cheever, 2018).

Madam S.B. said she has been well until the evening of 10thDecember, 2021 where she started experiencing flank pain. The onset of these manifestations was sudden. On 11th December, 2021, flank pain worsened and she could feel pain when urinating in the morning. Flank pain worsened with the slightest activity she did, she felt relieve on rest. Around 7:00pm, she felt very warm to touch and vomited almost everything she ate in the evening. She and her parents then decided to rush to Holy Family Hospital, Berekum. They arrived at the facility around 7:30pm, she was seen at the Accident and Emergency Unit and had to be detained for treatment. After several hours of detainment patient was provisionally diagnosed of acute pyelonephritis and was subsequently ordered to be trans-out to the Female Medical Ward to continue her treatment.

1.9 Admission of the Patient

Admission is the initiation of care, usually referring to inpatient care, either lasting for a day or more (Merriam-Wester, 2020). It is a change of environment to the patient and relatives. This change of environment could either be elective/planned or emergency/unplanned. Patient underwent an unplanned admission since she was admitted at the Female ward just at the time she reported without any prior arrangement.

On 12th December, 2021 at 9:00am, patient was received into the Female Medical Ward from the Accident and Emergency Unit per ambulation accompanied by a staff nurse and a relative (mother) with the diagnosis of acute pyelonephritis.

Patient particulars were collected from the accompanying staff nurse. Patient and relative were welcomed and offered seats. Self-introduction was done, staffs present were also introduced to the patient. Patient was made comfortable in an already prepared admission bed.

The patient's identity was verified by mentioning her name for her to respond. Vital signs were checked and recorded accurately as follows:

1. Temperature 40.3^{o}C
2. Pulse 100bpm
3. Respiration 25cpm
4. Blood Pressure 100/80mm/Hg

Patients weight 50kg

Patient was introduced to her roommates and was assured of the competency of the healthcare team. They were also oriented to the ward and its annexes. She was asked to get her own bowl, spoon, drinking cup, bathing sponge, bucket, towel, pyjamas and other toiletries.

On admission, patient looked unwell with a satisfactory level of hydration. She complained of flank pain, fever and vomiting . Physical examination on the patient was performed from head to toe and no abnormalities were seen. Hospital policies regarding visiting periods, payment of bills and the time vital signs will be checked were explained. Patient was properly orientated to the ward and its annexes. She was reassured to allay fears.

A head to toe physical examination was conducted on patient and no abnormalities were seen. Patent was oriented to time, place and person. During assessment, she complained of flank pain, nausea and vomiting.

The following treatment plan were ordered:

1. Intravenous Ceftriaxone 2g daily x 24 hours
2. Intravenous Ciprofloxacin 400mg bd x 48 hours
3. Intravenous Normal saline 0.9% 2 liters for 48 hours
4. Intravenous Ringers lactate 1.5 liters x 24 hours
5. Intravenous Paracetamol 1g tds x 24 hours
6. Tablet Paracetamol 1g tds for 3days
7. Tablet Ciprofloxacin 500mg bd x 10 days

These investigations were ordered and carried out on patient;

1. Full blood count
2. Blood film for malaria parasites
3. Urine routine examination

I reintroduced myself to patient as a student nurse of the Holy Family Nursing and Midwifery Training College, Berekum, who would like to take her and her family for a patient/family care study. Madam S.B. and her family were informed that the care study is a requirement by the Nursing and Midwifery Council of Ghana in partial fulfillment towards the award of license in Diploma in Registered General Nursing. Explanation of the concept of the patient/family care study was done to patient and her family. They were assured absolute privacy and confidentiality. It was added that a report will be written after the entire event. Madam S.B. and her relative agreed to the request and assured me of providing the necessary information and assistance. They were congratulated on such a decision. Discharge planning

was initiated with the relatives; thus, they were told that the hospital will be a temporal place for their care and would have to continue the care at home once there is an improvement in her condition. Her particulars such as such as name, sex, age, occupation, health insurance status and residential address were entered into the admission and discharge book and the daily ward state. The ward in-charge was informed about the interest in using this patient for care study and she granted me the permission to move on with the study. I decided to choose this patient for the study because I wanted to get a deeper understanding about the causes, signs and symptoms, prevention and treatment of pyelonephritis and to be able to differentiate it from other similar renal conditions. A care plan was drawn to initiate nursing care.

At 9:00am, patient had high body temperature of 40.3^0C. A nursing diagnosis of Hyperthermia (40. 3^0C) related to infectious process of the kidneys was formulated. An objective was set to help patient attain an optimal temperature (36.2-37.4) within 72hours. These interventions were carried out to reduce patient temperature. Patient was reassured that her temperature will be normal by explaining procedures to regain normal body temperature. Patient was encouraged to bath look-warm water patients temperature was rechecked and nearby windows were opened and fans were switch on to improve ventilation in the room. Prescribed tab Paracetamol 1g and IV Ceftriaxone 2g were administered.

At 9:10am patient complain of flank pains. A nursing diagnosis of Acute pain related to the inflammatory process in the kidney was formulated. A goal was set for Madam S.B. to be relieved of her pain within 48 hours. Patient was reassured that she will be relieved of pain after mediation and pain was assessed using the numeric rating scale of 0-10. 0 means no pain and 10 unbearable pains and patient rated pain as 6. Patient was assisted and put into left

lateral position. Cold compresses were applied. Prescribed Tab. Paracetamol1g was administered and patient was engaged in watching an interesting movie.

Patient complains of vomiting at 9:20am. A nursing diagnosis of Risk for deficient fluid volume evidence to vomiting was formulated. An objective was set to maintain normal fluid level throughout hospitalization as evidence by; patient verbalizing resolution of vomiting, and patient having good skin turgor, moist skin and mucous membrane normal urine output and absence of thirst. The following interventions were performed on the patient. Clinical features of dehydration was assessed patient had good skin turgor, moist skin and mucus membrane and report no thirst. Patient blood pressure was checked and recorded to assess loss of fluids level, and intake and output chat was monitored. Patient took 500mls of orange juice everyday with 2500mls (5 glasses) of water.

1.10 Patient's Concept of Illness

Patient did not know what actually cause of her illness. She also did not attribute it to any witches and wizards. Madam S.B. was looking forward to getting better soon. She believed that when she cooperates with the care being rendered to her, she will get well soon.

1.11 Literature Review

Literature review of a condition talks about the established and laid down facts about the disease condition, which aids in the medical and nursing diagnoses and the appropriate management for that particular disease. It also entails the standard with which the patient's clinical manifestations, diagnostic investigations, treatment and others are compared.

Anatomy and Physiology Overview of the Urinary Systems

Function of the renal and urinary systems is essential to life. The primary purpose of the renal and urinary systems is to maintain the body's state of homeostasis by carefully regulating fluid and electrolytes, removing wastes, and providing other functions. Dysfunction of the

kidneys and lower urinary tract is common and may occur at any age and with varying degrees of severity (Hinkle & Cheever, 2018).

As discussed in Waugh and Grant (2018), the urinary system is the main excretory system and consists of the following structures:

1. 2 kidneys, which secrete urine
2. 2 ureters that convey the urine from the kidneys to the urinary bladder
3. the urinary bladder, which collects and stores urine
4. the urethra through which urine leaves the body.

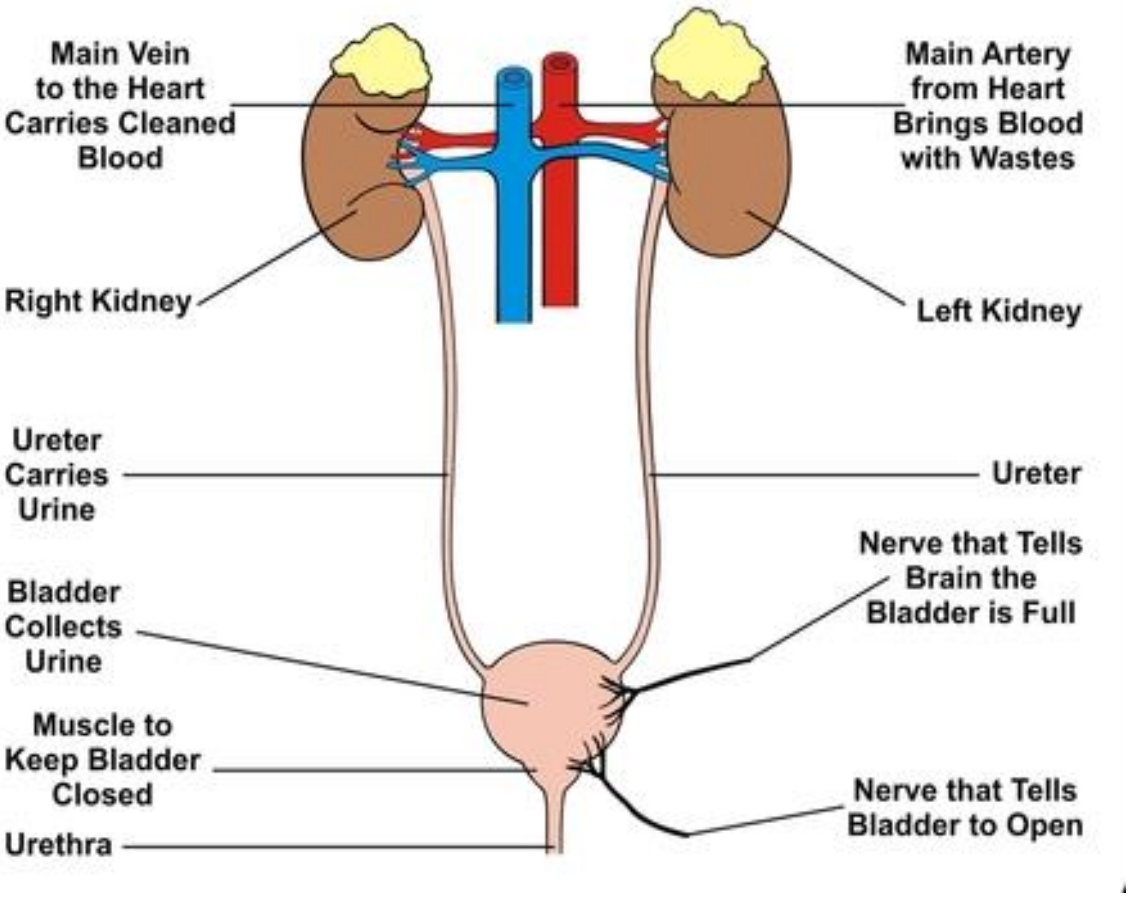

Figure 1. 1: Urinary system

Source: (Zimmermann, 2018)

Kidney

The paired kidneys are reddish, kidney is bean–shaped organs located just above the waist between the peritoneum and the posterior wall of the abdomen. Because their position is posterior to the peritoneum of the abdominal cavity, the organs are said to be retroperitoneal (Tortora & Derrickson, 2017). They extend from the level of the 12th thoracic vertebra to the 3rd lumbar vertebra, receiving some protection from the lower ribcage. The right kidney is usually slightly lower than the left, probably because of the considerable space occupied by the liver. Kidneys are about 11cm long, 6cm wide and 3cm thick; they weigh around 150 g. They are embedded in, and held in position by, a mass of fat. A sheath of fibrous connective tissue, the renal fascia, encloses the kidney and the renal fat (Waugh & Grant, 2018).

Gross Structure

According to Waugh and Grant (2018), three different areas of tissue are clearly distinguishable to the naked eye when viewing a longitudinal section of the kidney:

1. an outer fibrous capsule, surrounding the kidney
2. the cortex, a reddish-brown layer of tissue immediately below the capsule and surrounding the renal pyramids
3. the medulla, the innermost layer, consisting of pale, conical-shaped. striated structures, the renal pyramids. Each pyramid has a pointed end called the papilla.

The hilum is the concave medial border of the kidney, where the renal blood and lymph vessels, the ureter and nerves enter (Waugh & Grant, 2018).

Urine formed within the kidney passes through a renal papilla into the drainage system that begins at a minor calyx. Several minor calyces merge into a major calyx. and two or three major calyces combine, forming the renal pelvis, a hallow funnel-shaped structure that

narrows when it leaves the kidney as the ureter. The walls of the calyces and renal pelvis are lined with transitional epithelium and contain smooth muscle. Peristalsis, intrinsic contraction of smooth muscle, propels urine through the calyces, renal pelvis and ureters to the bladder (Waugh & Grant, 2018).

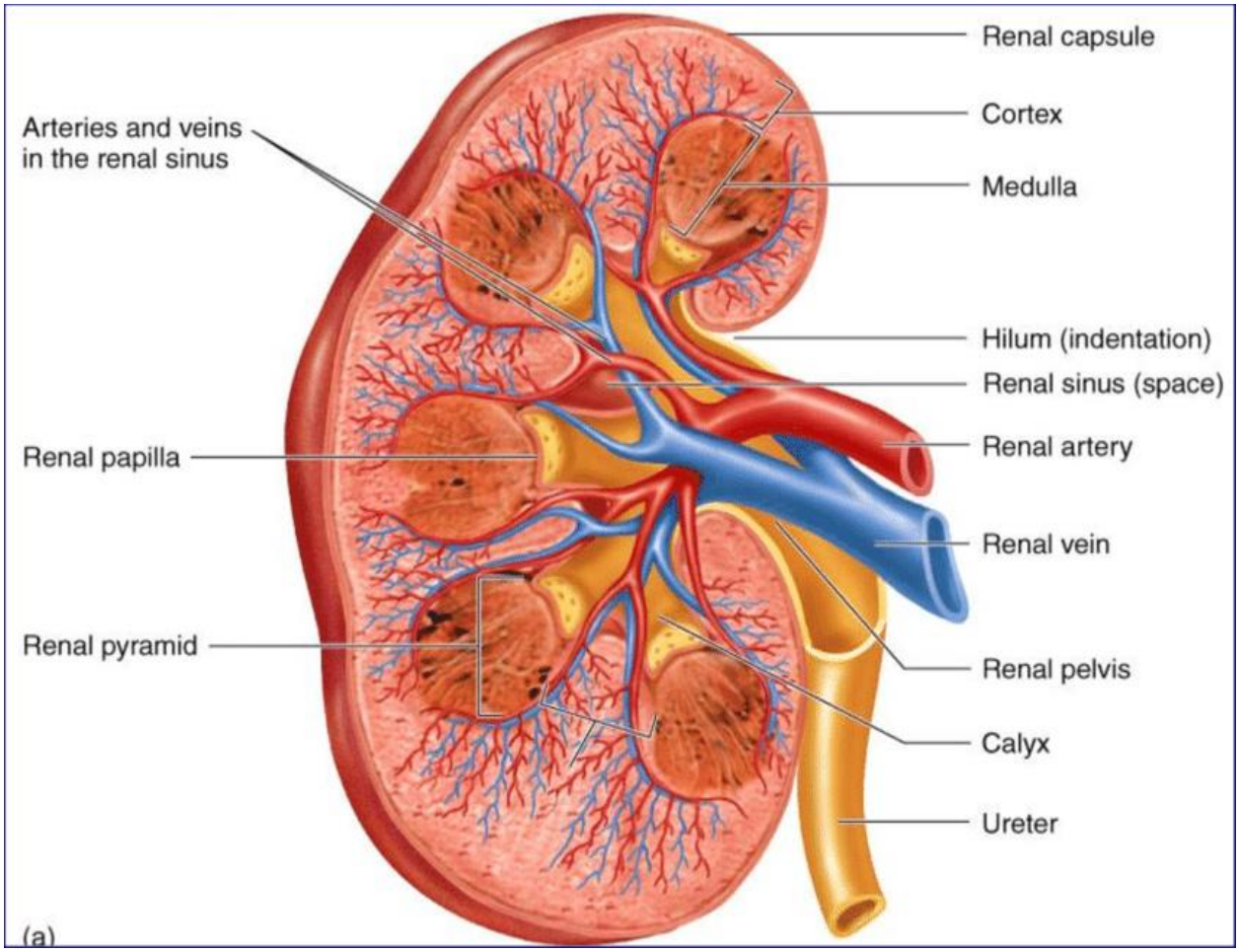

Figure 1. 2: Longitudinal section of the kidney

Source: (Jabbar, 2016)

Microscopic structure

The kidney contains 1-2 million functional units, the nephrons, and a much smaller number of collecting ducts (Waugh & Grant, 2018). Each nephron consists of two parts: a renal corpuscle, where blood plasma is filtered, and a renal tubule into which the filtered fluid

(glomerular filtrate) passes. Closely associated with a nephron is its blood supply, which was just described (Tortora & Derrickson, 2017).

The two components of a renal corpuscle are the glomerulus (capillary network) and the glomerular capsule or Bowman's capsule, a double-walled epithelial cup that surrounds the glomerular capillaries. Blood plasma is filtered in the glomerular capsule, and then the filtered fluid passes into the renal tubule, which has three main sections (Tortora & Derrickson, 2017). In the order that fluid passes through them, the renal tubule consists of a (1) proximal convoluted tubule (PCT), (2) nephron loop (loop of Henle), and (3) distal convoluted tubule (DCT).

Proximal denotes the part of the tubule attached to the glomerular capsule, and distal denotes the part that is further away. Convoluted means the tubule is tightly coiled rather than straight. The renal corpuscle and both convoluted tubules lie within the renal cortex; the nephron loop extends into the renal medulla, makes a hairpin turn, and then returns to the renal cortex (Tortora & Derrickson, 2017).

The distal convoluted tubules of several nephrons empty into a single collecting duct (CD). Collecting ducts then unite and converge into several hundred large papillary ducts, which drain into the minor calyces. The collecting ducts and papillary ducts extend from the renal cortex through the renal medulla to the renal pelvis (Tortora & Derrickson, 2017).

Functions of the Kidney

The kidneys do the major work of the urinary system. The other parts of the system are mainly passageways and storage areas (Tortora & Derrickson, 2017). According to Hinkle and Cheever (2018), functions of the kidneys include the following:

1. Urine formation: The kidneys form urine, which passes to the bladder for storage prior to excretion. 'The composition of urine reflects the exchange of substances between the nephron and the blood in the renal capillaries.
2. Excretion of waste products: By forming urine, the kidneys help excrete wastes from the body. Some wastes excreted in urine result from metabolic reactions. These include urea and ammonia from the deamination of amino acids; creatinine from the breakdown of creatine phosphate; uric acid from the catabolism of nucleic acids; and urobilin from the breakdown of hemoglobin.
3. Regulation of electrolytes: The kidneys help regulate the blood levels of several ions, most importantly sodium ions (Na+), potassium ions (K+), calcium ions (Ca2+), chloride ions (Cl−), and phosphate ions (HPO4 2−). The kidneys accomplish this task by adjusting the amounts of these ions that are excreted into the urine.
4. Regulation of acid–base balance: The kidneys excrete a variable amount of hydrogen ions (H^+) into the urine and conserve bicarbonate ions ($HCO3^-$), which are an important buffer of H^+ in the blood. Both of these activities help regulate blood pH.
5. Control of water balance: The kidneys adjust blood volume by conserving or eliminating water in the urine. An increase in blood volume increases blood pressure; a decrease in blood volume decreases blood pressure.
6. Control of blood pressure: The kidneys also help regulate blood pressure by secreting the enzyme renin, which activates the renin– angiotensin–aldosterone pathway. Increased renin causes an increase in blood pressure
7. Production of hormones. The kidneys produce two hormones. Calcitriol, the active form of vitamin D, helps regulate calcium homeostasis, and erythropoietin stimulates the production of red blood cells.

Ureters

The ureters carry urine from the kidneys to the urinary bladder. They are hollow muscular tubes about 25-30cm long with a diameter of approximately 3 mm. The ureter is continuous with the funnel-shaped renal pelvis (Waugh & Grant, 2018). It travels downwards through the abdominal cavity, behind the peritoneum in front of the psoas muscle into the pelvic cavity, and passes obliquely through the posterior wall of the bladder. This arrangement means that, as urine accumulates and the pressure in the bladder rises, the ureters are compressed and the openings into the bladder are occluded. This prevents backflow (reflux) of urine into the ureters (towards the kidneys) as the bladder fills and also during micturition, when pressure increases as the muscular bladder wall contracts (Waugh & Grant, 2018).

Three layers of tissue form the wall of the ureters. The deepest coat, the mucosa, is a mucous membrane with transitional epithelium and an underlying lamina propria of areolar connective tissue with considerable collagen, elastic fibers, and lymphatic tissue. Transitional epithelium is able to stretch—a marked advantage for any organ that must accommodate a variable volume of fluid (Waugh & Grant, 2018). Mucus secreted by the goblet cells of the mucosa prevents the cells from coming in contact with urine, the solute concentration and pH of which may differ drastically from the cytosol of cells that form the wall of the ureters. Throughout most of the length of the ureters, the intermediate coat, the muscularis, is composed of inner longitudinal and outer circular layers of smooth muscle fibers. This arrangement is opposite to that of the gastrointestinal tract, which contains inner circular and outer longitudinal layers (Tortora & Derrickson, 2017). The muscularis of the distal third of the ureters also contains an outer layer of longitudinal muscle fibers. Thus, the muscularis in the distal third of the ureter is inner longitudinal, middle circular, and outer longitudinal. Peristalsis is the major function of the muscularis. The superficial coat of the ureters is the

adventitia, a layer of areolar connective tissue containing blood vessels, lymphatic vessels, and nerves that serve the muscularis and mucosa. The adventitia blends in with surrounding connective tissue and anchors the ureters in place (Tortora & Derrickson, 2017).

Urinary Bladder

The urinary bladder is a hollow, distensible muscular organ situated in the pelvic cavity posterior to the pubic symphysis. In males, it is directly anterior to the rectum; in females, it is anterior to the vagina and inferior to the uterus. Folds of the peritoneum hold the urinary bladder in position. When slightly distended due to the accumulation of urine, the urinary bladder is spherical. When it is empty, it collapses. As urine volume increases, it becomes pear shaped and rises into the abdominal cavity. Urinary bladder capacity averages 700–800ml. It is smaller in females because the uterus occupies the space just superior to the urinary bladder (Tortora & Derrickson, 2017).

In the floor of the urinary bladder is a small triangular area called the trigone. The two posterior corners of the trigone contain the two ureteral openings; the opening into the urethra, the internal urethral orifice, lies in the anterior corner. Because its mucosa is firmly bound to the muscularis, the trigone has a smooth appearance. Three coats make up the wall of the urinary bladder. The deepest is the mucosa, a mucous membrane composed of transitional epithelium and an underlying lamina propria similar to that of the ureters (Tortora & Derrickson, 2017).

The transitional epithelium permits stretching. Rugae (the folds in the mucosa) are also present to permit expansion of the urinary bladder. Surrounding the mucosa is the intermediate muscularis, also called the detrusor muscle, which consists of three layers of smooth muscle fibers: the inner longitudinal, middle circular, and outer longitudinal layers. Around the opening to the urethra the circular fibers form an internal urethral sphincter;

inferior to it is the external urethral sphincter, which is composed of skeletal muscle and is a modification of the deep muscles of the perineum. The most superficial coat of the urinary bladder on the posterior and inferior surfaces is the adventitia, a layer of areolar connective tissue that is continuous with that of the ureters. Over the superior surface of the urinary bladder is the serosa, a layer of visceral peritoneum (Waugh & Grant, 2018).

Urethra

The urethra is a canal extending from the neck of the bladder to the exterior, at the external urethral orifice. It is longer in the male than in the female. The male urethra is associated with both the urinary and the reproductive systems (Waugh & Grant, 2018). The female urethra is approximately 4 cm long and 6 mm in diameter. It runs downwards and forwards behind the symphysis pubis and opens at the external urethral orifice just in front of the vagina. The external urethral orifice is guarded by the external urethral sphincter, which is under voluntary control (Waugh & Grant, 2018). The wall of the female urethra has two main layers: an outer muscle layer and an inner lining of mucosa, which is continuous with that of the bladder. The muscle layer has two parts: an inner layer of smooth muscle that is under autonomic nerve control, and an outer layer of striated (voluntary) muscle surrounding it. The striated muscle forms the external urethral sphincter and is under voluntary control. The mucosa is supported by loose fibroelastic connective tissue containing blood vessels and nerves. Proximally it consists of transitional epithelium, while distally it is composed of stratified epithelium (Waugh & Grant, 2018).

Definition

As specified in Hinkle and Cheever (2018), Pyelonephritis is a bacterial infection of the renal pelvis, tubules, and interstitial tissue of one or both kidneys. Causes involve either the upward spread of bacteria from the bladder or spread from systemic sources reaching the kidney via

the bloodstream. Pathogenic bacteria from a bladder infection can ascend into the kidney, resulting in pyelonephritis.

Pyelonephritis is an inflammation of the renal parenchyma and collecting system, including the renal pelvis. Pyelonephritis usually begins with colonization and infection of the lower urinary tract via the ascending urethral route. Bacteria normally found in the intestinal tract, including E. coli or Proteus, Klebsiella, or Enterobacter species, often cause pyelonephritis (Harding, 2020).

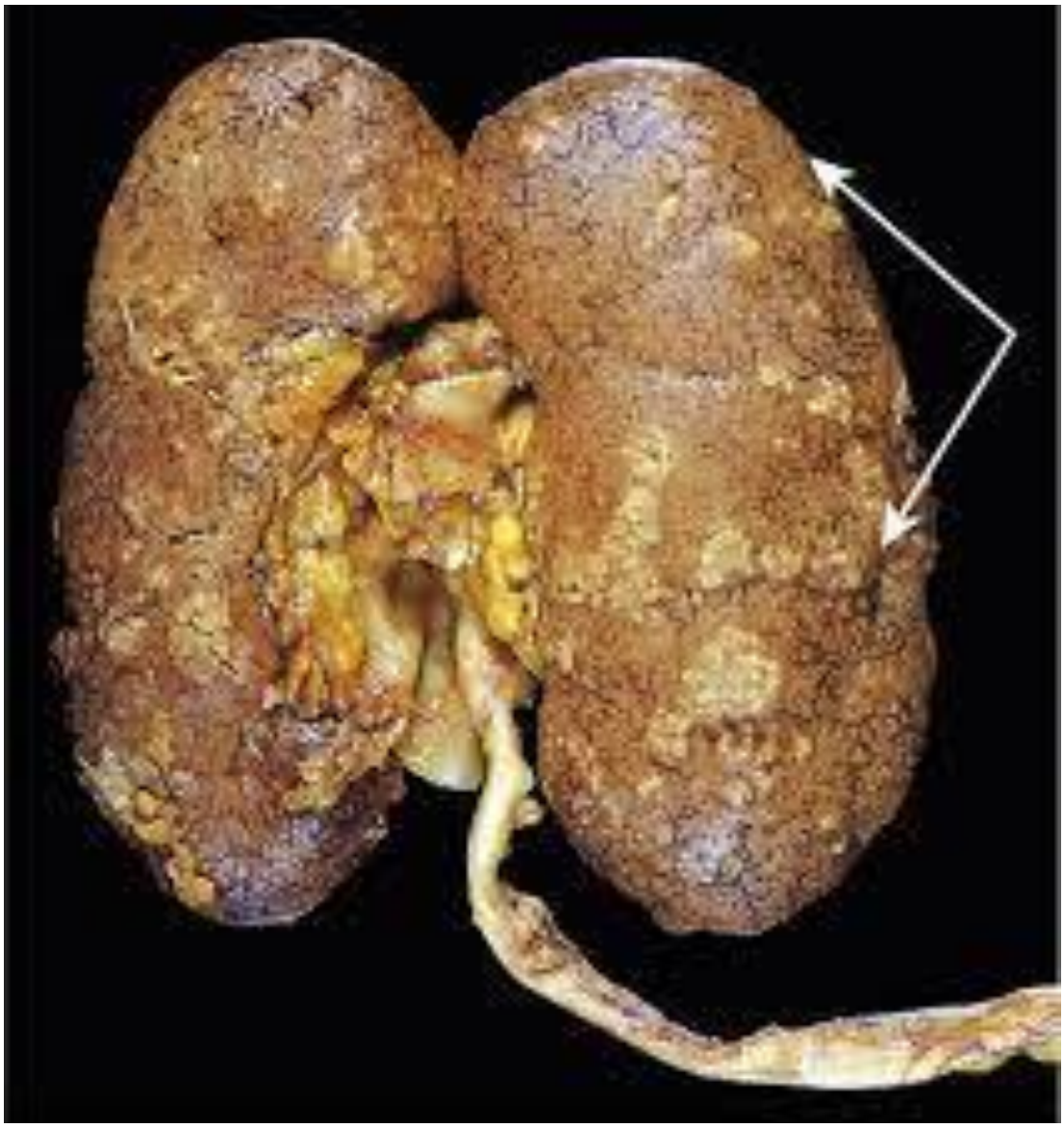

Figure 1. 3: Diagram of Pyelonephritis

Source: (Harding, 2020)

Incidence

Pyelonephritis is very common, with 120-130 cases annually per 100,000 women and 30-40 cases per 100,000 men. Females are more commonly affected with pyelonephritis than males. Pyelonephritis is more common in pregnancy due to the physiological dilatation of the upper renal tract; if it does occur, it can trigger premature labour. Acute pyelonephritis has no racial predisposition (Penman, et al., 2022).

Aetiology/Causes

According to Hinkle and Cheever (2018), the main cause of acute pyelonephritis is gram-negative bacteria, the most common being *Escherichia coli*. Other gram-negative bacteria which cause acute pyelonephritis include *Proteus, Klebsiella, and Enterobacter*. In most patients, the infecting organism will come from their fecal flora. Bacteria can reach the kidneys in 2 ways: hematogenous spread and through ascending infection from the lower urinary tract. Hematogenous spread is less common and usually occurs in patients with ureteral obstructions or immunocompromised and debilitated patients.

Risk Factors

As mentioned in Harding (2020), the following are risk factors of pyelonephritis

1. Bacterial infection (including E. coli or Proteus, Klebsiella, or Enterobacter species)
2. Incompetent ureterovesical valve or bbstruction occurring in the urinary tract increases the susceptibility of the kidneys to infection
    a. bladder or prostate tumors
    b. strictures
    c. benign prostatic hyperplasia and
    d. urinary stones are some potential causes of obstruction that can lead to infections)

3. CAUTI (Catheter-Associated Urinary Tract Infection)
4. Renal calculi
5. Urinary tract catheterization
6. Pregnancy
7. Diabetes mellitus
8. HIV/AIDS

Types

As mentioned in Harding (2020), pyelonephritis may be acute or chronic.

1. Acute pyelonephritis: Acute pyelonephritis usually leads to enlargement of the kidneys with interstitial infiltrations of inflammatory cells. Abscesses may be noted on or within the renal capsule and at the corticomedullary junction. Eventually, atrophy and destruction of tubules and the glomeruli may result (Hinkle & Cheever, 2018).
2. Chronic pyelonephritis: Repeated bouts of acute pyelonephritis may lead to chronic pyelonephritis. In chronic pyelonephritis the kidneys become scarred, contracted, and nonfunctioning. Chronic pyelonephritis is a cause of chronic kidney disease that can result in the need for renal replacement therapies such as transplantation or dialysis (Hinkle & Cheever, 2018).

Pathophysiology

Acute pyelonephritis results from bacterial infection of the renal pelvis and parenchyma. Bacteria can reach the kidney either by ascending from the lower urinary tract, directly from the blood stream, as in cases of septicaemia or infective endocarditis or, rarely, via lymphatics (as seen in cases of retroperitoneal abscess) (Hinkle & Cheever, 2018). Neutrophils infiltrate the tubules and interstitium and cause suppurative inflammation. There

are often small renal cortical abscesses and streaks of pus in the renal medulla. The most common organism* (~80%) isolated is Escherichia coli.

Other organisms include, Klebsiella, Proteus, Enterococcus faecalis (catheters), Staphylococcus aureus (catheters), Staphylococcus saprophyticus (commensal), and Pseudomonas (catheters) (Harding, 2020). Chronic pyelonephritis is associated with progressive renal scarring, which can lead to end-stage renal disease (ESRD) (Hinkle & Cheever, 2018).

Clinical features

According to Hinkle and Cheever (2018), the following are clinical manifestations of acute pyelonephritis;

1. Fever (38.0)
2. Chills
3. Low back pain
4. Flank pain
5. Nausea
6. Vomiting
7. Headache
8. Malaise
9. Dysuria
10. Frequent urination
11. Urinary urgency
12. Cloudy urine
13. Fishy smelling urine

The following are clinical manifestations of chronic pyelonephritis;

14. Poor appetite
15. Polyuria
16. Excessive thirst
17. Weight loss

Diagnostic Investigations and Assessment Findings

According to Harding (2020); Hinkle and Cheever (2018), the following are diagnostic of acute pyelonephritis

1. Physical examination reveals pain and tenderness in the area of the costovertebral angle
2. Imaging studies: ultrasound (initially), CT scan, cystoscopy, voiding cystourethrogram (VCUG)
3. Urine culture and sensitivity tests are performed to determine the causative organism so that appropriate antimicrobial agents can be prescribed.
4. Urinalysis results may show pyuria, bacteriuria, and varying degrees of hematuria.
5. Measurements of creatinine clearance, blood urea nitrogen, and creatinine levels
6. Blood cultures may be done on hospitalized patients with more severe illness.
7. Complete blood count

Medical management

Patients with acute uncomplicated pyelonephritis are most often treated on an outpatient basis if they are not exhibiting acute symptoms of sepsis, dehydration, nausea, or vomiting (Hinkle & Cheever, 2018).

1. Antibiotics: Parenteral antibiotics are started followed with a 2-week course of oral antibiotic agents is recommended because renal parenchymal disease is more difficult to eradicate than mucosal bladder infections. Examples of antibiotics prescribed

includes; Nitrofurantoin, Cefadroxil, Ciprofloxacin, Co-trimoxazole and Ampicillin. For patients who have allergies to penicillin, vancomycin can be used.

2. Analgesics: Nonsteroidal anti-inflammatory drugs (NSAIDs) work well to treat both pain and fever associated with acute pyelonephritis. Paracetamol is usually recommended over NSAIDs such as ibuprofen or aspirin due to risk of worsening the kidney problem.
3. Hydration with oral or parenteral fluids is essential in all patients with UTIs when there is adequate kidney function. Hydration helps facilitate "flushing" of the urinary tract and reduces pain and discomfort.
4. Antipyretics: parenteral antipyretics are recommended for initial reduction of fever followed by oral antipyretics such as paracetamol
5. Surgery: recurrent kidney infections may result from an underlying medical problem. In those cases, surgery may be required to remove any obstructions or to correct any structural problems in the kidneys. Surgery may also be necessary to drain an abscess that doesn't respond to antibiotics. In cases of severe infection, a nephrectomy may be necessary. In this procedure, a surgeon removes part of the kidney.

Nursing management

The patient may require hospitalization or may be treated as an outpatient (Hinkle & Cheever, 2018). Patient is nursed based on the underlisted parameters;

Reassurance

1. Patient is reassured that pain will be resolved
2. Patient is also introduced to other patients who have similar conditions as her and has had their treatment waiting to be discharged.
3. Relatives are also reassured that all necessary procedures will be done for client.

4. Diversional therapy such as watching of televisions and the use of slide pictures are provided to divert patients mind from their condition.

Reliving pain and improving nutrition

1. Give prescribed medication.
2. Patient to eats at regular intervals in relaxed atmosphere.
3. Encourage relaxation techniques.

Position

1. Patient is made comfortable on a well prepared admission bed with enough pillows for comfort.
2. Patient is made to assume a normal position which was not contrary to patient's health example supine position. This helps the patient to relax and reduce pain.
3. The patient is positioned to avoid neck pain and joint stiffness

Rest and sleep and stress reduction

1. A quiet environment is provided by reducing noise to allow patient to get enough rest.
2. Windows were opened to allow ventilation.
3. Visitors are also restricted to allow patient gets enough rest and sleep.
4. Bed is been made free from creases and cramps by straighten the bed linen.
5. Warm bath is given with warm water, soap, sponge and towel in order to relax patient and to induce sleep.

Observation

1. Patient's level of consciousness is observed to know whether client was unconscious, semiconscious, or fully conscious.

2. Vital signs were also checked and recorded which comprises of temperature, pulse, respiration and blood pressure.
3. Intake and output chart are also monitored by observing intake and output chart to know patient's fluid and electrolyte balance. Intravenous infusion is also monitored by observing the site of intravenous cannula for abnormalities such as swelling or pain at the site. The intravenous flow rate is also observed for the normal flow rate with respect to the total volume and duration of administration. The intravenous given set were also observed for clinging which will cause obstruction to the flow of the infusion.
4. The desired effect and side effect of drugs served were also observed.
5. Side effects of drugs should be observed and reported if any, as well as for signs of dehydration.
6. Patient's response to medication therapy, nutritional therapy and emotional rest was observed.

Personal Hygiene

1. Body hygiene is done by giving an assisted bed bath twice daily with warm water, soap, sponge and towel to prevent offensive odour and to remove microorganisms from the skin.
2. Bony prominences which are prone to be sore are well cared for by treating the area to prevent bed sore. Soiled bed linens are also changed when dirty or wet to prevent bad odour and harboring of microorganisms.
3. Oral hygiene is also done twice daily with toothpaste and toothbrush. This is done to prevent oral offensive smell and to prevent the harboring of micro bacteria.

4. Patient's hair is also cared for by washing it with soap and water and drying it with a towel.
5. Patient's hands and feet are cared for by soaking them in water and trimming the nails with nail clippers, washing and filling the nails. This will prevent harboring of microbes or prevent injury from scratching.

Nutrition/Diet

1. Unless contraindicated, 3 to 4 L of fluids per day is encouraged to dilute the urine, decrease burning on urination, and prevent dehydration
2. Food should be attractive to induce appetite, remove nauseating items around patient.
3. Provide food on time regularly served but in bits.
4. Take time to chew and swallow to avoid indigestion.

Preventing Recurrent Urinary Tract Infections

According to Hinkle and Cheever (2018), the nurse instructs the patient on the following basic information:

1. Shower rather than bathe in the tub because bacteria in the bathwater may enter the urethra.
2. Clean the perineum and urethral meatus from front to back after each bowel movement. This will help reduce concentrations of pathogens at the urethral opening and, in women, the vaginal opening.
3. Drink liberal amounts of fluids daily to flush out bacteria. It may be helpful to include at least one glass of cranberry juice per day.
4. Avoid coffee, tea, colas, alcohol, and other fluids that are urinary tract irritants

5. Void every 2–3 hours during the day, and completely empty the bladder. This prevents overdistention of the bladder and compromised blood supply to the bladder wall. Both predispose the patient to urinary tract infection. Precautions expressly for women include voiding immediately after sexual intercourse.
6. Take medication exactly as prescribed. Special timing of administration may be required.
7. Keep in mind that if bacteria continue to appear in the urine, long-term antimicrobial therapy may be required to prevent colonization of the periurethral area and recurrence of infection.
8. Notify the primary provider if fever occurs or if signs and symptoms persist.
9. Consult the primary provider regularly for follow-up.

Complications

Hinkle and Cheever (2018), mentioned the following as complications of pyelonephritis;

1. End-stage kidney disease
2. Hypertension
3. Kidney stones

1.11 Validation of Data

Validation is the extent to which a measure, indicator, or a method of data collection possesses the quality of being sound or true as far as it can be judged (Weller, 2014). All the information gathered from the patient was found to be true after comparing with information obtained from patient's relative through series of interviews. Also, the patient's folder provided the information to confirm the data collected. The information from the literature review also confirmed the data gathered. After collecting all this information, I realized that the data collected were similar and so considered valid for the study.

CHAPTER TWO

ANALYSIS OF DATA

2.0 Introduction

Analysis refers to a comprehensive examination of anything complex in order to find out its nature or to determine its essential features (Merriam-Wester, 2020). It also involves grouping identical materials meaningfully for the purpose of identification. This is the second stage of the nursing process and it deals with comparing data obtained on the patient with standards to help determine any deviation from normal physiological functions of the body and this help the nurse formulate appropriate nursing intervention. This chapter entails comparison of data with standards, patient/family strengths, patient/family health problems and the corresponding nursing diagnosis.

2.1 Comparison of Data with Standard

This is where the data collected on the health of the patient is compared with those in the literature review. These includes diagnostic investigations, causes, signs and symptoms, treatments and complications.

A. Diagnostic Tests/Investigations

Diagnosis is the process of identifying and determining the nature of a disease or disorder by its signs and symptoms, through the use of assessment techniques (e.g., tests and examinations) and other available evidence (American Psychological Association, 2020). These investigations were carried out on patient;

1. Full blood count
2. Blood film for malaria parasites
3. Urine routine examination

Table 2. 1: Comparison of Test Done to Literature

Test outlined in literature review	Test Carried out on Patient
1. Physical examination	1. Physical examination revealed flank pain
2. Imaging studies	2. Imaging studies were not performed
3. Urine culture and sensitivity	3. Urine culture and sensitivity was not performed
4. Urinalysis	4. Urine routine examination was performed
5. Blood urea nitrogen and creatinine	5. Blood urea nitrogen and creatinine was not performed
6. Blood cultures	6. Blood culture was not performed
7. Complete blood count	7. Full blood count was performed
8. Blood film for malaria parasite was not in literature review	8. Blood film for malaria parasite was performed

From the table 2.1, blood cultures, imaging studies, urine culture and sensitivity and blood urea nitrogen and creatinine were not performed because patient diagnosis was arrived and confirmed through physical examination, full blood count and urinalysis.

Blood film for malaria parasite was carried out because patient had a high body temperature and the possibility of malaria needed to be ruled out.

Table 2. 2: Results of Diagnostic investigations carried Out on Patient

Date	Specimen	Investigations	Results	Normal values	Interpretation	Remarks
11/12/21	Blood	**Full Blood Count** Haemoglobin	14.8g/dL	**Males:** 12g/dL - 18g/dL **Females:** 11g/dL - 16g/dL	Haemoglobin level was normal	Patient was encouraged to eat nutritious meals
		White Blood Cell	11.9 $x10^9$/L	4.5 $x10^9$/L - 10.0 $x10^9$/L	WBC count was abnormal indicating infection	Patient was prescribed ciprofloxacin and ceftriaxone
		Blood film for malaria parasite	Negative	Negative	Normal: No parasites detected	No treatment given
	Urine	**Urine R/E** Appearance	Cloudy	Clear	Abnormal	Patient was prescribed ciprofloxacin and ceftriaxone
		Bacteria	Present	Absent	Abnormal	Patient was prescribed ciprofloxacin and ceftriaxone
		Colour	Red	Colourless	Abnormal	Patient was prescribed ciprofloxacin and ceftriaxone
		Urine pH	7.8	4.6-7.5	Abnormal	Patient was prescribed ciprofloxacin and ceftriaxone
		Epithelial cells	4	<5	Normal	No treatment given

B. Causes of Patient's Condition

From the causes of pyelonephritis in the literature review, it can be confirmed that patient's condition was as a result of bacterial infection as indicated in the urinalysis results.

C. Clinical Manifestations Exhibited by Patient

Table 2. 3: Clinical Manifestations Exhibited by Madam. S.B as compared with Literature Review

Test in literature review	Test done on patient
1. Fever (38.0)	1. Patient had hyperpyrexia (40.3^{o}C)
2. Chills	2. Patient did not experience chills
3. Low back pain	3. Patient did not complain of low back pain
4. Flank pain	4. Patient complained of flank pain
5. Nausea	5. Patient complained of nausea
6. Vomiting	6. Patient vomited
7. Headache	7. Patient did not complain of headache
8. Malaise	8. Patient complained of a general feeling of discomfort
9. Dysuria	9. Patient did not complain of dysuria
10. Frequent urination	10. Patient did not complain of frequent urination
11. Urinary urgency	11. Patient did not complain of urinary urgency
12. Cloudy urine	12. Patient had cloudy urine
13. Fishy smelling urine	13. Patient urine did not smell fishy
14. Poor appetite	14. Patient complained of poor appetite
15. Polyuria	15. Patient did not experience polyuria
16. Excessive thirst	16. Patient did not complain of excessive thirst
17. Weight loss	17. Patient did not lose weight

Taking reference from the table 2.3, patient presented some clinical manifestations as stated in the literature review such as hyperpyrexia (40.3^{o}C), chills, flank pain, nausea, vomited, headache, general feeling of discomfort and cloudy urine. However, Madam S.B. did not experience clinical manifestations such as dysuria, excessive thirst, polyuria, fishy smelling urine, poor appetite, weight loss, low back pain, urinary urgency and urinary frequency.

D. Special Pharmacological Treatment Given

According to Weller (2016), Treatment refers to the mode of dealing with a patient or disease. The following medications were given to patient to enhance the restoration of health status to normal during her period of hospitalization;

1. Intravenous Ceftriaxone 2g daily x 24 hours
2. Intravenous Ciprofloxacin 400mg bd x 48 hours
3. Intravenous Normal saline 0.9% 2 liters for 48 hours
4. Intravenous Ringers lactate 1.5 liters x 24 hours
5. Intravenous Paracetamol 1g tds x 24 hours
6. Tablet Paracetamol 1g tds for 3days
7. Tablet Ciprofloxacin 500mg bd x 10 days

Table 2. 4: Treatment Given to Patient Compared with Literature Review

Medical Treatment in literature review	**Treatment given to patient**
1. Antibiotics such as Ciprofloxacin, Co-trimoxazole and Ampicillin	1. Antibiotics prescribed were ciprofloxacin and Ceftriaxone
2. Analgesic such as paracetamol	2. Analgesic prescribed was paracetamol
3. Hydration with oral or parenteral fluid	3. Parenteral fluids such as normal saline and ringers' lactate were prescribed.
4. Antipyretics such as paracetamol	4. Antipyretic prescribed was paracetamol
5. Surgery	5. Surgery was not performed

With reference from table 2,4, the treatments given to patient were in line with the literature and that ensured the speedy recovery of the patient.

Table 2. 5: Pharmacology of Drugs Administered to Patient

Date	Drug	Dosage/ Route of Administration (Literature)	Dosage/ Route of Administration Given to Patient	Classification	Desired Effect	Actual Action Observed	Side Effect/ Remedies
12/12/21	Paracetamol	**Dosage** 0.5–1 g every 4–6 hours; maximum 4g per day **Route** Oral, rectal and IV.	**Dosage** IV: 1g tds x 24 hours Oral: 1g tds x 3 days **Route** Intravenously and Orally	Anti-pyretic/ Analgesic	Has a central analgesic effect that is mediated through activation of descending serotonergic pathways.	Patient had a reduction in pain and temperature	Dark urine, skin reactions, liver damage following overdose. Patient experienced no side effects.
12/12/21	Intravenous normal saline (0.9%)	**Dosage** Amount depends on patient's fluid and electrolyte level. **Route** Intravenous	**Dosage** 2 liters for 48 hours **Route** Intravenous	Isotonic solution	To correct fluid and electrolyte imbalance	Patient's body fluids and electrolytes were raised	over hydration, hypocalcaemia. None of these side effects were observed.

Table 2.5: Pharmacology of Drugs Administered to Patient Cont'd…

Date	Drug	Dosage/ Route of Administration (Literature)	Dosage/ Route of Administration Given to Patient	Classification	Desired Effect	Actual Action Observed	Side Effect/ Remedies
12/12/21	Ciprofloxacin	**Dosage** IV: 400 mg every 12 hours Oral: 500mg every 12 hours **Route** Oral, IV	**Dosage** IV: 400mg bd for 48 hours Oral: 500mg bd x 10 days **Route** Intravenous	A broad-spectrum antibiotic of the fluoroquinolone class	An antibiotic used to treat a number of bacterial infections	Patient condition improved	heartburn, diarrhoea, pale skin. None of these side effects were observed.
12/12/21	Ringers Lactate	**Dosage** Amount depends on patient's fluid and electrolyte level. **Route** Intravenous	**Dosage** 1.5 litres for 24 hours **Route** Intravenous	Crystalloid (Isotonic solution)	Restores normal fluid and electrolyte balance especially bicarbonates	Patient was provided with the needed body fluid and electrolyte	Over hydration, hypocalcaemia, alkalosis None of these side effects were observed.

Table 2.5: Pharmacology of Drugs Administered to Patient Cont'd…

Date	**Drug**	**Dosage/ Route of Administration (Literature)**	**Dosage/ Route of Administration Given to Patient**	**Classification**	**Desired Effect**	**Actual Action**	**Side Effect/ Remedies**
12/12/21	Cefuroxime	**Dosage** 1g-2g daily every 12 hours **Route** Oral, IV, IM	**Dosage** 2g daily x 24 hours **Route** Intravenous	Third generation' Cephalosporin	Cephalosporins are antibacterials that attach to penicillin binding proteins to interrupt cell wall biosynthesis, leading to bacterial cell lysis and death.	Clients infection was controlled	Gastrointestinal disorders, Cutaneous vasculitis. None of these side effects were observed.

E. Complications

With reference to the complications listed in the literature review, patient exhibited no complication due to the appropriate medical and nursing care rendered and her cooperation to the treatment regimen.

2.2 Patient/Family Strengths

Strength refers to the quality or state of being strong (Merriam-Wester, 2020). The following strengths were observed on patient during the time of nursing care.

1) Patient was able to verbalize that her body was very warm to touch
2) Patient could express the intensity of pain
3) Patient was able to report vomiting
4) Patient was able to take 1/3 of 400ml of porridge served.
5) Patient could verbalize the level of anxiety
6) Patient could tolerate simple daily activities such as walking from bed to washroom
7) Patient was able to identify at most a risk factor and a symptom of pyelonephritis

2.3 Patient's Health Problems

Problem is defined as a question raised for inquiry, consideration, or solution (Merriam-Wester, 2020). During assessment, patient presented with the following health problems:

1. Patient had high temperature (40.3℃) (12/12/ 2021)
2. Patient complained of right flank pain (12/12/ 2021)
3. Patient vomited (12/12/ 2021)
4. Patient complained of loss of appetite (13/12/ 2021)
5. Patient complained of anxiety (13/12/ 2021)
6. Patient complained of body weakness (13/12/ 2021)
7. Patient had insufficient information on her condition (14/12/ 2021)

2.4 Nursing Diagnosis

According to Hinkle and Cheever (2014), nursing diagnosis is the organization, analysis, synthesis and summarization of data collected and determines the patient's need for care.

1. Hyperthermia (40. 3^0C) related to infectious process of the kidneys (12/12/ 2021)
2. Acute pain related to the inflammatory process in the kidney (12/12/ 2021)
3. Risk for fluid volume deficient as evidenced by vomiting (12/12/ 2021)
4. Risk for imbalance nutrition (less than body requirement) as evidenced by insufficient dietary intake (13/12/ 2021)
5. Ineffective coping (anxiety) related to unfamiliar environment, existence of symptoms of unknown outcome of disease condition (13/12/ 2021)
6. Activity intolerance related to general feeling of discomfort (malaise) (13/12/ 2021)
7. Knowledge deficit related to insufficient information on the risk factors, clinical manifestation and the treatment modalities of pyelonephritis (14/12/ 2021)

CHAPTER THREE

PLANNING FOR PATIENT/FAMILY CARE

3.0 Introduction

This chapter consists of the actual plan of nursing care which is to be rendered to the patient and her family. The nursing care plan is a systematic approach in carrying out individualized and holistic care to the patient and family. It is also a communicative tool of the health team, especially nurses. Presented on the next page and the pages that follow is the Nursing Care Plan for Madam S.B. and her family. This table contains date and time of the Nursing Diagnosis, Objective/Outcome Criteria for each Nursing Diagnosis, Nursing Orders and their corresponding Nursing Interventions, and Evaluation of the set Objective.

3.1 Objectives/ Outcome Criteria

1. Patient will attain optimal temperature (36.2^{o}C-37.2 ^{o}C) within 72 hours as evidence by;
    a. Patient verbalizing that she no more feel warm
    b. Nurse recording patient's temperature within a normal range
2. Patient would be relieved of pain in the right flank within 24 hours as evidence by:
    a. Patient verbalizing the relief of pain
    b. Nurse observing patient comfortably relaxing in bed with a cheerful face.
3. Patient fluid volume would be maintained throughout hospitalization as evidence by;
    a. Patient verbalizing resolution of vomiting.
    b. Nurse assessing that patient has skin turgor, moist skin, reported no thirst and normal urine output
4. Patient will maintain nutritional balance within 48 hours as evidence by:
    a. Patient verbalizing that she can eat better

b. Nurse observing that patient eat at least half of meal served

5. Patient would be relieved from anxiety within 24 hours as evidence by;
    a. Patient verbalizing that she is no more anxious
    b. Nurse observing patient having relaxed facial expression.
6. Patient's fatigue will be resolved within 48hrs as evidence by;
    a. Patient verbalizing that she is no longer weak
    b. Nurse observing patient performing activities of daily living.
7. Patient and relatives would have sufficient information on pyelonephritis 6 hours as evidence by:
    a. Patient and relatives enumerating three predisposing factors, clinical manifestations and three treatment modalities to pyelonephritis
    b. Nurse observing patient utilizing the knowledge gain on pyelonephritis into practice and answering questions posed to her on pyelonephritis.

Table 3. 1: Nursing Care Plan for Madam S.B.

Date/ Time	Nursing Diagnosis	Objectives/Outcome Criteria	Nursing Order	Nursing Intervention	Date/ Time	Evaluation	Sign
12/12/21 9:00am	Hyperthermia (40. 3^0C) related to infectious process of the kidneys	Patient's will attain an optimal temperature (36.2^{o}C-37.4^{o}C) within 72 hours as evidence by; a. Patient verbalizing that she no more feel warm b. Nurse recording patient's temperature within a normal range	1. Reassure patient 2. Encourage patient to bath look-warm water. 3. Monitor patient temperature regularly. 4. Ensure good ventilation 5. Serve prescribed antipyretic 6. Serve prescribed antibiotics	1. Patient was reassured that her temperature will be normal (36.2-37.4). 2. Patient was encouraged to bath look-warm water. 3. Patient temperature was regularly monitored. 4.Nearby windows were opened and fans were switch on 5. IV Paracetamol 1g was administered 6. IV Ceftriaxone 2g was administered.	15/12/21 9:00am	Goal fully met at as patient verbalized she no more feels warm and nurse recorded patient's temperature within range (37.1^{O}C)	A.F.

Table 3.1: Nursing Care Plan for Madam S.B. Cont'd…

Date/ Time	Nursing Diagnosis	Objectives/Outcome Criteria	Nursing Order	Nursing Intervention	Date/ Time	Evaluation	Sign
12/12/21 9:10am	Acute pain related to the inflammatory process in the kidney	Patient would be relieved of pain in the right flank within 48 hours as evidence by: a. Patient verbalizing the relief of pain b. Nurse observing patient comfortably relaxing in bed with nice facial expression	1. Reassure patient that her level of pain will reduced. 2. Assess patient pain using numerical rating scale from (0-10) 3. Assist and put patient in a comfortable position 4. Apply cold compresses to the flank to soothe pain 5. Serve prescribed analgesic. 6. Engage patient in diversional activities	1.Patient was reassured that she will be relief of pain after mediation 2. Pain was assessed using numerical rating scale and patient rated pain as 6. 3. Patient was assisted and put into left lateral position 4. Cold compresses were applied 5. IV Paracetamol 1g was administered 6. Patient was engaged in watching an interesting movie.	14/12/21 9:10am	Goal fully met as patient verbalized relief of pain and nurse observed patient comfortably relaxed in bed with a nice facial expression	A.F.

Table 3.1: Nursing Care Plan for Madam S.B. Cont'd…

Date/ Time	Nursing Diagnosis	Objectives/Outcome Criteria	Nursing Order	Nursing Intervention	Date/ Time	Evaluation	Sign
12/12/21 9:20am	Risk for deficient fluid volume as evidenced by vomiting	Patient fluid volume would be maintained throughout hospitalization as evidence by; a. Patient verbalizing resolution of vomiting. b. Nurse assessing that patient has good skin turgor, moist skin, reported no thirst and normal urine output	1. Assess for signs and symptoms of dehydration 2. Monitor intake and output chart. 3. Assess blood pressure regularly 4. Educate patient on fluids needs 5. Check and record patient vital signs 6. Encourage copious fluids intake.	1. Clinical features of dehydration was assessed, patient had good skin turgor, moist skin and mucus membrane and reported no thirst. 2. Intake and output chart was monitored. 3. Patient blood pressure was checked and recorded 4. Patient was educated on fluid needs 5. Patient vitals were checked and recorded every 4hours 6. Patient took 500mls of orange juice everyday with 2500mls (5 glasses) of water.	16/12/21 9:20am	Goal fully met as patient verbalized resolution of vomiting and nurse assessed that patient had good skin turgor, moist skin, reported no thirst and normal urine output	A.F.

Table 3.1: Nursing Care Plan for Madam S.B. Cont'd…

Date/ Time	Nursing Diagnosis	Objectives/Outcome Criteria	Nursing Order	Nursing Intervention	Date/ Time	Evaluation	Sign
13/12/21 7:00am	Risk for imbalance nutrition (less than body requirement) as evidenced by insufficient dietary intake	Patient will maintain nutritional balance within 48 hours as evidence by: a. Patient verbalizing that she can eat better b. Nurse observing that patient eat at 2/3 of 400ml of porridge served	1. Reassure patient that she will be able to eat well 2. Plan diet with patient 3. Ensure good oral hygiene 4. Feed patient in bit at regular interval 5. Serve patient diet attractive. 6. Describe and record food intake	1. Patient was reassured that she will be able to eat well 2. Meals were plan with patient to know her likes and dislikes 3. Patient mouth was cared for using tooth paste before meal and rinsed with water after meals to stimulate appetite and remove food debris 4. Patient was fed in bit at regular interval 5. Patient meals were served in an attractive manner. 6. Food was described and recorded such as ingesting 20 tea spoon of rice with beans stew and 330mls of fruits juice (pineapple) served.	15/12/21 7:00am	Goal fully met as patient verbalized that she can eat better and nurse observed that patient ate at 2/3 of 400ml of porridge served	A.F.

Table 3.1: Nursing Care Plan for Madam S.B. Cont'd…

Date/ Time	Nursing Diagnosis	Objectives/ Outcome Criteria	Nursing Order	Nursing Intervention	Date/ Time	Evaluation	Sign
13/12/21 8:00am	Ineffective coping (anxiety) related to unfamiliar environment, existence of symptoms and unknown outcome of disease condition	Patient would be relieved from anxiety within 24 hours as evidence by; a. Patient verbalizing that she is no more anxious b. Nurse observing patient having relaxed facial expression	1. Reassure patient that she is in hands of a competent health team 2. Allow patient to express her fear and concern 3. Introduce health team members to the patient 4. Orientate patient to the ward, equipment and daily routine at the ward 5. Explain all procedures and interventions to the patient. 6. Provide calm and quite environment, and encourage the patient to seek assistance when required.	1.Patient was reassured that adequate measures would be put in place to help relieved of her anxiety. 2. Patient was allowed to express her fears and concern and appropriate answers were provided. 3. Health team members were introduced to patient. 4. Patient was oriented to the ward, equipment and daily routine at ward in other to reduce her level of anxiety. 5. All nursing procedures and interventions were explained to patient to help gain her cooperation. 6. A busy and noisy environment was prevented to reduce the anxiety level of patient and she was encourage to seek assistance to help reduce anxiety.	14/12/21 8:00am	Goal fully met as patient verbalized that she is no more anxious and nurse observed patient having relaxed facial expression	A.F.

Table 3.1: Nursing Care Plan for Madam S.B. Cont'd…

Date/ Time	Nursing Diagnosis	Outcome Criteria	Nursing Order	Nursing Intervention	Date/ Time	Evaluation	Sign
13/12/21 10:00am	Activity intolerance related to general feeling of discomfort (malaise)	Patient's fatigue will be resolved within 48hrs as evidence by ; a. Patient verbalizing that she is no longer weak b. Nurse observing patient performing activities of daily living .	1. Reassure patient that she would be relieve of her weakness. 2. Assist patient in some of her daily activities. 3. Raise side rails to prevent patient from falling. 4. Help patient assume a comfortable position in bed. 5. Restrict visitors to prevent interruptions in resting period of the patient. 6. Educate on the need to perform self-care activities	1. Patient was reassured of competent nursing care and that her weakness will be relieved. 2. Patient was assisted in some of her daily activity performance. 3. Side rails were raised to prevent her from falling. 4. Patient was helped to assume a comfortable position in bed (left lateral). 5. Visitors were restricted to prevent interruptions in resting periods of the patient. 6. Patient was educated on the need to perform self-care activities	15/12/21 10:00am	Goal fully met as patient verbalized that she is no longer weak and nurse observed patient perform activities of daily living	A.F.

Table 3.1: Nursing Care Plan for Madam S.B. Cont'd…

Date/ Time	Nursing Diagnosis	Objective/Outcome Criteria	Nursing Order	Nursing Intervention	Date/ Time	Evaluation	Sign
14/12/21 10:00am	Knowledge deficit related to insufficient information on the risk factors, clinical manifestations and the treatment modalities of pyelonephritis	Patient and relatives would have sufficient information on pyelonephritis within 6 hours as evidence by: a. Patient enumerating three predisposing factors, clinical features, three treatment modalities of the condition b. Nurse observing patient and relative utilizing knowledge gained on pyelonephritis	1. Ensure a noise free environment when educating patient on the condition. 2. Explain all procedures to patient to gain her attention and cooperation. 3. Assess patient knowledge concerning the diagnosis risk factors etc. 4. Explain to the patient and family the risks factors, clinical manifestation and treatment modalities of pyelonephritis. 5. Allow patient and family verbalized knowledge gained on pyelonephritis. 6. Answer patient and relative's question in a simple and clear language tactfully	1. Noise free environment was ensured during the education on the condition 2. All procedures were clearly explained to the patient and her family. 3. Patient and relatives knowledge concerning the diagnosis, risk factors on condition was assessed. 4. The risks factors, clinical manifestation and treatment of pyelonephritis were explained to patient and the family. 5. Madam S.B. and her relatives tried answering a lot of questions that were asked on pyelonephritis. 6. A clear language was used in answering Madam S.B. and her relatives tactfully	14/12/21 4:00pm	Goal fully met as patient and relatives enumerated three predisposing factors, clinical features, three treatment modalities of the condition b. Nurse observed patient and relative utilizing knowledge gained on pyelonephritis	A.F.

CHAPTER FOUR

IMPLEMENTATION OF PATIENT/FAMILY CARE PLAN

4.0 Introduction

The implementation phase of the nursing process involves carrying out the proposed plan of nursing care. The nurse assumes responsibility for the implementation and coordinates the activities of all those involved in implementation, including the patient and family, other members of the nursing team, and other members of the health care team, so that the schedule of activities facilitates the patient's recovery (Hinkle & Cheever, 2018). This chapter forms the fourth part of the patient/family care study and is the fourth stage in the nursing process. Implementation is the process of putting a decision or plan into effect or execution. It provides detailed information of the actual nursing care that was given to the patient/family from the day of admission until discharged based on the identified patient's health problems. This chapter also includes the patient and family's preparation towards discharge, home visit and continuity of care.

4.1 Summary of The Actual Nursing Care

The actual nursing care rendered to my patient and her family commenced on the day of admission, 12th December, 2021 to the time the care was terminated, 24th December, 2021. The management of patient and her family was planned to meet their physiological, psychological, emotional and spiritual needs

First Day of Admission (12th December 2021)

On 12th December, 2021 at 9:00am, patient was received into the Female Medical Ward from the Accident and Emergency Unit per ambulation accompanied by a staff nurse and a relative (mother) with the diagnosis of acute pyelonephritis.

Patient particulars were collected from the accompanying staff nurse. Patient and relative were welcomed and offered seats. Self-introduction was done, staffs present were also introduced to the patient. Patient was made comfortable in an already prepared admission bed.

The patient's identity was verified by mentioning her name for her to respond. Vital signs were checked and recorded accurately as follows:

1. Temperature 40.3^{o}C
2. Pulse 100bpm
3. Respiration 25cpm
4. Blood Pressure 100/80mm/Hg

Patients weight 50kg

Patient was introduced to her roommates and was assured of the competency of the healthcare team. They were also oriented to the ward and its annexes. She was asked to get her own bowl, spoon, drinking cup, bathing sponge, bucket, towel, pyjamas and other toiletries.

On admission, patient looked unwell with a satisfactory level of hydration. She complained of flank pain, fever and vomiting . Physical examination on the patient was performed from head to toe and no abnormalities were seen. Hospital policies regarding visiting periods, payment of bills and the time vital signs will be checked were explained. Patient was properly orientated to the ward and its annexes. She was reassured to allay fears.

A head to toe physical examination was conducted on patient and no abnormalities were seen. Patent was oriented to time, place and person. During assessment, she complained of flank pain, nausea and vomiting.

The following treatment plan were ordered:

1. Intravenous Ceftriaxone 2g daily x 24 hours

2. Intravenous Ciprofloxacin 400mg bd x 48 hours
3. Intravenous Normal saline 0.9% 2 liters for 48 hours
4. Intravenous Ringers lactate 1.5 liters x 24 hours
5. Intravenous Paracetamol 1g tds x 24 hours
6. Tablet Paracetamol 1g tds for 3days
7. Tablet Ciprofloxacin 500mg bd x 10 days

These investigations were ordered and carried out on patient;

1. Full blood count
2. Blood film for malaria parasites
3. Urine routine examination

I reintroduced myself to patient as a student nurse of the Holy Family Nursing and Midwifery Training College, Berekum, who would like to take her and her family for a patient/family care study. Madam S.B. and her family were informed that the care study is a requirement by the Nursing and Midwifery Council of Ghana in partial fulfillment towards the award of license in Diploma in Registered General Nursing. Explanation of the concept of the patient/family care study was done to patient and her family. They were assured absolute privacy and confidentiality. It was added that a report will be written after the entire event. Madam S.B. and her relative agreed to the request and assured me of providing the necessary information and assistance. They were congratulated on such a decision. Discharge planning was initiated with the relatives; thus, they were told that the hospital will be a temporal place for their care and would have to continue the care at home once there is an improvement in her condition. Her particulars such as such as name, sex, age, occupation, health insurance status and residential address were entered into the admission and discharge book and the daily ward state. The ward in-charge was informed about the interest in using this patient for

care study and she granted me the permission to move on with the study. I decided to choose this patient for the study because I wanted to get a deeper understanding about the causes, signs and symptoms, prevention and treatment of pyelonephritis and to be able to differentiate it from other similar renal conditions. A care plan was drawn to initiate nursing care.

At 9:00am, patient had high body temperature of 40.3^0C. A nursing diagnosis of Hyperthermia (40. 3^0C) related to infectious process of the kidneys was formulated. An objective was set to help patient attain an optimal temperature (36.2-37.4) within 72hours. These interventions were carried out to reduce patient temperature. Patient was reassured that her temperature will be normal by explaining procedures to regain normal body temperature. Patient was encouraged to bath look-warm water patients temperature was rechecked and nearby windows were opened and fans were switch on to improve ventilation in the room. Prescribed IV Paracetamol 1g and IV Ceftriaxone 2g were administered.

At 9:10am patient complain of flank pains. A nursing diagnosis of Acute pain related to the inflammatory process in the kidney was formulated. A goal was set for Madam S.B. to be relieved of her pain within 48 hours. Patient was reassured that she will be relieved of pain after mediation and pain was assessed using the numeric rating scale of 0-10. 0 means no pain and 10 unbearable pains and patient rated pain as 6. Patient was assisted and put into left lateral position. Cold compresses were applied. Prescribed IV Paracetamol1g was administered and patient was engaged in watching an interesting movie.

Patient complains of vomiting at 9:20am. A nursing diagnosis of Risk for deficient fluid volume as evidenced by vomiting was formulated. An objective was set to maintain normal fluid level throughout hospitalization as evidence by; patient verbalizing resolution of vomiting, and patient having good skin turgor, moist skin and mucous membrane normal

urine output and absence of thirst. The following interventions were performed on the patient. Clinical features of dehydration was assessed patient had good skin turgor, moist skin and mucus membrane and report no thirst. Patient blood pressure was checked and recorded to assess loss of fluids level, and intake and output chat was monitored. Patient took 500mls of orange juice everyday with 2500mls (5 glasses) of water.

At 1:30pm, She was served with plane rice with cabbage stew and sliced orange as lunch.
At 2:00pm, patients' vital signs were checked and recorded as indicated in the appendix.
Patient slept for about 3 hours and woke up around 5:20pm.
She took her supper which was ampesi and beans stew at 5:40pm.
At 6:00pm, patients' vital signs were checked and recorded as indicated in the appendix and due medications were administered.
At 6:30pm, patient was assisted in carrying out her personal hygiene needs by gathering her bathing supplies for her.
At 10:00pm, patients' vital signs were checked and recorded as indicated in the appendix, due medications were administered. Patient slept around 10:10pm.

Second Day of Admission (13th December, 2021)

Madam S.B. slept uninterruptedly throughout the night and woke up at 5:30am. She brushed her teeth and had an assisted bath. She was served with porridge and bread as breakfast which she could not eat well. Patient vital signs was checked and recorded as;

Temperature	36.8^0C
Pulse	92bpm
Respiration	24cpm
Blood pressure	120/80mmhg

At 6:50am, patient took hausa porridge with bread as breakfast. Patient could only eat a very small portion of the food. Upon interacting with the patient on reason why she couldn't finish her meal she complained of not having appetite for food.

At 7:00am, a nursing diagnosis of Risk for imbalance nutrition (less than body requirement) as evidenced by insufficient dietary intake was formulated. An objective was set to maintain patient's nutritional balance within 48 hours. The following interventions were implemented: Patient was reassured that she will be able to eat well. Meals were plan with patient to know her likes and dislikes. Patient mouth was cared for using tooth paste before meal and rinsed with water after meals to stimulate appetite and remove food debris. Patient was fed in bit at regular interval. Patient meals were served in an attractive manner. Food was described and recorded such as ingesting 20 tea spoon of rice with beans stew and 330mls of fruits juice (pineapple) served.

At 8:00am patient was observed being anxious due the change in the environment and unknown outcome of disease condition. A nursing diagnoses of Ineffective coping (anxiety) related to unfamiliar environment, existence of symptoms and unknown outcome of disease condition was formulated. An objective was set to relieve patient from anxiety within 24 hours. Interventions were made on the patients to reduce her anxiety level; Patient was reassured that adequate measures would be put in place to relieve her from anxiety. Patient was allowed to express their fears and concern and appropriate answers were provided, health team members were introduced to patient, patient was oriented to the ward, equipment and daily routine at ward in other to reduce her level of anxiety, all nursing procedures and interventions were explained to patient to help gain her cooperation, a busy and noisy environment was prevented to reduce the anxiety level of patient and she was encourage to seek assistance to help reduce anxiety.

At 9:15am, she was reviewed by Dr. J.O.O. plan, the doctor emphasized that her oral hygiene should be ensured and also food should be served with fruits and vegetables, continue ordered medications. Patient was allowed to ask questions and they were answered truthfully.

At 10:00am, patient verbalized she was anxious and a nursing diagnosis of Activity intolerance related to general feeling of discomfort (malaise) was made. An objective was set to help resolve patient's fatigue within 48 hours. The following interventions were implemented; Patient was reassured of competent nursing care and that her weakness will be relieved. Patient was assisted in some of her daily activity performance. Side rails were raised to prevent her from falling. Patient was helped to assume a comfortable position in bed (left lateral). Visitors were restricted to prevent interruptions in resting periods of the patient. Patient was educated on the need to perform self-care activities.

At 12:50pm patient was served with her lunch which was boiled yam with vegetable stew and a cup of orange juice.

At 2:00pm, her vitals were checked and recorded as indicated in the appendix. Patient was made comfortable.

The first home visit was conducted at 3:00pm to Sofokyere. Permission was granted by the ward in-charge and patient was informed on the purpose of the home visit. I left the ward around 3:00pm.

At 5:30pm, patient ate banku and groundnut soup with fish and banana as supper.

At 6:00pm, patients' vital signs were checked and recorded as indicated in the appendix.

A 6:40pm, she maintained her evening routines that promotes sleep such as toileting, bathing, oral hygiene.

At 10:00pm, patients' vital signs were checked and recorded as indicated in the appendix, due medications were administered. Patient was put to sleep at 10:30pm.

Third Day of Admission (14th December 2021)

Madam S.B. woke up at 5:20am in the morning with smiles all over her face. She performed proper personal hygiene when she woke up. Vital signs were checked and recorded as follows:

Temperature	36.2^0C
Pulse	90bpm
Respiration	19cpm
Blood Pressure	117/80mmHg

Her due medications were administered.

At 7:00am, she was served with Milo and bread as breakfast.

At 8:00am an objective which was set on 13th December, 2021 to relive patient from anxiety within 24 hours was evaluated and goal was fully met as patient verbalized that she is no more anxious and nurse observed patient having relaxed facial expression.

At 9:10am an objective which was set on 12th December, 2021 to relieve patient from right flank pain within 48 hours was evaluated and goal was fully met as patient verbalized relief of pain and nurse observed patient comfortably relaxed in bed with a nice facial expression.

Patient was reviewed by Dr. J.O.O. at 9:30am during ward rounds and the pan was to continue treatment.

At 10:00am, upon interacting with patient on her condition I realized she had little information of pyelonephritis. A nursing diagnosis of Knowledge deficit related to

insufficient information on the risk factors, clinical manifestations and the treatment modalities of pyelonephritis was formulated. An objective was set to help patient and relatives have sufficient information on pyelonephritis within 6 hours The following interventions were carried out: Noise free environment was ensured during the education on the condition, All procedures were clearly explained to the patient and her family, Patient and relatives knowledge concerning the diagnosis, risk factors on condition was assessed, the risks factors, clinical manifestation and treatment of pyelonephritis were explained to patient and the family, Madam S.B. and her relatives tried answering a lot of questions that were asked on pyelonephritis, a clear language was used in answering Madam S.B. and her relatives tactfully.

At 12:55pm patient took fufu with light soup with pineapple juice as lunch.

Her vital sing were checked and recorded at 2:00pm as

Temperature	37.2^0C
Pulse	88bpm
Respiration	19cpm and
Blood Pressure	110/80mmHg.

At 4:00pm, an objective which was set on 14th December, 2021 at 10:00am to provide patent and relatives sufficient information on pyelonephritis within 6 hours was evaluated and goal was fully met as patient and relatives enumerated three predisposing factors, clinical features, three treatment modalities of the condition and nurse observed patient and relative utilizing knowledge gained on pyelonephritis.

At 5:20pm patient was served with banku with vegetable soup as supper.

At 6:00pm, her vitals were checked and recorded as indicated in the appendix. Due medications were administered per treatment sheet. Patient watched the ward television after taking care of her personal hygiene needs.

At 10:00pm, patients' vital signs were checked and recorded as indicated in the appendix, due medications were administered. Patient was put to sleep at 10:20pm.

Fourth Day of Admission 15th December, 2021.

Madam S.B. woke up at 5:50am in the morning. She was assisted to performed proper personal hygiene when she woke up. She ate oat and bread as breakfast and verbalize that she could now eat well. At 6:00am, due medications were administered and vital signs were checked and recorded as follows:

Temperature	37.1^0C
Pulse	90bpm
Respiration	22cpm
Blood Pressure	120/80mmHg

At 6:50am, she took her breakfast which was porridge with koose.

At 7:00am an objective which was set on 13th December, 2021 to maintain patient nutritional balance within 48 hours was evaluated and goal was fully met as patient verbalized that she can eat better and nurse observed that patient ate at 2/3 of 400ml of porridge served.

At 9:00am an objective which was set on 12th December, 2021 to reduce patient temperature to normal range within 72hours was evaluated and goal was fully met as patient verbalized she no more feels warm and nurse recorded patient's temperature within range (37.1^OC).

She was reviewed by Dr. J.O.O. at 9:45am, which her plan was to continue treatment and a possible discharge the next day if her condition remains stable.

At 10:00am evaluation of set objective on 13th December, 2021 to resolve patients fatigue within 48 hours was done and goal was fully met as patient verbalized that she is no longer weak and nurse observed patient perform activities of daily living. Following which her vital signs were checked and recorded as per appendix.

She ate rice and stew at 1:40pm with sliced pawpaw.

Patient 2:00pm vital signs were checked and recorded as in the appendix. Due medications were served.

Patient had an early bath at 5:40pm. She ate kenkey with stew and a glass of water as she demanded.

At 6:00pm, her vitals were checked and recorded as in the appendix. Due medications were administered per treatment chart.

At 10:00pm, patients' vital signs were checked and recorded as indicated in the appendix, due medications were administered. Patient was put to sleep at 10:30pm.

Day of Discharge (16th December, 2021).

Madam S.B. woke up looking cheerful and calm. I saw a great improvement in my client as she took her bath and brush her teeth unassisted. She was served with tea and bread as breakfast. All due medication were administered and she verbalize that there is no body weakness. Vital signs were checked and recorded as follows:

Temperature	37.0^0C
Pulse	90bpm

Respiration 20cpm

Blood Pressure 120/80mmHg.

At 9:20am an objective which was set on 12th December, 2021 to maintain patient fluid volume throughout hospitalization was evaluated and goal was fully met as patient verbalized resolution of vomiting and nurse assessed that patient had good skin turgor, moist skin, reported no thirst and normal urine output.

She was reviewed by Dr. J.O.O. at 10:15am. She was looking strong with no complains and was declared medically fit and discharged by the doctor to go home. She went to settle her bills at the billing department but her bills were covered by the National Health Insurance Scheme. Her name was then written in admission and discharges book as well as the daily wards state.

Patient and relative were educated on the medications and the importance of continuity of care at home. She was asked to come for a review on 22nd December 2021. She was assisted in parking her clothing and belongings. I accompanied her and the sister to the car stop where they took a taxi then I waved them bye. She went home around 2:00pm.

I came back to the ward and decontaminated the bed and other accessories for reuses.

4.2 Preparation of Patient/ Family for Discharge and Rehabilitation

Preparation of my client for discharge and rehabilitation started on her first day on the ward till the last day she left the ward. This was aimed at restoring and maintaining good health of the patient and family. Madam S.B. was reassured that with prompt and effective nursing and medical care, her health will be restored soon.

Pyelonephritis was discussed with Madam S.B. with emphasis on causes, signs and symptoms, prevention and the rationale behind all nursing and management of her condition.

The need to seek prompt medical attention if any family member begins to show signs and symptoms of pyelonephritis was also stressed she agreed and understand everything. On 15th December 2021, Madam S.B. was discharged by Dr. J.O.O. who took care of her. She was asked to come for a review on 22nd December 2021. Madam S.B. was reminded that an additional two visit will be made before termination of care. I expressed my gratitude to Madam S.B. for her cooperation in the care rendered. Madam S.B. was discharged from the admission and discharge book and the daily ward state.

4.3 Follow–Up/Home Visits and Continuity of Patient/ Family

These are visits aimed at ensuring continuity of care after the discharge of the patient from the hospital. Follow-up visits enable the nurse to identify problems encountered by the patient while at home and on medications.

During my interaction with Madam S.B., I explain to her that I will be paying her visits to ensure proper continuity of care.

First Home Visit

The first home visit was conducted on the 13th December 2021 at 3:00pm before the discharge of Madam S.B. The purpose of this visit was to familiarize myself with the family and the home environment and to identify some health problems and help solve them. It was also to prepare the house for the discharge of the patient. A day before this visit, I met three of patient's relatives at the ward and scheduled my visit with them. I took a car from Berekum station to Sofokyere at exactly 3:00pm and reached Sofokyere last stop at 3:20pm then I preceded on foot to the patient house. The road from Berekum to Kato is tarred but from Kato to Sofokyere is untarred. The house is located 20 minutes away from the Sofokyere last stop when walking. The building is made up of blocks and aluminum roofing sheet. The building is painted yellow with a coconut tree and a well decorated environment

with flowers. According to patient she lived is her father's house. The house has almost all the necessary facilities such as toilet, washrooms, good water system(tap) etc, making the house a good housing system. I was given a warm reception by Madam S.B's family. I was offered a seat in the living room and a cup of water, as custom demands. I was asked of my mission and I briefly explained my mission to them and reassure them that Madam S.B. will be completely fine hopefully after scheduled follow-ups. Her relatives were also examined and realized that greater attention is given to their personal hygiene as evidenced by their neatly appearance. I also observed that there was a dust bin besides the building where they gather all their refuse in and disposed it at the village refused dump the next morning. At 4:00pm I asked the permission to leave and promised to be back for two subsequent visits. I thanked them for their warm reception and bid them goodbye.

Second Home Visit

The second home visit was made on the 21stDecember, 2021. The purpose of this visit was to remind them of the review date and to assess the patient's response to the medications.
Prior to this visit, a schedule had been made with the patient and her family. On my arrival, I inquired of the health of the family and they said everybody is fine. Madam S.B. said she was also fine. I congratulated her and took the opportunity to educate her on the need to complete medications. I encouraged her to take in more fluid, fruit and vegetables and also to take some walk and to return gradually to her normal activities.
During this time, I remembered them of the review date (22nd December 2021) and encouraged them to pay attention to review schedules.

Review Day

On 22nd December 2021 Madam S.B. came to the hospital at 8:30am. I helped her to activate her folder at the records department. Upon my interaction with patient, I observed that her condition had really improved.

Patient's vital signs was checked and recorded as;

Temperature	36.6°C
Pulse	88bpm
Respiration	23cpm
Blood pressure	110/80mmHg

Patient weight was 51kg

Patient was escorted to consulting room of the out-patient department and upon assessment by the doctor he confirmed the condition had improved. No medication was given to her and was advised not to play in sand and should wash hands frequently. Patient mother thanked me, I escorted them to the gate and bade them goodbye.

Third Home Visit

My third home visit to Madam S.B's residence was on the 24th December 2021. It was also my final visit. Its purpose was to provide them with heath education on aspect not discussed in my previous visit, and to terminate the care rendered to patient.

I arrived at the house at 10:00am. Upon my arrival, the family welcomed me warmly and offered seat and water to drink. Mission of my visit was briefly explained. I handed over the patient to her mother for the continuity of care at home. They enjoyed the health related discussions and promise to put all they have been learnt into good use. They also expressed

their heartfelt appreciation for such enlightens. I thanked them for their cooperation and asked permission to leave.

CHAPTER FIVE

EVALUATION OF CARE RENDERED TO PATIENT

5.0 Introduction

Evaluation in simple terms is the outcome of nursing actions against anticipated goals (Hinkle and Cheever, 2018). This chapter gives information about the statement of evaluation, amendment of nursing goals and the termination of care rendered to the patient and family.

5.1 Statement of Evaluation

During the care of Madam S.B. objectives were set for health problems identified. With good nursing management and cooperation from my client and family, set goals were achieved and patient's health status improved.

1. Patient Had Normal Body Temperature (15th December, 2021)

On 12th December, 2021, at 9:00am, patient had high body temperature of 40.3^0C. A nursing diagnosis of Hyperthermia (40. 3^0C) related to infectious process of the kidneys was formulated. An objective was set to help patient attain an optimal temperature (36.2-37.4) within 72hours. These interventions were carried out to reduce patient temperature. Patient was reassured that her temperature will be normal by explaining procedures to regain normal body temperature. Patient was encouraged to bath look-warm water patients temperature was rechecked and nearby windows were opened and fans were switch on to improve ventilation in the room. Prescribed IV Paracetamol 1g and IV Ceftriaxone 2g were administered.

On 15th December, 2021 at 9:00am, an objective which was set on 12th December, 2021 to reduce patient temperature to normal range within 72hours was evaluated and goal was fully met as patient verbalized she no more feels warm and nurse recorded patient's temperature within range (37.1^OC).

2. Patient Was Relieved of Flank Pain (14th December, 2021)

On 12th December, 2021, at 9:05am, 9:10am patient complain of flank pains. A nursing diagnosis of Acute pain related to the inflammatory process in the kidney was formulated. A goal was set for Madam S.B. to be relieved of her pain within 48 hours. Patient was reassured that she will be relieved of pain after mediation and pain was assessed using the numeric rating scale of 0-10. 0 means no pain and 10 unbearable pains and patient rated pain as 6. Patient was assisted and put into left lateral position. Cold compresses were applied. Prescribed IV Paracetamol 1g was administered and patient was engaged in watching an interesting movie.

On 14th December, 2021 at 9:10am an objective which was set on 12th December, 2021 to relieve patient from right flank pain within 48 hours was evaluated and goal was fully met as patient verbalized relief of pain and nurse observed patient comfortably relaxed in bed with a nice facial expression.

3. Patient Was Relieved of Vomiting (16th December 2021)

On 12th December, 2021 Patient complains of vomiting at 9:20am. A nursing diagnosis of Risk for deficient fluid volume as evidenced by vomiting was formulated. An objective was set to maintain normal fluid level throughout hospitalization as evidence by; patient verbalizing resolution of vomiting, and patient having good skin turgor, moist skin and mucous membrane normal urine output and absence of thirst. The following interventions were performed on the patient. Clinical features of dehydration was assessed patient had good skin turgor, moist skin and mucus membrane and report no thirst. Patient blood pressure was checked and recorded to assess loss of fluids level, and intake and output chat was monitored. Patient took 500mls of orange juice everyday with 2500mls (5 glasses) of water.

On 16th December 2021 at 9:20am an objective which was set on 12th December, 2021 to maintain patient fluid volume throughout hospitalization was evaluated and goal was fully met as patient verbalized resolution of vomiting and nurse assessed that patient had good skin turgor, moist skin, reported no thirst and normal urine output.

4. Patient Had Improved Appetite (15th December, 2021)

On 13th December, 2021 at 7:00am, a nursing diagnosis of Risk for imbalance nutrition (less than body requirement) as evidenced by insufficient dietary intake was formulated. An objective was set to maintain patient's nutritional balance within 48 hours. The following interventions were implemented: Patient was reassured that she will be able to eat well. Meals were plan with patient to know her likes and dislikes. Patient mouth was cared for using tooth paste before meal and rinsed with water after meals to stimulate appetite and remove food debris. Patient was fed in bit at regular interval. Patient meals were served in an attractive manner. Food was described and recorded such as ingesting 20 tea spoon of rice with beans stew and 330mls of fruits juice (pineapple) served.

On 15th December, 2021 at 7:00am an objective which was set on 13th December, 2021 to maintain patient nutritional balance within 48 hours was evaluated and goal was fully met as patient verbalized that she can eat better and nurse observed that patient ate at 2/3 of 400ml of porridge served.

5. Patient Was Relieved of Anxiety within 24hours (14th December 2021)

On 13th December, 2021 at 8:00am, patient was observed being anxious due the change in the environment and unknown outcome of disease condition. A nursing diagnoses of Ineffective coping (anxiety) related to unfamiliar environment, existence of symptoms and unknown outcome of disease condition was formulated. An objective was set to relieve patient from anxiety within 24 hours. Interventions were made on the patients to reduce her anxiety level;

Patient was reassured that adequate measures would be put in place to relieve her from anxiety. Patient was allowed to express their fears and concern and appropriate answers were provided, health team members were introduced to patient, patient was oriented to the ward, equipment and daily routine at ward in other to reduce her level of anxiety, all nursing procedures and interventions were explained to patient to help gain her cooperation, a busy and noisy environment was prevented to reduce the anxiety level of patient and she was encourage to seek assistance to help reduce anxiety.

On 14th December 2021 at 8:00am, an objective which was set on 13th December, 2021 to relive patient from anxiety within 24 hours was evaluated and goal was fully met as patient verbalized that she is no more anxious and nurse observed patient having relaxed facial expression.

6. Patient's Fatigue was Resolved (15th December, 2021)

On the 13th December, 2021 at 10:00am, a nursing diagnosis of Activity intolerance related to general feeling of discomfort (malaise) was made. An objective was set to help resolve patient's fatigue within 48 hours. The following interventions were implemented; Patient was reassured of competent nursing care and that her weakness will be relieved. Patient was assisted in some of her daily activity performance. Side rails were raised to prevent her from falling. Patient was helped to assume a comfortable position in bed (left lateral). Visitors were restricted to prevent interruptions in resting periods of the patient. Patient was educated on the need to perform self-care activities.

On 15th December, 2021 at 10:00am evaluation of set objective on 13th December, 2021 to resolve patients fatigue within 48 hours was done and goal was fully met as patient verbalized that she is no longer weak and nurse observed patient perform activities of daily living.

7. Patient and Relative Gained Sufficient Information on Pyelonephritis (14th December, 2021)

On the 14th December, 2021 at 10:00am upon interacting with patient on her condition I realized she had little information of pyelonephritis. A nursing diagnosis of Knowledge deficit related to insufficient information on the risk factors, clinical manifestations and the treatment modalities of pyelonephritis was formulated. An objective was set to help patient and relatives have sufficient information on pyelonephritis within 6 hours The following interventions were carried out: Noise free environment was ensured during the education on the condition, All procedures were clearly explained to the patient and her family, Patient and relatives knowledge concerning the diagnosis, risk factors on condition was assessed, the risks factors, clinical manifestation and treatment of pyelonephritis were explained to patient and the family, Madam S.B. and her relatives tried answering a lot of questions that were asked on pyelonephritis, a clear language was used in answering Madam S.B. and her relatives tactfully.

At 4:00pm, an objective which was set on 14th December, 2021 at 10:00am to provide patent and relatives sufficient information on pyelonephritis within 6 hours was evaluated and goal was fully met as patient and relatives enumerated three predisposing factors, clinical features, three treatment modalities of the condition and nurse observed patient and relative utilizing knowledge gained on pyelonephritis.

5.2 Amendment of Nursing Care Plan

Amendment refers to changes made to correct or improve something. Therefore, amendment of partially met and unmet goals means changing the time and/or the nursing orders to meet goals, thus, improving the condition of the patient. With competent health care delivery all goals were fully met in the nursing care plan so no amendment of nursing care plan was done.

5.3 Termination of Care

Termination of care is an essential phase of relationship between the patient /family and the nurse. During my interaction with Madam S.B. and family, they were made aware that the nursing care for her is within specified period of time when Madam S.B. was on hospitalization till discharge and home visits. During the last home visit on the 24th December, 2021 I reminded them of the termination of care for Madam S.B. and her family since patient was feeling healthy. I handed over the patient to her mother for the continuity of care at home. Also, patient and family were educated again on the condition and the need to seek medical attention if any member of the family shows signs of the condition and the need to adhere to the educations given throughout hospitalization. I also expressed my sincere gratitude to them and promised them of occasional friendly visits.

CHAPTER SIX

SUMMARY AND CONCLUSION

6.0 Introduction

Summary is a comprehensive and usually brief abstract, recapitulation, or compendium of previously stated facts or statements. Conclusion is something that you decide when you have thought about all the information connected with the situation (Weller, 2016).

This is the last step of the patient/family care study which entails the student's personal appreciation of the therapeutic relationship with the patient as well as the use of the nursing process.

6.1 Summary

Madam S.B. a 25year old who was diagnosed of acute pyelonephritis was received into the Female Medical Ward from the Accident and Emergency Unit of Holy Family Hospital, Berekum on 12th December, 2021 at 9:00am. Patient was hospitalized for five days during which seven health problems were identified:

1. Patient had high temperature (40.3℃)
2. Patient complained of right flank pain
3. Patient vomited
4. Patient complained of loss of appetite
5. Patient complained of anxiety
6. Patient complained of body weakness
7. Patient had insufficient information on her condition

These problems were solved with the help of various health team members including physicians, nurses, laboratory technicians, and dietician, as well as her family members. The following treatment plan were ordered:

1. Intravenous Ceftriaxone 2g daily x 24 hours
2. Intravenous Ciprofloxacin 400mg bd x 48 hours
3. Intravenous Normal saline 0.9% 2 liters for 48 hours
4. Intravenous Ringers lactate 1.5 liters x 24 hours
5. Intravenous Paracetamol 1g tds x 24 hours
6. Tablet Paracetamol 1g tds for 3days
7. Tablet Ciprofloxacin 500mg bd x 10 days

These investigations were ordered and carried out on patient;

1. Full blood count
2. Blood film for malaria parasites
3. Urine routine examination

She was discharged on the 16th December 2021 in a well improved state. Patient reported for review on 22nd December, 2021. She and her family were visited three times at home before and after her discharge. First home visit was on 13th December, 2021, second home visit on 21st December, 2021 and third home visit was on 24th December, 2021. Termination of care was done during the third home visit which was 24th December, 2021.

6.2 Conclusion/Recommendation

The study has equipped me with knowledge on how to care for a patient as an individual. Through this study, I have been able to put into practice actual and holistic nursing care as has been learnt theoretically. The study provided a therapeutic environment for nursing patient as an individual and has promoted a good nurse-patient (family) relationship as well as broadened my knowledge on pyelonephritis, its prevention, management and treatment. It has also helped me to practice my skills acquired in the classroom theoretically. It has deepened my relationship with patient, families and the people in a given community as a whole. The study also provided the platform for the patient /family to receive individualized

care. Based on the testimonies given by patient who receive individualized nursing at hospitals, it prompts most of the community members to seek medical help at the various hospitals. This helps to redeem the image of the hospital and the staff nurses as a whole. Also, this patient/family care study also helps to change the community's wrong perceptions about staff nurses and also improve the people's attendance to the hospital.

Therefore, it is my recommendation that all students are given the opportunity to embark on the patient/family care study to implement the nursing process in order to render individualized comprehensive care to patients/families. In brief, I really enjoyed every bit of writing this script despite the challenges encountered.

APPENDIX I

Table 6. 1: Vital Signs of Madam S.B

Date	Time	Temperature(^{0}C)	Pulse (bpm)	Respiration (cpm)	Blood Pressure (mmHg)
12/12/21	9:00am	40.3	100	25	110/80
	10:00am	38.4	94	19	110/70
	2:00pm	37.8	89	18	110/70
	6:00pm	37.0	86	18	120/80
	10:00pm	37.1	90	20	110/70
13/12/21	6:00am	36.8	92	24	120/80
	10:00am	36.9	94	20	110/70
	2:00pm	36.8	90	21	120/80
	6:00pm	37.0	92	20	110/80
	10:00pm	37.1	94	19	110/70
14/12/21	6:00am	36.2	90	19	120/80
	10:00am	37.0	90	21	120/80
	2:00pm	37.2	88	19	110/80
	6:00pm	37.0	89	20	110/70
	10:00pm	36.9	85	18	110/70
15/12/21	6:00am	37.1	90	22	120/80
	10:00am	36.9	88	20	110/70
	2:00pm	37.2	91	19	120/70
	6:00pm	36.8	86	21	110/70
	10:00pm	36.9	84	20	120/80
16/12/21	6:00am	37.0	90	20	120/80
	10:00am	37.2	91	19	120/80
Review-22/12/21	9:00am	36.6	88	23	110/80

APPENDIX II

Table 6. 2: Intake and Output Chart of Madam S.B.

DATE & TIME	**INTAKE**			**OUTPUT**					
				NG Tube/Abd Tube		URINE		STOOL	
	Kind of fluid	Route	Amt(ml)	Amt(ml)	Colour	Amt(ml)	Colour	Amt(ml)	Colour
12/12/21 9:30am	Orange juice	Oral	460						
9:50am	Normal saline	IV	500						
10:00am						600	Clear		
11:10am	Water	Oral	300						
1:30						480	Clear		
4:00pm	Normal saline	IV	500						
	Water	Oral	500						
6:00pm						620	Clear		
7:20pm	Water	Oral	250						
9pm						430	Clear		
13/12/21 5:30						650	Clear		
6am	Ringers lactate	IV	500						
6:30am						350	Clear		
7am	Porridge	Oral	230						
9:00am	Water	Oral	200						

24 HOUR BALANCE				
	From		To	
Date	12/12/21	Date	13/12/21	
Time	9:30am	Time	9:30am	
Total Intake	3,440	Total Output	3,130	
Difference	310ml			

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SIGNITORIES

1. THE STUDENT NURSE

NAME: ASUM FREDA

SIGNATURE: .....

DATE: 10/10/2022

2. THE SUPERVISOR, HOLY FAMILY NURSING AND MIDWIFERY TRAINING COLLEGE, BEREKUM

NAME: MISS GRACE ASANTEWAA

SIGNATURE.....

DATE.....18/10/2022.....

3. NURSE IN-CHARGE OF FEMALES WARD HOLY FAMILY HOSPITAL, BEREKUM

NAME: MRS. GRACE DEDE

SIGNATURE.....

DATE.....10/10/2022.....

4. THE PRINCIPAL, HOLY FMILY NURSING AND MIDWIFERY TRAINING COLLEGE, BEREKUM

NAME: MONICA NKRUMAH

SIGNATURE.....

DATE.....11/10/2022.....

ACADEMIC TO GRADUATE - NURSING
HOLY FAMILY NURSING & MIDWIFERY
TRAINING COLLEGE, BEREKUM