HOLY FAMILY NURSING AND MIDWIFERY TRAINING COLLEGE, BEREKUM

A PATIENT / FAMILY CARE STUDY ON SICKLE CELL DISEASES.

BY

APPIAH KUBI PETRA

INDEX NUMBER (4120190039)

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

AUGUST- 2022

PREFACE

Although the origin of nursing predate the mid -19th century, the history of professional nursing traditionally begins with Florence Nightingale. Nightingale, the well-educated daughter of wealthy British parents, defied social conventions and decided to become a nurse. The history of nursing first started to become more continuous and defined with Christianity when Christians cared for the sick, fed the hungry and buried the dead. Therefore, it was said that the history of nursing is tied to the church. When it became apparent that love and nurturing alone were not enough to cure disease, the need for a more educated frame work for nurses began to form. As a result of this, Florence nightingale in 1860, fulfilled her dream concerning nursing by establishing the Nightingale Training School for Nurses. It was the first formal, fully organized training program for nurses.

In this 21st century, many nursing schools have been established to help build on the previous skills and experiences that were acquired through long years of housekeeping, assisting in child bearing and care of formal sick relatives.

The Patient/Family Care Study is a detailed written report of nursing care rendered to an individual and family within a specific period of time. In the model of contemporary nursing care, every patient will have a nurse who is the primary decision maker when it comes to their care plan during their hospital stay and if it was readmission. It explores nursing rendered to patients from time of encounter to the termination of nurse-patient relationship. It gives an in-depth description and explanation of how a patient's response to a specified disease condition is diagnosed and given intervention.

The Patient/Family Care Study involves a record of nursing care, identifying the problems of a nursing patient and how they are dealt with by the nurse in the course of finding solution to the problems. It provides a systematic way of collecting data, analyzing information, and reporting the results of nursing care. Nursing care when rendered properly helps the patient to meet his physical, psychological, social and spiritual needs.

Currently, patients are nursed using the nursing process. The nursing process is goal-oriented method of caring that provides a framework to nursing care. The nurse ensures that the patient is assessed, diagnosed, and receives continuity of care across appropriate healthcare providers and departments. It involves six major steps which are assessment (what data is collected), diagnosis (what is the problem), outcome identification (objective/outcome criteria), planning (how to manage the problem), implementation (putting plan into action), and evaluation (did the plan work). This Patient/Family Care Study is based on the concept of holistic care, taking into account all factors affecting the health of the individual. It therefore involves the interaction between the patient, his family, the community in which he stays and the health team. It is done using the nursing process approach. Evidence-based practice is a conscientious, problem solving approach to clinical practice that incorporates the best evidence from well-designed studies, patient values and preferences, and a clinician's expertise in making decisions about a patient care. This care study is carried out in partial fulfillment of the requirement for the award of professional license by the Nursing & Midwifery Council of Ghana. It encourages learning by doing, development of analytical and decision-making skills as well as reporting skills. Based on the nursing process, the students become familiar with the use of the nursing process as a basis for practice thereby encouraging evidenced based nursing care. For the purpose of confidentiality and anonymity, initials of the characters are used instead of their real names.

ACKNOWLEDGEMENT

All praise and thanks be to God, the Almighty who has granted me the strength, knowledge, understanding and opportunity throughout the period of commencement and finally the conclusion of this patient/family care study successfully. A big thanks to my parents Mr. Francis Appiah Kubi and Mrs. Felicia Appiah for the love, financial support and contribution throughout my education. My warmest gratitude goes to my patient Master A.P.A. and family for their uttermost cooperation throughout the period of conducting the care study. Without their consent to be studied and enormous participation, this care study would never have been materialized.

I also wish to express my greatest appreciation to the entire teaching and non-teaching staff of Holy Family Nursing and Midwifery training college, Berekum for the tuition and guidance they gave me during the writing of this care study, especially my Supervisor Mr. Emmanuel Ali for his time, guidance and support throughout the period of conducting the care study. Again, I give thanks to the entire staff of the Accident and Emergency Ward of the Regional Hospital, Sunyani for their support and guidance to make this a success, not forgetting my classmates in the RGN22 class, their support and encouragement has brought this piece into existence. I say God bless you all.

Finally, I acknowledge and thank all authors and publishers whose works have been used as references in this care study. May the Almighty God richly bless you all. Amen.

INTRODUCTION

Presented in this care study is a report of nursing care rendered to Master A.P.A. who was diagnosed of vaso-occlusive crises in sickle cell disease. He was admitted to the Accident and Emergency ward of the Regional Hospital, Sunyani on the 10th of November, 2021 at 3:00am and stayed there for five (5) days.

With the use of nursing process, the problems identified were developed into nursing diagnosis with nursing orders which were implemented to help solve these problems and promote recovery.

Using the nursing care plan, effective nursing care was carried out on the patient to ensure full recovery of Master A.P.A. Among the care provided to him were bed making, monitoring of vital signs (temperature, pulse, respiration, and blood pressure), proper positioning in bed, administration of medication, and patient/family education on personal hygiene.

The following were health problems identified with the client during the period of hospitalization. They include;

1. Patient complained of general joints pain.
2. Patient reports difficulty walking.
3. Patient and family were very anxious about the condition.
4. Patient cannot sleep.
5. Patient has lost appetite.
6. Patient had inadequate knowledge about his condition.

Nursing diagnosis for Master A.P. are as follows;

1. Joint and waist pain related to vaso-occlusive crises.
2. Impaired mobility related to joint and waist pains.
3. Anxiety related to unknown outcome of disease.
4. Insomnia related to change of environment.
5. Risk for Imbalanced nutrition: less than body requirement: related to loss of appetite.

6. Knowledge deficit (causes, signs and symptoms, complications) related to inadequate information about the disease condition.

Diagnostic investigations requested for Master A.P.A. included;

1. Blood film for malaria parasite.
2. Full Blood Count.
3. Blood for grouping and cross matching

Plan of treatment for Master A.P.A. was as follow

1. Intravenous Normal Saline 2 litres x 24hours
2. Intravenous Ringers Lactate 1 litre x 24hours
3. Injection morphine 5mg stat
4. Intravenous Paracetamol 1g tds x 24hours

He was discharged on the 15th November, 2021 when his condition had improved and was declared fit to go home with no complains. Goals were fully met during evaluation of care. He reported to the hospital for review on the 29th of November, 2021. Three home visits were embarked on. The first home visit was done while patient was still on admission on 13th of November, 2021, second home visit was on 19th of November, 2021 and third home visit was on the 6th of December, 2021. The care was finally terminated on 6th of December, 2021 after handing him over to his mother.

The nursing process was used in granting nursing care to Master A.P.A. and the family and the care was finally terminated on 6th of December, 2021.

According to the nursing process, the study has been divided into six chapters as follows;

1. Assessment of Patient and Family.
2. Analysis of Data.
3. Nursing Care Plan for Patient and Family.
4. Implementation of Patient and Family Care Plan.
5. Evaluation of Care Rendered to Patient and Family.
6. Summary and Conclusion of Care Rendered to Patient and Family.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER ONE

ASSESSMENT OF PATIENT

1.0 Introduction

Assessment is the systematic collection of data to determine the patient health status and any actual or potential health problems. (Hinkle & Cheever, 2018). The first step in the nursing process is a systematic comprehensive process of collecting data, organizing and documenting patient's specific data gathered from various available sources. It includes the patient's medical, personal, social and environmental history. This helps to render the exact nursing care to the patient and family. Information is gathered from patient and family through interviewing, observation, and reference to past medical records. Assessment provides information that forms the patient's database. Two types of information are collected which are subjective (data from patient's point of view and it include feelings, perceptions and concerns) and objective data (are observable and measurable data that are obtained through assessment techniques performed during physical examination and diagnostic test). Patient was the primary source of information; however, other sources like patient folder, patient relatives etcetera were not overlooked. The data gathered is analyzed to arrive at the patient's problem so that the nurse can determine the possible ways of nursing the patient for good health and independent life. This chapter entails patient's particulars, patient and family medical history, socio-economic history, developmental history, patient's lifestyle and hobbies, past medical history, present medical history, admission of patient, patient's concept of illness and literature review on condition.

1.1 Patient's Particulars

According to Breslin and McKeown (2018), particulars refers to facts or details about them which are written down and kept as record. Master A.P.A., the subject of this study is a 21year old boy. He was born on the 7th of July, 2000 to Mr. K.K. and Madam H.K. Patient lives with his mother at New Dormaa, a suburb of Sunyani metropolis. Their house number is New Dormaa Extension 32/B. He is

single and a private school teacher. He is a Christian and fellowship with Christian Fellowship Church at New Dormaa. Master A.P.A.'s next of kin is his mother who secures the same address as my patient. He completed senior high school in the year 2020. He is a Ghanaian who hails from Sombo of the Nadoli District in the Upper West Region. He is a Dagaaba and speaks Dagaari, Asante Twi and English language. Master A.P.A. is the first born among four siblings, two boys and two girls including himself. He is dark in complexion with no tribal marks, he weighs 47.7kg and has a height of 1.5m. His BMI is 21.2kg/m^2 and he is also a beneficiary of the National Health Insurance. He limps on his left leg.

1.2 Patient and Family Medical History

During interaction with Master A.P.A., he claimed that his grandparents died of old age and also his family does not have a history of any chronic or hereditary diseases such as hypertension, asthma, diabetes mellitus, epilepsy or any mental disorder apart from sickle cell disease. He continued to say that there is no communicable disease in the family like Tuberculosis and Leprosy. Master A.P.A. also stated that, his mother is a carrier with AS genotype as well as his father. The family reports to the Bono Regional Hospital or Municipal Hospital in Sunyani when taken ill by malaria or any other sickness. They sometimes boil neem tree (bark) and drink, sometimes too they bath with it. If symptoms persist within three days, they report to the heath facility. Master A.P.A. has been hospitalized on several occasions as a result of vaso-occlusive crisis and was managed with Haematinics (folic acid) and antimalarial medications. They do not use over-the-counter medications. The family has no known allergies. His parents and siblings are doing well and healthy.

1.3 Socio-Economic History

Socio-economically, Master A.P.A. is now a private school teacher after he completed his secondary school education. He belongs to the nuclear type of family with a good relationship between the members, they also relate well with other members of the external family as well. The parents of Master A.P.A. are all teachers and because of that, they sometimes face problems like sore throat, eye problems due to excessive straining of eyes when marking, other parents coming to insult them

for beating their wards, among others. Patient said they have no taboos in their family, rather they conform to the rules and believes of the Christian religion. Master A.P.A. lives with his mother and three other siblings in the house. The patient and his family members are all registered with the National Health Insurance Scheme (NHIS) which helps them to assess health care with minimal cost involved. The patient and family have no particular family traditions/taboos but as part of their faith they don't smoke nor drink alcohol. Master A.P.A. belongs to a very good Christian family of which he takes active participation in their religious activities such as going for congregational services each Sunday at the Christian Fellowship Church at New Dormaa. He helps to play drums at church and pay his tithe also. Their income level falls within the middle income group.

1.4 Patient's Developmental History

Growth refers to the progressive development of a living thing, (Weller, 2019). Development is a process of growth and differentiation, (Weller, 2019). Maturation is an increase in competence and adoptability, or the process whereby behavior is modified as a result of growth and development of physical structures (Shivangi, 2018).

The developmental history was given by Madam H.K. (patient's mother) herself. Madam H.K. indicated that, her son's delivery was through spontaneous vaginal delivery and came with no complications during pregnancy, labor, and delivery and throughout breastfeeding and he was delivered normally at full term pregnancy with the help of medical staff at the Regional Hospital, Sunyani. He was born without any congenital abnormality such as cleft lip or palate. He was also vaccinated against the vaccine preventable disease such as whooping cough, measles, poliomyelitis, tuberculosis and it was evidenced by the presence of the Bacillus Chalmette- Guerin scar on his shoulder. Patient was breastfed exclusively for six months before introducing him to complementary foods. According to Madam H.K., her son passed through the normal developmental milestone. He started sitting at the sixth month after birth, he began to crawl at his eight month, stand at the tenth month and in a year he began walking. Patient was weaned off breast milk when he was almost one and half year. He could talk at the age of two years. Patient is in a very healthy relationship with his

peers and his family and he is very humble and respectful in his community. He is not in any sexual relationship however, he aspires to get married in the future. Master A.P.A. did not have any serious illness in childhood days. He started experiencing the growth of hair at his pubic area at the age of 13 years. He started having deep voice at the age of 14years with the manifestation of broadening chest. He started his basic and junior high education at 3 Garrison Educational Complex and went on to Techiman Senior High School in the Bono East Region. After his secondary education he decided to teach at a private school in order to support himself. He is a friendly type and loves to socialize with others. During my interaction with Master A.P.A., he said that his dream is to be a physician assistant of which he loves to read science text books. He lives happily with his family members and friends who are around him.

Erikson's theory of psychosocial development in 1964 describes the human life cycle as a series of eight egos developmental stage from birth to death. 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. In respect to patient's age and psychosocial behavior, Master A.P.A. falls under the Intimacy versus isolation since he is twenty-one years. Under the intimacy versus isolation stage (18 to 35 years), young adults are still eager to blend their identity with friends and explore personal relationships because they want to fit in. Those who are successful at this stage will have the ability to love and have a committed and secured relationship.

Through an interaction with Master A.P.A., it was made clear that he has attained intimacy because he is in an intimate relationship with his family. He also said he will get married when the time is due.

1.5 Patient's Lifestyle and Hobbies

Master A.P.A. usually goes to bed around 9:00pm and wakes up at 6:00am. He brushes his teeth with toothbrush and Pepsodent toothpaste twice daily (Morning and evening). He empties his bowel twice in a day and takes his bath twice daily with warm water. For breakfast, patient mostly takes milo

beverages or porridge with butter bread. Patient has no known allergies for food or drugs. He goes to teach in school at 7:30am and close at 4:30pm. Master A.P.A.'s favorite food is rice with palava sauce. He takes three square meals in a day. He does not smoke nor drink alcohol. At his leisure hours, he normally listens to music and also likes to read. During weekends, patient wakes up at 8:00am. He then observes personal hygiene and elimination needs. He then read science text books. At 12:00 noon, He takes his lunch and takes a nap. When he wakes up, he then listens to gospel music. In the evening, he takes his bath and have his supper. He will chat with his mother and siblings and also chat with his friends on phone till 9:00pm before he goes to sleep. He likes reading books especially science books, listening to gospel music and chatting with friends. Master A.P.A. communicates well using verbal and non- verbal communications such as eye contact and gestures to register his displeasure when his siblings go wrong. He is the extrovert type and dislikes being disgraced in public and people who gossip. He assist his younger siblings in doing their homework as a senior brother. My personal impression about the patient is, he is hopeful and believes that good things will happen in the future and loves to socialize.

1.6 Past Medical History

Past medical history is a narrative or record of past events and circumstances that are or may be relevant to a patient's current state of health (Stamper, 2016).

According to Madam H.K., her son didn't have any childhood illness like measles, whooping cough and diphtheria. Her son was diagnosed of sickle cell disease (SC genotype) when he was eleven (11) years old. He has been admitted at Bono Regional Hospital, Sunyani on several times on the same condition. Patient has an NHIS card which makes it easy for him to get access to the health facility. He revealed that he usually suffers from minor ailments such as constipation, headaches and common cold which he usually treats with traditional medicines (boil neem tree (bark) and drink, sometimes too they bath with it). When symptoms persist, he visits a nearby hospital or clinic. Master A.P.A. said he had never been involved in an accident. In the year 2013, he was admitted to the Regional Hospital, Sunyani with the diagnosis of vaso-occlusive crisis, due to multiple injections, he wasn't

able to walk properly and upon several visits to the physiotherapy, he now limps on his left leg. His last admission was on the 25th of October, 2021 at the Sunyani Regional hospital of which his condition was triggered by infection. He was admitted at the male medical ward with sickle cell disease with vaso-occlusion of the left leg. He was discharge after three days of hospitalization without any complications. Patient on his previous visit was put on tablet folic acid 5mg daily for thirty days. Patient has no known allergies to drugs, animals and insects.

1.7 Present Medical History

According to Weller (2019), history of present illness is the provided detailed information about the chief complaints that leads to patient hospitalization. From patient statement, he was well until 10th November, 2021 when he started experiencing severe waist and joint pain while in bed around 2:30am. He did not take in any analgesics for the pain. He was then brought to the Accident and Emergency Unit of Regional hospital, Sunyani at 3 o'clock am where he complained of severe joint and waist pain and was given Injection 5mg morphine stat. He was attended to by Dr. N.A who was on duty by then. Patient was diagnosed with vaso-occlusive crisis in sickle cell diseases and was admitted to the ward.

1.8 Admission of Patient

Admission is defined as an entry into a place (Stamper, 2016). On the 10th of November, 2021 at 3:00am, patient came to the Accident and Emergency ward in an ambulatory state with his mother. They were warmly welcomed to the ward and offered seats whilst his NHIS card and hospital card were taken and given to the records staff to activate him on the system. The admission was done by Dr. N.A. who diagnosed patient of having sickle cell disease with vaso-occlusive crisis. Preparation of the patient and family started on the day of admission. Patient and family were made to understand that, hospitalization is temporal and patient will improve and will be discharged home. An admission bed was prepared and patient was made comfortable in bed. During admission, patient was conscious, alert and well oriented to time, place and person. On arrival, patient complained of severe joint and waist pain. Patient and relative were reassured that adequate healthcare will be ensured to promote

speedy recovery. General observation was made from head to toe, upon observation, patient looks slightly pale, anicteric, afebrile, dehydrated but had an intact skin. The necessary particulars were ascertained and recorded in the admission and discharge book and the ward statement respectively. History from patient was taken, this include name, age, sex, date and time of admission, place of residence, next of kin, religion, ethnicity, nationality and hometown. A quick assessment of his general condition was also made by checking and recording the vital signs. The recordings were as follows:

- Temperature - 36.6 degrees Celsius (°C)
- Pulse - 80 beats per minute (bpm)
- Respiration - 20 cycles per minute (cpm)
- Blood Pressure -110/63 millimeters of mercury (mmHg)

Explanation was given to Madam H.K. and Master A.P.A. that the National Health Insurance Scheme does not cover all drugs hence she will be required to pay for some drugs should the need arise. Information was also given to them on the visiting periods, payment of bills and the time vital signs will be checked. Patient was introduced to the Staffs and other patients who were on the ward. They were also oriented to the ward and its annexes. A tray was set and the medical officer was assisted to set up an intravenous line for withdrawing blood specimen for the tests requested to be carried out. The blood samples were labeled and sent to the laboratory and patient was made comfortable in bed. Patient was to be transfused with three units of whole blood urgently after grouping and cross matching.

Plan of treatment for Master A.P.A. was as follow;

1. Intravenous Normal Saline 2 litres x 24hours
2. Intravenous Ringers Lactate 1 litre x 24hours
3. Injection morphine 5mg stat
4. Intravenous Paracetamol 1g tds x 24hours

Laboratory investigations requested were:

1. Blood film for malaria parasites
2. Full Blood Count
3. Grouping and cross matching

I introduced myself to the patient as a third year student nurse from Holy Family Nursing and Midwifery Training College, Berekum who would like to take him and the family for my care study. It was explained to the patient that home visits will be included. Explanation was given that, before one becomes a professional nurse, the person need to carry out a study on a patient before given a license by the Nursing and Midwifery Council, Ghana to practice. Therefore, patient and his mother's consent were sought for approval for them to be used for the study. I also assured them of privacy and confidentiality. I added that a report will be written after the entire event about the care study. They agreed and were willing to cooperate. On admission, patient and family were made to understand that, hospitalization is temporal and patient's condition will improve and will be discharged home to continue treatment. Drugs were taken from the ward pharmacy and administered as prescribed. They were also made to know that, the care would be terminated when patient is well. Patient was chosen for the care study to help me get more knowledge about the condition, the treatment and management given to patients with the sickle cell disorders. Patient's condition on admission was fair and he was made comfortable in bed awaiting transfusion.

A nursing diagnosis of joint and waist pains related to vaso-occlusive crisis was made at 3:15am to help manage patient's pain. Therefore an objective was set to help Master A.P.A. be relieved from the pain within 24 hours. The following interventions were carried out to meet the objective set; Patient was reassured that measures will be put in place to relieve his joint and waist pains, warm compress was applied to the joints to enable vasodilation, patient's pain was assessed using the numerical pain rating scale and patient rated pain as '8', patient was engaged in therapeutic communication to divert his attention on pain, a warm comfortable admission bed with warm blankets was provided for him to ensure rest and IV morphine 5mg was administered as prescribed.

A nursing diagnosis of impaired mobility related to joint and waist pains was formulated at 4:00am to help relieve patient of walking difficulties. Therefore an objective was set to help Master A.P.A. regain his ability to walk within 24hours. The following interventions were carried out to meet the objective set; Patient was reassured that his walking ability will be restored, patient's ability to walk was assessed. Patient walked from bed to bathroom, nurse's station and back, patient was encouraged to take at least 8 cups of copious fluids to prevent dehydration, a simple bed free from creases and cramps with head end elevated 30^{o} was made for patient to ensure adequate rest, patient was served with nutritious diet rich in calories, protein and iron such as meat and green vegetable to help increase his energy level, patient's pain was managed with diversional therapy by engaging him in a conversation.

At 7:30am, patient and mother were anxious and so a nursing diagnosis of anxiety related to unknown outcome of disease condition. Therefore an objective was set to help relieve Master A.P.A. and mother of anxiety within 48hours. The following interventions carried out to meet the objective set; Patient and relative were reassured of competent nursing care that will be ensured to alleviate their anxiety, patient and relative were educated on the benefits of procedures such as vital signs monitoring and administration of medication to ensure understanding of treatment, procedures that were performed on the patient were explained to him to gain his cooperation, patient and family were encouraged to ask questions about his condition to clear their doubt, straight forward answers were given promptly and tactfully in Ghanaian language "Twi", patient and family were orientated to the hospital environment to promote comfort and decrease anxiety.

At 10:00am, vital signs were checked and recorded. At 11:13am, the first pint of O+ whole blood with batch number SDA 621/21 with expiry date of 03/12/21 was set up with no premedication prescribed. Patient was educated on the signs and symptoms of transfusion reaction and to report immediately and was under close monitoring. Pre-transfusion vital signs checked were recorded as: Temperature - 36.7^{o}C, Pulse - 86bpm, Respiration - 21cpm and Blood Pressure - 114/76mmHg. At

2pm, patient's vital signs were checked and documented as: Temperature – 37.0^{o}C, Pulse - 72bpm, Respiration - 26cpm and Blood Pressure - 120/70mmHg. At 2:10 pm blood was successfully transfused without any reaction with post transfusion vital signs as Temperature – 36.5 ^{o}C, Pulse – 90bpm, Respiration – 20cpm and Blood Pressure – 120/70mmHg. At 6:00pm, vital signs were checked and recorded. At 6:25pm, patient was served with plain rice with beans stew and meat with slides of pineapple and orange. At 10:00pm, vital signs recorded: Temperature - 36.5^{o}C, Pulse - 88bpm, Respiration - 22cpm and Blood Pressure - 110/70mmHg. Patient was assisted to attend to his oral hygiene and bath. He was made comfortable in bed.

1.9 Patient's Concept of Illness

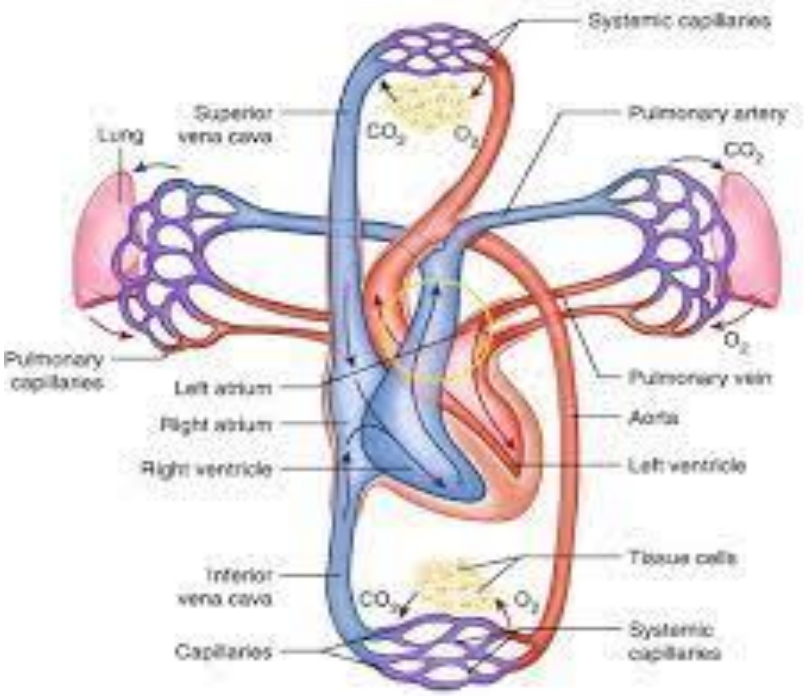
According to Stamper (2016), patient's concept of illness can be defined as an abstract or generic idea generalized from one's illness or condition. Patient and family members know that the disease is a genetic disorder found in the blood of both parents that was transmitted to him. He however has a little knowledge about the causes of sickle cell crisis and preventive measures. They did not attribute the disease to any spiritual cause and was prepared to accept any instructions given him. He was optimistic that his signs and symptoms would be relieved because he periodically experiences the same signs and symptoms and get relieved.

1.10 Literature Review on Sickle Cell Disease

Literature review of a condition gives a detailed insight into the condition. It 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.

REVIEW ON ANATOMY AND PHYSIOLOGY OF THE CARDIOVASCULAR SYSTEM (BLOOD).

Figure I



According to Tortora and Derrickson (2017), blood contributes to homeostasis by transporting oxygen, carbon dioxide, nutrients, and hormones to and from your body's cells. It helps regulate body pH and temperature, and provides protection against disease through phagocytosis and the production of antibodies. Blood is a connective tissue composed of blood plasma (liquid portion) and formed elements (cells and cell fragments). It provides one of the means of communication between the cells of different parts of the body and the external environment, thus,

1. Blood transports oxygen, carbon dioxide, nutrients, wastes, and hormones.
2. It helps regulate pH, body temperature, and water content of cells.
3. It provides protection through clotting and by combating toxins and microbes through certain phagocytic white blood cells or specialized blood plasma proteins.

4. Physical characteristics of blood include a viscosity greater than that of water; a temperature of 38°C (100.4 °F); and a pH of 7.35–7.45.

5. Blood constitutes about 8% of body weight, and its volume is 4–6 liters in adults.

6. Blood is about 55% blood plasma and 45% formed elements.

7. The hematocrit is the percentage of total blood volume occupied by red blood cells.

8. Blood plasma consists of 91.5% water and 8.5% solutes. Principal solutes include proteins (albumins, globulins, and fibrinogen), nutrients, vitamins, hormones, respiratory gases, electrolytes, and waste products.

9. The formed elements in blood include red blood cells (erythrocytes), white blood cells (leukocytes), and platelets.

COMPONENTS OF BLOOD

According to Tortora and Derrickson (2017), blood has two components: (1) blood plasma, a watery liquid extracellular matrix that contains dissolved substances, and (2) formed elements, which are cells and cell fragments. Blood is about 45% formed elements and 55% blood plasma. Normally, more than 99% of the formed elements are cells named for their red color—red blood cells (RBCs). Pale, colorless white blood cells (WBCs) and platelets occupy less than 1% of the formed elements. Because they are less dense than red blood cells but denser than blood plasma, they form a very thin buffy coat layer between the packed RBCs and plasma in centrifuged blood.

BLOOD PLASMA

According to Tortora and Derrickson (2017), when the formed elements are removed from blood, a straw colored liquid called blood plasma (or simply plasma) is left. Blood plasma is about 91.5% water and 8.5% solutes, most of which (7% by weight) are proteins. Some of the proteins in blood plasma are also found elsewhere in the body, but those confined to blood are called plasma proteins. Among other functions, these proteins play a role in maintaining proper blood osmotic pressure, which is an important factor in the exchange of fluids across capillary walls.

RED BLOOD CELLS

According to Tortora and Derrickson (2017), red blood cells (RBCs) or erythrocytes (e-RITH-ro¯-sı¯ts; erythro- red; -cyte cell) contain the oxygen-carrying protein hemoglobin, which is a pigment that gives whole blood its red color. A healthy adult male has about 5.4 million red blood cells per microliter of blood and a healthy adult female has about 4.8 million. (One drop of blood is about 50 L.) To maintain normal numbers of RBCs, new mature cells must enter the circulation at the astonishing rate of at least 2 million per second, a pace that balances the equally high rate of RBC destruction. RBCs are biconcave discs with a diameter of 7–8 mature red blood cells have a simple structure. The production of RBCs, starts in the red bone marrow with a precursor cell. Their plasma membrane is both strong and flexible, which allows them to deform without rupturing as they squeeze through narrow capillaries. Red blood cells live only about 120 days because of the wear and tear their plasma membranes undergo as they squeeze through blood capillaries.

WHITE BLOOD CELLS (WBC)

According to Tortora and Derrickson (2017), unlike red blood cells, white blood cells or leukocytes (LOOko¯-sı¯ts; leuko- white) have nuclei and do not contain hemoglobin. The general function of white blood cells is to combat them by phagocytosis or immune responses. To accomplish these tasks, many WBCs leave the bloodstream and collect at sites of pathogen invasion or inflammation. Once granular leukocytes and monocytes leave the bloodstream to fight injury or infection, they never return to it.

PLATELETS

Besides the immature cell types that develop into erythrocytes and leukocytes, hemopoietic stem cells also differentiate into cells that produce platelets. Under the influence of the hormone thrombopoietin, myeloid stem cells develop into megakaryocyte-colony-forming cells that in turn develop into precursor cells called megakaryoblasts. Platelets help stop blood loss from damaged blood vessels by forming a platelet plug.

Their granules also contain chemicals that, once released, promote blood clotting. Platelets have a short life span, normally just 5 to 9 days. Aged and dead platelets are removed by fixed macrophages in the spleen and liver

SICKLE CELL DISEASE

According to Hinkle et al. (2018), sickle cell disease is a genetic blood disorder characterized by red blood cells that assume abnormal rigid, sickle or crescent shape. Also according to Lewis, Dirksen, Heitkemper, Bucher, and Harding (2017), sickle cell disease is a recessive hereditary blood disorder characterized by erythrocyte which contains defective haemoglobin. These hemoglobin molecules tend to aggregate after unloading oxygen forming long, rod-like strictures that forces the red blood cells to assume a sickle shape. Unlike normal red blood cells, which are usually smooth and malleable, the sickle cells block small blood vessels. When the sickle cell blocks small blood vessels, the organs are deprived of blood and oxygen. This leads to periodic episodes of pain and damages the vital organs. It can also be defined as a recessive hereditary blood disorder characterized by erythrocytes that contain defective haemoglobin. Sickle red cells die after only about 30-40 days instead of usual 120 days. Because they cannot be replaced fast enough, the blood is chronically short of red cells, causing anemia. The gene for sickle cell anemia must be inherited from both parents for the illness to occur in children. A child with only one copy of the gene may have sickle cell traits but no symptoms of illness.

DEFINITION

Sickle cell disease is a severe hemolytic disease that results from inheritance of the sickle hemoglobin gene. This gene causes the hemoglobin molecule to be defective. The sickle hemoglobin (HbS) acquires a crystal-like formation when exposed to low oxygen tension. The oxygen level in venous blood can be low enough to cause this change; consequently, the RBC containing (HbS) loses its round, very pliable, biconcave disk shape and becomes deformed, rigid, and sickle-shaped. These

long, rigid RBCs can adhere to the endothelium of small vessels; when they pile up against each other, blood flow to a region or an organ may be reduced (Hinkle et al., 2018).

It can also be defined as a recessive hereditary blood disorder characterized by erythrocytes that contain defective hemoglobin.

INCIDENCE OF SICKLE CELL DISEASE

According to Hinkle et al. (2018), the disease is found predominantly in Africans and Black Americans. It occurs in about 1 out of 500 African live births. It also occurs in people from Mediterranean and Arab countries. It affects both males and females.

AETIOLOGY

Sickle cell disease a genetic condition caused by the transfer of haemoglobin S gene from parents to their offspring. The child inherits a defective gene from each parent which governs the synthesis of haemoglobin. (Hinkle et al., 2018).

PATHOPHYSIOLOGY

The defect occurs when there is a single amino acid substitution in the data chain of haemoglobin. The normal haemoglobin A contains two alpha (2-α) and two Beta (2-β) chains. People with the trait thus AS and AC have inherited only one abnormal gene so their red blood cell can synthesis both normal beta chain and beta sickling chain, thus they have “A” and “S” genes causes substitution of amino acid called valine for glutamic acid in the beta haemoglobin chain. The heterozygous AS or AC in the inheritance of these gene result in sickle cell trait, a condition with minimal or no symptoms of sickle cell disease. Haemoglobin S is less soluble than haemoglobin A, especially when it gives up its oxygen to become deoxygenated haemoglobin when the pit of the blood is below 7.4g/dl when haemoglobin is deoxygenated, the molecules of the haemoglobin, polymerizes, thus simple molecules combining to form large molecules hence from crystal like substance called tactoids. The tactoids are firm and rigid and changes red blood cell membrane. The greater the concentration of sickle cell

haemoglobin in the individual cells, the more tactoids is formed. These tactoids are usually in crescent shape thus sickle shape. The ability of the red blood cell to be in circulation depends on their flexibility. As the sickle cell becomes rigid, their movement in the blood is slowly with low oxygen, the cell membranes are easily destroyed. Hence, the blood becomes very viscous with obstruction in capillary blood flow. A marked viscosity leads to a local tissue hypoxia. Further tissue deoxygenations increase the rate of sickling in the red blood cell. The proportion of irreversible sickle cell varies among homozygous sickle and this directly related to the severity of the disease (Sundd, Gladwin, & Novelli, 2018).

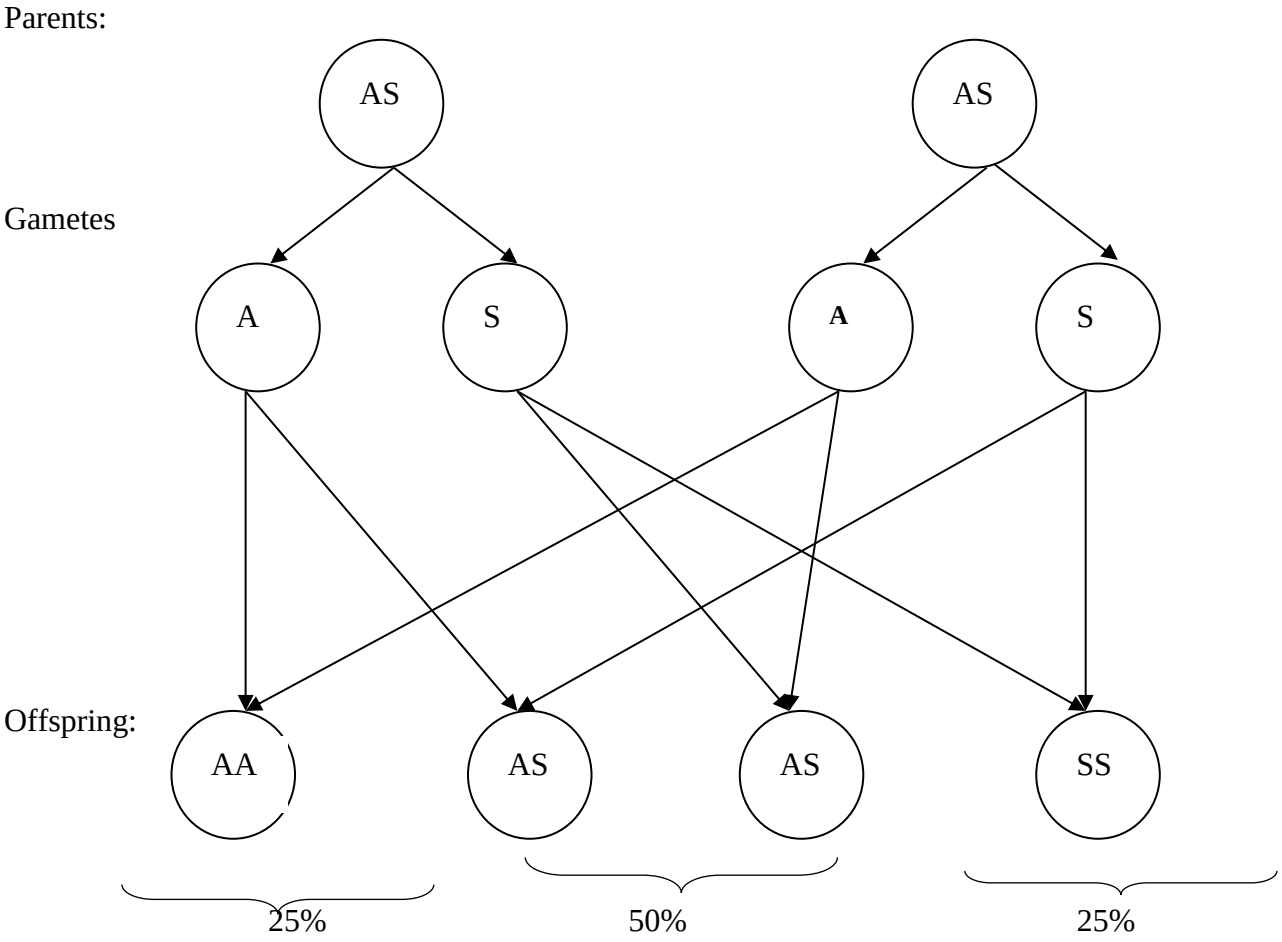
FORMS OF SICKLE CELL DISEASE

There are basically four forms of sickle cell disease and these are; hemoglobin AS (people with this form of the disease have one normal gene and an inherited abnormal gene). Hemoglobin SS (This is the most severe form of the condition. The individual inherits two abnormal genes from both parents), Hemoglobin SC (the individual inherit one S gene and one abnormal C gene. It is a milder form of the disease and individual may exhibit sign and symptoms) and hemoglobin beta thalassemia. (It affects beta globin gene production and symptoms are not as severe). (Hinkle et al., 2018)

THE INHERITANCE PATTERN OF SICKLE CELL DISEASE

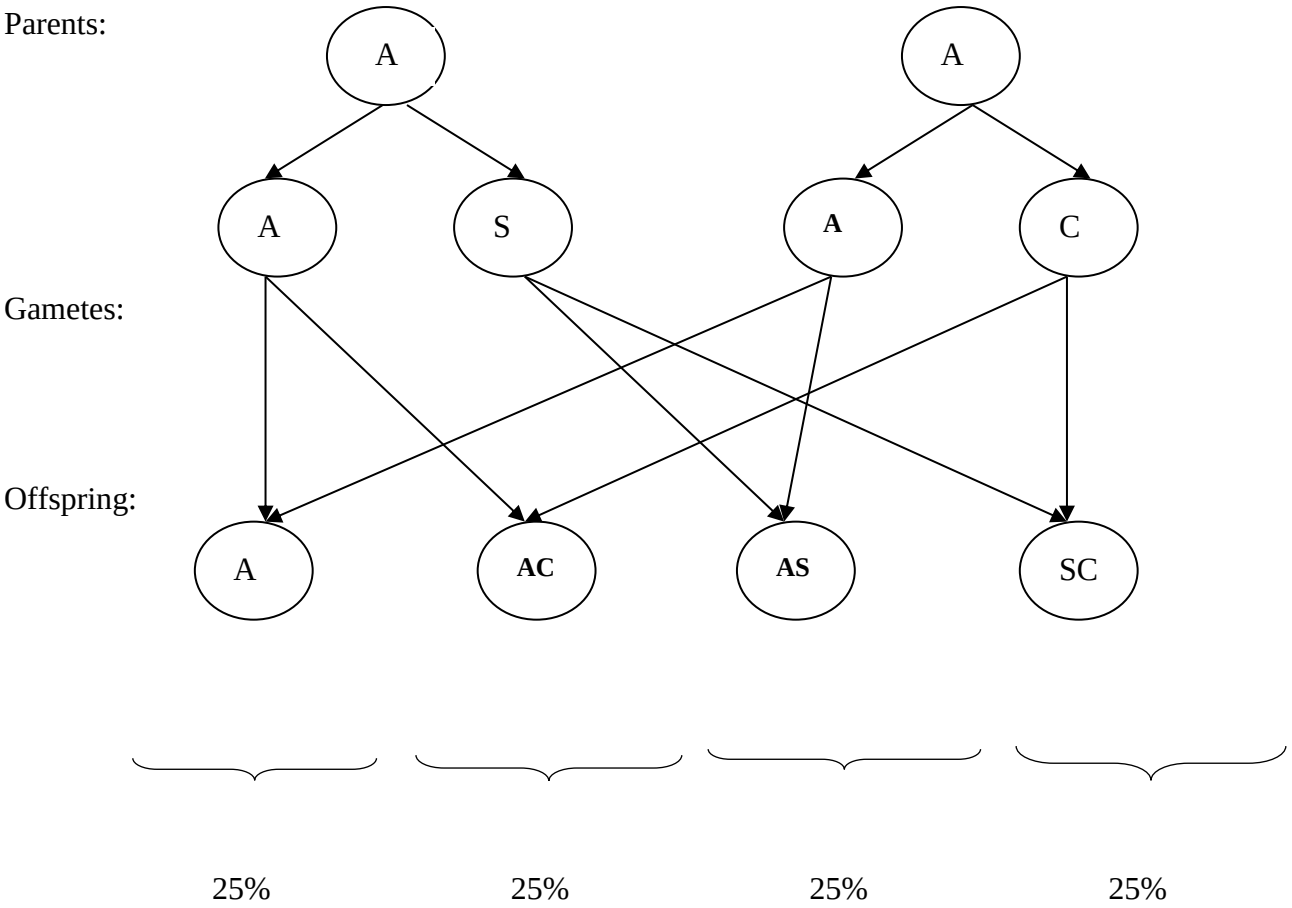
Sickle cell conditions are inherited from parents in the same way as blood type, hair colour and texture, eye colour and other physical traits. The type of haemoglobin a person makes in the red blood cells depend on what haemoglobin genes are inherited from her parents. The figures below show the inheritance pattern of sickle cell disease

Figure II Father Mother



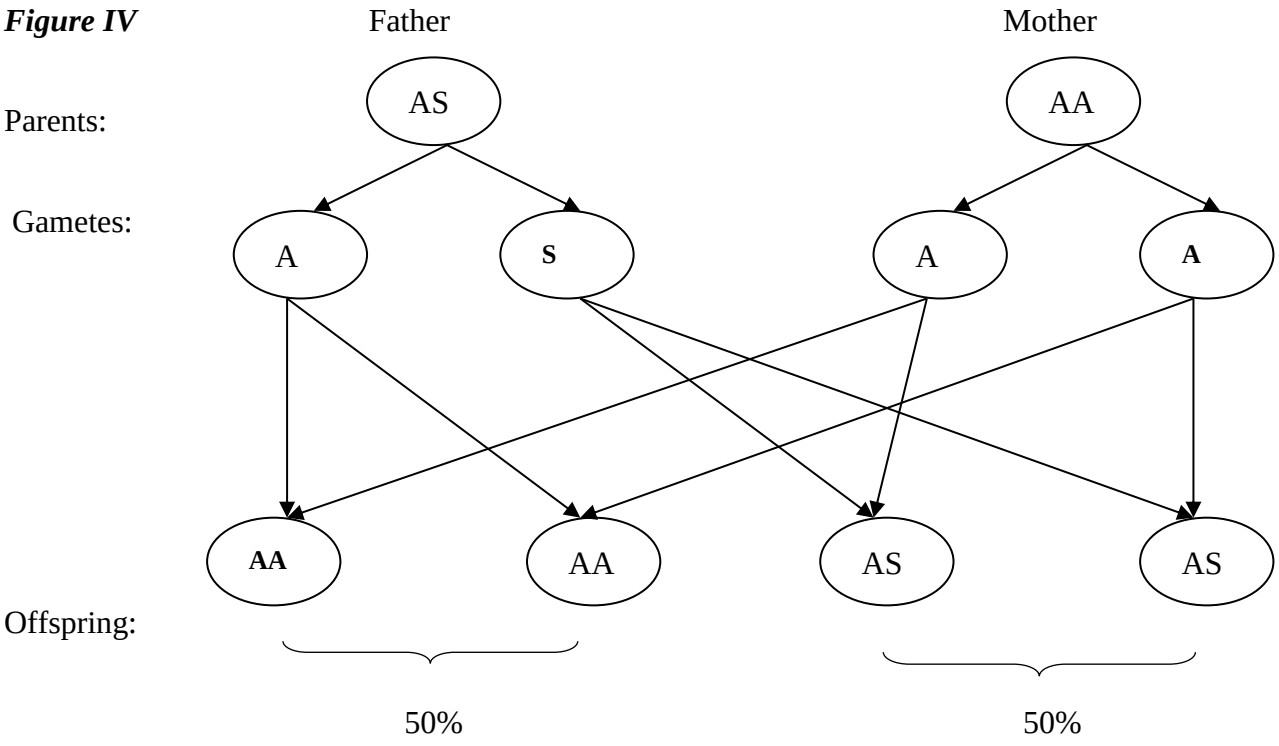
The above illustration in *Figure II* indicates that there is 25% chance of possessing a normal haemoglobin (AA), 25% for the infant to develop sickle cell anaemia (SS) and 50% chance of being a carrier or possessing sickle cell trait (AS) when both parents are carriers of the sickle cell trait.

Figure III Father Mother



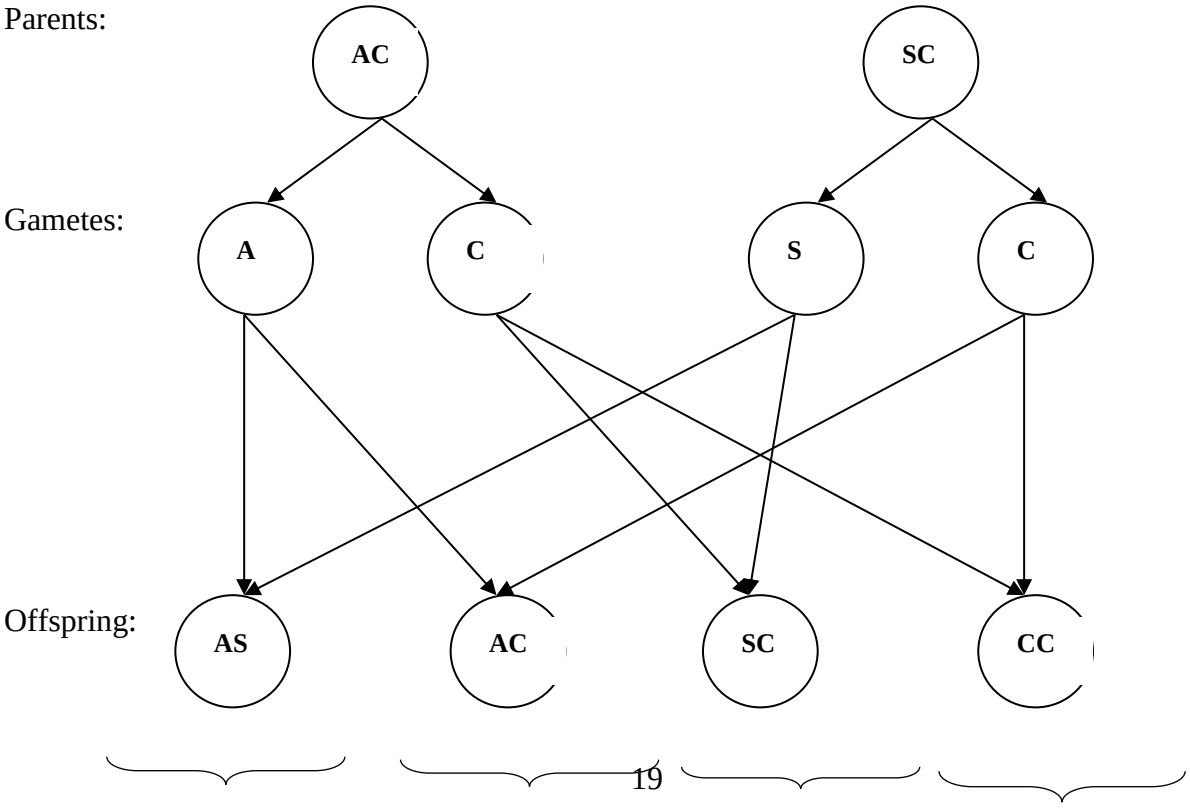
When one parent has a sickle cell trait (AS) and the other (AC), there is 25% chances of possessing normal haemoglobin (AA), 25% chance of possessing a trait of either (AC) and 25% chance of becoming a carrier with (AS) trait while there is another chance of 25% carrying an abnormal (SC) as illustrated in *Figure III.*

Figure IV



The illustration in *Figure IV* above indicates that when two parents with one being a carrier (AS) and the other possessing a normal haemoglobin (AA), there is 50% chance of their offspring possessing normal haemoglobin (AA) and 50% chance of possessing sickle cell trait or being carriers (AS).

Figure V



25% 25% 25% 25%

Figure V illustrates one parent being a sickle cell carrier (AC) and the other sickle cell (SC). In this case, there is 25% chance of their offspring being carrier AS, AC or CC with the remaining 25% having sickle, (SC).

SICKLE CELL TRAIT

These individuals have no symptoms of sickle cell unless extreme circumstances cause anoxia, such as flying in a non-pressurized aircraft. Sickle cell trait gives some protection against plasmodium falciparum malaria, and consequently the sickle cell gene has been seen as an example of a balanced polymorpherm (where the advantage of malaria protection in heterozygote is balanced by the mortality of homozygous condition). The diagnosis is made by positive sickle test or haemoglobin electrophoresis (Feather, Randall, & Waterhouse, 2020).

SICKLE CELL ANAEMIA

Sickle cell anaemia is a severe hemolytic anemia that results from inheritance of the sickle haemoglobin S gene from both parents. The gene causes the haemoglobin molecule to be defective. That is, it causes the red blood cell to assume crescent of sickle shape. These red bloods impair circulation resulting in chronic ill health periodic crises, long term complications and premature death. (Hinkle et al., 2018)

SICKLE CELL CRISIS

According to Hinkle et al. (2018), sickle cell crisis is a painful episode that occurs in people who have sickle cell disease. It happens when the sickle shaped red blood cells block blood vessels. Blood and oxygen cannot get to tissues, causing pain. A sickle cell crisis can also damage your tissues and cause organ failure such as kidney or liver failure. A sickle cell crisis can become life threatening.

TYPES OF SICKLE CELL CRISIS

According to Hinkle et al. (2018), types of sickle cell crisis are;

1. Vaso-occlusive crisis; small blood vessels are occluded due to presence of sickle shaped red blood cells that impede capillaries and restrict the blood flow to an organ. This results in ischemia, severe pain, necrosis and most of the time it damages an organ by altering renal and liver function. Frequency, severity and duration of these crisis varies considerably.
2. Splenic sequestration; is acute and painful enlargement of the spleen. The spleen is responsible for clearing defective red blood cells. However, because of its narrow vessels, defective red blood cells pull down the spleen that leads to its infarction.
3. Aplastic crisis; is stimulated by parvovirus B19. This virus directly affects the production of red blood cells through the invasion of the red cell precursors, the resulting condition is the multiplication of the virus and the destruction of the red blood cells causing cessation in production of red blood cells.
4. Hemolytic crisis; when hemoglobin levels drop, hemolytic crisis is accelerated resulting to the speeding up of red blood cell destruction. Individuals with co-existent G6PD deficiency commonly suffers from this crisis

CLINICAL FEATURES OF SICKLE CELL DISEASE

According to Hinkle et al. (2018), the clinical features of sickle cell include the following;

1. There may be anemia
2. There is chest pain and shortness of breath
3. In severe cases, there is enlargement of the liver and spleen, especially in children
4. Severe abdominal pains may be experienced
5. There may be severe joint pains
6. Patient may experience loss of appetite

7. There is headache
8. Protrusion of abdomen, especially in children
9. Swelling of toes and fingers
10. There is pallor in severe anemia or during crises
11. There is jaundice
12. There is constipation
13. Fatigue

DIAGNOSTIC INVESTIGATION OF SICKLE CELL DISEASE

In order to establish the correct diagnosis, both parents need to be tested followed by the following investigation.

1. Haemoglobin electrophoresis. This involves taking of blood sample to determine the different types of haemoglobin in the sickle cell.
2. Positive family history and clinical features suggest sickle cell disease.
3. Hemoglobin level estimation may reveal low hemoglobin level.
4. Full blood count.
5. Sickling Test will be positive (Hinkle et al., 2018)

FACTORS THAT PRECIPITATE SICKLE CELL CRISIS

According to Hinkle et al. (2018), sickle cell crisis may be triggered by the following factors:

1. Exposure to extremes of temperature either cold or hot
2. High altitude
3. Stress
4. Alcoholism
5. Dehydration
6. Pregnancy
7. Infection such as malaria

8. Extremes of emotion either over excitement or depression
9. Anxiety.

TREATMENT OF SICKLE CELL CRISIS

According to Hinkle et al., (2018), there is no effective form of treatment for sickle cell disease. The use of drugs is often for supportive and conservative treatment. The basic aim of treatment is to alleviate symptoms and control or reduce painful crisis.

1 Analgesics such as Diclofenac and Paracetamol to reduce pain and pyrexia.
2 Vitamin supplements such as Folic acid, Vitamin B-complex and Fersolate to boost appetite and prevent anaemia.
3 Antibiotics like Cefuroxime are given to control infection.
4 Blood transfusion may be given in case of severe anaemia.
5 Intravenous normal saline is often prescribed to correct fluid and electrolyte imbalances and to reduce blood viscosity.
6 Oxygen therapy is given to prevent hypoxemia
7 Malaria prophylaxis is given in endemic areas.

COMPLICATIONS OF SICKLE CELL DISEASE

With repeated episodes of sickling, there is involvement of all body systems especially the spleen, lungs, kidneys, heart and brain. According to Hinkle et al., (2018), the following are complications of the disease:

1. The spleen becomes small and dysfunctional because of repeated infarction and scaring resulting in a high incidence of infection especially pneumonia.

2. Blood pools into the spleen causing splenic sequestration.

3. Acute chest syndrome which include pneumonia, tissue infarction and fat embolism resulting in pulmonary hypertension and cor- pulmonale.

4. The kidneys may be injured from the lack of oxygen, resulting in renal failure.

5. Stroke can result from thrombosis and cerebral blood vessels infarction.

6. The heart may become ischemia and enlarge leading to heart failure.

7. Retinal vessel obstruction may result in hemorrhage, scaring, retinal detachment and blindness.

8. Bone changes which may include osteoporosis and osteosclerosis after infarction. The bone marrow expands in childhood in a compensatory effort, sometimes leading to enlargement of the bones of the face and skull. As a result, patients may have prominent foreheads and high cheekbones.

9. Chronic leg ulcers resulting from hypoxia.

NURSING INTERVENTION AND MANAGEMENT

1. **Psychological care:**

Reassure patient psychologically to allay her of any fear and anxiety and to relieve her thoughts about the disease condition. To ensure psychological care, the following measures should be put in place.

- Reassure patient that he is in the hands of competent health workers and everything possible would be done to relieve him of his disease.
- Explain all procedures as well as management to patient and mother to gain their co-operation before they are carried out.
- Allow patient and his mother to ask questions and express their fears and anxiety. Answers to question should be given in clear and simple terms.
- Diversional therapy such as watching of television, having a therapeutic conversation, listening to music and news on the radio should be employed to divert patient's attention from the disease condition.

2. **Position**

Assist patient to assume a comfortable position such as semi-fowlers position or position which is not contraindicated to his condition to promote comfort, rest and to promote or facilitate breathing.

3. **Rest and Sleep**

The main aims of ensuring adequate rest and sleep are to conserve energy, promote relaxation and also to relieve psychological and physiological stress. Nursing measures carried out to attain maximum rest and sleep includes the following.

- Provide a comfortable bed free from wrinkles and creases to make patient comfortable in bed.
- Remove any item that produces unpleasant odour from bed side
- Give warm bath before bed time to induce sleep.
- Provide adequate ventilation by opening nearby windows when patient feels warm.
- Serve patient with warm beverage in the evening and provide adequate warmth by giving patient blanket to stimulate sleep.

4. **Observation**

Patient is monitored or observed at regular intervals on the following to know whether the condition is progressing or deteriorating.

- Monitor vital signs such as temperature, pulse, respiration and blood pressure to detect any deviation from normal.
- Observe patient's level of consciousness and orientation to time, place and person.
- Observe for signs and symptoms of sickle cell crises and chronic complications like congestive hearts failure so that they can be solved appropriately.
- Carefully monitor the intake and output in the daily fluid chart to assess patient's hydration status.

- Assessment for tenderness and swelling of joints and joint deformities.
- Assess for signs and symptoms of infections such as fever or chills for early treatment.
- Observe for the potency of the tube and the site of infusion for any swelling or discolorations of the skin.
- Observe the amount, colour and odour of patient's urine to detect any abnormality.

5. **Personal Hygiene**

Personal hygiene is carried out in order to promote personal cleanliness and comfort. Measures put in place to enhance personal hygiene of patient are as follows:

- Give patient an assisted bath twice daily to maximize her comfort.
- Educate patient to perform oral hygiene twice daily to stimulate appetite.
- Care for patient's hands and feet to prevent infections.
- Teach patient proper hand washing techniques to help prevent infections.
- Change soiled bed linen regularly to prevent infection and promote comfort.

6. **Nutrition**

   In order to ensure that patient has a well nourishing diet, the following measures should be implemented:

- Serve patient with highly nutritious diet to boost up her immune system.
- Educate patient to take in a lot of oral fluids to reduce blood viscosity during crises and to flush out the circulatory system of any toxins.
- Involve patient in the planning of his diet taking into consideration his likes and dislikes as well as his cultural background.
- Rinse patient's mouth with warm water before serving meals to stimulate her appetite.
- Serve meals in bits and attractively to increase patient's appetite.
- Serve snacks and fruits in between meals to supplement food eaten.

7. **Education**

- Provide factual information about the disease and its causes and encourage patient to ask questions.
- Educate patient to avoid precipitating causes and crisis if possible e.g. malaria, pneumonia, exposure to cold weather and other infections.
- Encourage patient to maintain adequate hydration by taking in enough water.
- Educate patient to avoid the intake of fatty foods.
- Educate couples to seek for genetic counseling before getting married.

8. Exercise

- Advice patient to undertake mild or moderate exercises as her condition can permit example flexion of her legs and arms to promote circulation and prevent stiffness of joints and constipation.

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, 2019).

From the literature review, the past medical history from both the relatives and the health records as well as clinical manifestations presented by patient, for example, joint pain is a prove that the patient was suffering from sickle cell disease (SC) with Vaso-occlusive crises. All investigations carried out on the patient were compared with standard of measurements. All information gathered were confirmed by patient's mother through direct questioning and it was also cross checked to make sure they were free from errors.

CHAPTER TWO

ANALYSIS OF DATA

2.0 Introduction

Analysis of data is a systematic examination and evaluation of data or information, by breaking it into its component parts to uncover their interrelationship, thus providing basis for problem solving and decision making (Weller, 2019). This is the second step in the nursing process. It involves making of conclusions from data collected from patient, parents and relatives. The signs and symptoms exhibited by patient were compared with what exist in textbooks and the various laboratory investigations. The nurse then analyzes such information to deduce the exact nursing diagnosis to enable her to formulate appropriate nursing care plans for the patient.

2.1 Comparison of Data with Standard

This is comparing the data collected with that of the standards which includes diagnostic investigations, causes, clinical features, treatment and complications.

A. DIAGNOSTIC INVESTIGATION

According to Weller (2019), diagnosis is the determination of the nature of a disease. The following investigations were carried on Master A.P.A. to assist treatment:

1. Blood film for malaria parasite.
2. Full Blood Count.
3. Blood for grouping and cross matching

Table 1 below shows the comparison of diagnostic test done on Master A.P.A.

Table 1: **comparison of diagnostic test carried out on A.P.A and those listed in the literature review.**

Diagnostic investigation outlined in literature review	**Diagnostic investigation carried out on patient**
Hemoglobin electrophoresis	Was not done for patient
Hemoglobin level	Was done for patient
Complete blood count	Was done for patient
Sickle cell test	Was not done for patient
Family history and clinical features	Family history of patient and clinical features were taken.
Blood for grouping and cross matching(not part of the literature review)	Blood for grouping and cross matching was carried out on patient
Blood film for malaria parasites (not part of the literature review)	Blood film for malaria parasites was carried out on patient

In table 1 above, family history, hemoglobin and complete blood count that are part of the literature review were requested which helped to confirm the diagnoses. Other test which are not part of the literature review such as blood film for malaria parasite and blood for grouping and cross matching were also carried out. The blood film for malaria parasites was requested by the physician to know whether patient was harboring malaria parasite in his blood to enable effective treatment and the blood for grouping and cross-matching was also requested to know the blood type of patient in other to enable effective blood transfusion if the need arises Another investigation such as sickling test (positive) and hemoglobin electrophoresis

(genotype SC) were not done on the day of admission because it was previously done and recorded respectively.

Details of the tests carried out on the patient have been presented in table 2

TABLE 2; Diagnostic Investigation Carried Out On Master A.P.A.

Date	**Specimen**	**Investigation**	**Results**	**Normal Value**	**Interpretation**	**Remarks/ Treatment**
10/11/21	Blood	**FULL BLOOD COUNT** Haemoglobin level estimation	7.4g/dl	Female:11-14g/dl Male: 12-16g/dl Children: 13-18g/dl	Patient was anemic.	Three units of whole blood were requested for patient.
		White blood cell count	14.0 x 10^3/µL	(4-12) x 10^3/µL	White blood cells above normal range indicating presence of infection.	IV Cefuroxime 750mg tds x 3days was administered
		Red blood cells count	2.42 x 10^6/µL	(2.50-5.50) x 10^6/µL	Red blood cells below normal range indicating anaemia.	Three units of whole blood were requested for patient.
		Neutrophils count	6.40 x 10^3/µL	(1.00-7.00) x 10^3/µL	Normal neutrophils count	No treatment was given

TABLE 2; Diagnostic Investigation Carried Out On Master A.P.A.

Date	Specimen	Investigations	Results	Normal values	Interpretations	Results
10/11/21	Blood	Blood film for malaria parasites.	Malaria parasite was absent.	No malaria parasite should be seen.	Patient has no malaria parasite in blood.	No treatment given.
10/11/21	Blood	Grouping and cross matching	Blood group B positive	A (+ or -), AB (+ or -), B (+ or -) and O (+ or -)	Patient belonged to blood group B with Rhesus Positive, (B^+).	Two units of B^+ and a unit of O^+ whole blood were transfused successfully without any transfusion reaction.
13/10/21	Blood	Hemoglobin level estimation (post transfusion)	10.2g/dl	Female:11-14g/dl Male: 12-16g/dl Children: 13-18g/dl	Even though patient HB had improved, he was still anemic.	Tab Folic acid 5mg daily x 30days was given.

B. CAUSE OF PATIENT'S CONDITON

With regards to the data collected, sickle cell disease results from a mutation in a gene which contains the blueprint for cells to make part of a protein called hemoglobin. The mutation in the gene changes one of the amino acids, in the beta chain of hemoglobin. This defect causes the hemoglobin protein to stick together and form stiff fibers.

Sickle cell is developed when one receives two copies of the mutated gene: one from the mother and one from the father. His crisis was triggered by infection.

Table 3 shows comparison of clinical features outlined in literature review and those exhibited by patient.

2.2 Clinical Features/Signs and Symptoms.

TABLE 3. **Clinical features in literature review compared with those exhibited by patient**.

Clinical Features Indicated In Literature Review	**Clinical Features Exhibited By Patient**
There may be anemia.	Patient had anemia (hemoglobin level 7.4gd/L).
Chest pains and shortness of breath	There was no chest pain
Enlargement of liver and spleen	Liver and Spleen were not enlarged.
Abdominal pains may occur	There was no abdominal pain.
Pain at the joints.	Patient had joint pains.
Loss of appetite	Patient had loss of appetite.
Severe headache	Patient had no severe headache
Protrusion of abdomen	Patient's abdomen was not protruded.

Swelling of toes and fingers	Patient's toes and fingers were not swollen.
Pallor	There was no pallor
Jaundice	There was jaundice
Constipation	There was no constipation
Fatigue	There was fatigue

With reference to the literature review, patient exhibited most signs and symptoms which confirmed he was suffering from sickle cell crisis.

C. SPECIFIC MEDICAL TREATMENT GIVEN TO PATIENT.

Treatment refers to the mode of dealing with a patient or disease (Weller, 2019).

The following drugs were used in the management of the condition:

1. Intravenous Normal Saline 3 litres for 72 hours
2. Intravenous Ringers Lactate 1litres for 24 hours
3. IV Paracetamol 1g tid x 3days
4. IV Morphine 10mg tid for 24 hours
5. IV Cefuroxime 750mg tds x 3days
6. Tablet folic acid 5mg daily x 30 days
7. IV Ceftriaxone 2g daily x 48 hours

TABLE 4: Comparison of treatment in text book to treatment given to patient.

TREATMENT IN TEXT BOOK	TREATMENT GIVEN TO PATIENT
1. Analgesics a. Diclofenac b. Paracetamol c. Morphine d. Tramadol	**1. Analgesics** a. Diclofenac was not administered. b. Intravenous Paracetamol was given c. Injection Morphine was given. d. Tablet Tramadol was given
2. **Vitamin supplements** a. Folic acid b. Vitamin B complex	**2. Vitamin supplements** a. Tablet Folic acid was given b. Vitamin B complex was not given.
3. Antibiotics a. Cefuroxime b. Ceftriaxone	**3. Antibiotics** a. IV Cefuroxime was given b. IV Ceftriaxone was given
4. Blood transfusion	4. Three units whole blood were given to patient
5. Crystalloid isotonic solution a. Intravenous normal saline	**5. Crystalloid isotonic solution** a. Intravenous normal saline 3litres was given
6. Oxygen therapy	6. Oxygen therapy was not given
7. Malaria prophylaxis	7. Malaria treatment was not given

Comparing the treatment given to the patient and that of the literature review, it could be seen that the treatment given was in line with that of the treatment in literature review and this contributed greatly to the recovery of the patient.

TABLE 5: Pharmacology of Drugs.

DATE	DRUG	DOSAGE IN TEXT BOOK	DOSAGE PRESENTED TO PATIENT	ROUTE	CLASSIFICATION	ACTION	ACTUAL ACTION OBSERVED	SIDE EFFECTS/ REMARKS
10/11/2021	Normal saline	Dosage depends on the age, weight and clinical condition of the patient as well as laboratory investigations	3liters x 72 hours	Intravenous	Crystalloid Isotonic Solution.	To restore normal sodium and chloride level	Patient's sodium and chloride level was maintained. Patient was well hydrated.	Aggravation of heat, edema, hypothermia. None was observed

TABLE 5: Pharmacology of Drugs Con't

DATE	DRUG	DOSAGE IN TEXT BOOK	DOSAGE PRESENTED TO PATIENT	ROUTE	CLASSIFICATION	ACTION	ACTUAL ACTION OBSERVED	SIDE EFFECTS/REMARKS
10/11/21	Injection morphine	**Child's dose**; 25-100mcg/kg **Adult's dose**; 2.5 mg -10mg	5 mg stat	Intramuscular	Opiate(narcotic) analgesics	It is used to treat severe pain by blocking pain signals from travelling along the nerves to the brain	Patient's pain subsided.	Confusion, sedation, dizziness, nausea, vomiting, headache. None was observed.

10/11/21	Intravenous Paracetamol	**Child's dose**;12.5 - 15mg/kg **Adult's dose**;500mg-1000mg	1g tds x 3days	Intravenous	Analgesic, Antipyretic	It treats pain by mainly blocking COX-2 mostly in the central nervous system.	Patient was relieved of pain.	Nausea, vomiting, drowsiness and abdominal pains. None was observed.

TABLE 5: Pharmacology of Drugs Con't

DATE	DRUG	DOSAGE IN TEXT BOOKS	DOSAGE PRESENTED TO PATIENT	ROUTE	CLASSIFICATION	ACTION	ACTUAL ACTION OBSERVED	SIDE EFFECTS/REMARKS
10/11/21	IV Ringers Lactate	Amount depends on the patient's fluid and electrolyte level and age as well as doctor's prescription	Dosage;1 litre x 24 hours	Intravenous	Isotonic solution	It is a crystalloid solution that corrects fluid and electrolyte imbalance and increase blood volume.	Patient's fluid and electrolyte level were balanced as needed by the body and hypovolemia was also corrected.	Fluid overload, hypertension, tachycardia, hypercalcemia, hyperkalemia. None was observed.

TABLE 5: Pharmacology of Drugs Con't

DATE	DRUG	DOSAGE IN TEXT BOOKS	DOSAGE PRESENTED TO PATIENT	ROUTE	CLASSIFICATION	ACTION	ACTUAL ACTION OBSERVED	SIDE EFFECTS/REMARKS
10/11/21	Cefuroxime	**Child's dose**; 30-100mg/kg **Adult's dose**;750mg -1.5g tds	750mg tds x 3days	Intravenous	Cephalosporin antibiotics	It acts by inhibiting bacterial cell wall synthesis.	Infection was treated in patient.	Headache, nausea, mild skin rash, vomiting, diarrhea. None was observed.

11/11/21	Ceftriaxone	**Child's dose**;50-100mg/kg daily **Adult's dose**; 1g -4g daily	2g daily x 48hours	Intravenous	Cephalosporin antibiotics	To treat and prevent bacterial infection by interfering with the formation of the bacterial cell wall	Infection was treated in patient	Nausea, vomiting, drowsiness, diarrhea and rash. None was observed

TABLE 5: Pharmacology of Drugs Con't

DATE	DRUG	DOSAGE IN TEXT BOOK	DOSAGE PRESNTED TO PATIENT	ROUTE	CLASSIFICATION	ACTION	ACTUAL ACTION OBSERVED	SIDE EFFECTS
12/11/21	Tablet folic acid	**Adult's dose:** 5 mg daily **Child's dose:** > 1 year; 5 mg daily < 1 year; 2.5 mg daily	5 mg daily for 30 days	Oral	Vitamin (water-soluble) (Hematinic)	Stimulate the normal erythropoiesis synthesis. Nutritional supplement	Patient's blood count improved	Respiratory - bronchospasm. Skin -allergic reactions (rash, pruritus, erythemia). None was observed

D. COMPLICATION

According to Weller (2019), complication is a secondary disease or condition developing in the course of a primary disease or condition.

Table 6: Comparison of complications

Complications indicated in literature review.	**Complications exhibited by patient.**
Pneumonia	There was no pneumonia.
Splenic sequestration.	There was no splenic sequestration.
Pulmonary hypertension and cor- pulmonale	Pulmonary hypertension and cor- pulmonale was not seen.
Renal failure	There was no Renal failure
Stroke	There was no stroke.
Heart failure	There was no heart failure.
Retinal vessel obstruction	Retinal vessel obstruction was not seen
Osteoporosis	Osteoporosis was not seen.
Chronic leg ulcer	Chronic leg ulcer was not seen.

None of the complications in the literature review were observed due to proper and effective nursing care carried out on the patient.

2.2 Patient / Family Strengths

According to Lewis et al. (2017), Strength is the quality of being strong. It also involves those that the family can also do to help in speedy recovery of the patient and those that the patient can perform. The strength of the patient and family will help the nurse to be able to plan effective nursing care for the patient.

Specific strengths

1. Patient can verbalize the location and intensity of pain.
2. Patient can walk around bed by holding the side rails.
3. Patient can verbalize his fears.
4. Patient is able to sleep an hour in the day and three hours at night.
5. Patient can eat 1/3 of his usual food served.
6. Patient can answer few questions on disease condition.

2.3 Patient/Family Health Problems

A health problem is any stress be it mental, social or physical in a patient that prevents him/her from meeting a certain health standard. Hence the patient may need some professional service.

The health problems identified on Master A.P.A. are as follows:

1. Patient complained of general joints pain. (10/11/21)
2. Patient reports difficulty walking. (10/11/21)
3. Patient and family were very anxious about the condition. (10/11/21)
4. Patient cannot sleep. (11/11/21)
5. Patient has lost appetite. (12/11/21)
6. Patient had inadequate knowledge about his condition (13/11/21)

2.4 Nursing Diagnosis

According to NANDA International, nursing diagnosis is a clinical judgment concerning a human response to health conditions/life processes, or vulnerability for that response, by an individual, family, group, or community (Herdman & Kamitsuru, 2018).

The following are the nursing diagnosis for Master A.P.A.;

1. Joint and waist pain related to vaso-occlusive crises. (10/11/21)
2. Impaired mobility related to joint and waist pains. (10/11/21)
3. Anxiety related to unknown outcome of disease. (10/11/21)
4. Insomnia related to change of environment. (11/11/21)
5. Risk for Imbalanced nutrition: less than body requirement: related to loss of appetite. (12/11/21)
6. Knowledge deficit (causes, signs and symptoms, complications) related to inadequate information about the disease condition. (13/11/21)

CHAPTER THREE

PLANNING FOR PATIENT AND FAMILY CARE

3.0 Introduction

Planning is the process in which the nurse and patient together consider the goals to achieve in meeting the patient's identified or potential problems in daily life and produce an individual care plan (Weller, 2019). Planning for the patient/family care is the third stage of the nursing process. It involves the developing of plans designed to reduce, correct and prevent the health problems identified during the phase of analysis. In order to achieve and implement an effective nursing care plan, the nurse has to draw a care plan with the patient and her family on the various nursing actions. This will serve as the tool for the nurse to keep record of the patient's health needs and provide the basis for the continuity of care for the patient and family in the hospital and at home. In planning, objectives are set and prioritized in short and long term goals. Goals set are developed upon and a plan of care drawn to resolve the nursing diagnosis within a stipulated time frame.

3.1 Objective/Outcome Criteria for Patient/Family Care.

A nursing outcome refers to a measurable behavior or perception demonstrated by an individual, a family, a group, or a community that is responsive to nursing intervention (Herdman & Kamitsuru, 2018).

1. Patient's joint and waist pain will subside within 24hours as evidenced by,
    a) Patient verbalizing that pains has subsided
    b) Nurse observing that patient is relaxed in bed.
2. Patient will regain his ability to walk within 24hours as evidenced by,
    a) Patient reporting his ability to walk without assistance
    b) Nurse observing patient walk from bed to bathroom, nurse's station and back with less difficulty.

3. Patient and family's anxiety will resolve within 48hours as evidenced by,
    a) Patient and family verbalizing they are no more anxious
    b) The nurse observing patient and relatives having a cheerful facial expression
4. Patient will resume his normal sleeping pattern (6-8 hours in the night and 2 hours in the day) throughout hospitalization as evidenced by,
    a) Patient verbalizing that he had a good sleep
    b) Nurse observing that patient have a sound sleep.
5. Patient will regain his normal appetite and interest in food throughout hospitalization as evidenced by,
    a) The patient verbalizing that he can eat to his satisfaction.
    b) The nursing observing that patient can eat at all of meal served
6. Patient will gain adequate knowledge about the disease condition within an hour as evidenced by,
    a) Patient reporting he has enough and detailed information on the disease condition.
    b) Patient answering questions tactfully related to the disease condition.

TABLE 7: Nursing Care Plan for Master A.P.A.

DATE AND TIME	NURSING DIAGNOSIS	OBJECTIVE/OUTCOME CRITERIA	NURSING ORDERS	NURSING INTERVENTION	DATE AND TIME	EVALUATION	SIGN
10/11/2021 3:15am	Joint and waist pain related to Vaso-occlusive crisis.	Patient's pain will subside within 24 hours as evidenced by: Patient verbalizing that pains has subsided and the nurse observing that patient is relaxed in bed.	1. Reassure patient of competent nursing care. 2. Apply warm compress to the joints. 3. Assess the severity of the pain using the numerical pain rating scale of 0-10, where '0' means no pain and '10', severe pain.	1. Patient was reassured that measures will be put in place to relieve his joint and waist pains. 2. Warm compress was applied to the joints to enable vasodilation. 3. Patient's pain was assessed using the numerical pain rating scale and patient rated pain as '8'.	11/11/2021 3:15am	Goals fully met as; Patient rated pain as '1' on the numeric pain rating scale and the nurse observing that patient is relaxed in bed.	P.A.K

			4. Engage patient in diversional activities. 5.Provide warm comfortable bed and blankets 6. Administer prescribed analgesics.	4. Patient was engaged in therapeutic communication to divert his attention on pain. 5. A warm comfortable admission bed with warm blankets was provided for him to ensure rest. 6. IV morphine 5mg was administered as prescribed.			

TABLE 7: Nursing Care Plan for Master A.P.A. Con't

DATE AND TIME	NURSING DIAGNOSIS	OBJECTIVE/OUT COME CRITERIA	NURSING ORDERS	NURSING INTERVENTION	DATE AND TIME	EVALUATIO N	SIGN
10/11/21 4:00am	Impaired mobility related to joint and waist pains.	Patient will regain his ability to walk within 24hours as evidenced by; Patient reporting his ability to walk without assistance and Nurse observing patient walk from bed to nurse's station and	1. Reassure patient of competent nursing care. 2. Assess patient's ability to walk. 3.Encourage patient to take in copious fluids 4. Encourage patient to have enough rest.	1.Patient was reassured that his walking ability will be restored 2. Patient's ability to walk was assessed. Patient walked from bed to bathroom, nurse's station and back. 3. Patient was encouraged to take at least 8 cups of copious fluids to prevent dehydration. 4. A simple bed free from creases and cramps with head	11/11/21 4:00am	Goal fully met as patient reported his ability to walk without assistance and the nurse observing patient walk from the bed to bathroom,	P.A.K

		back with less difficulty.	5. Encourage patient to take nutritious diet rich in carbohydrate, protein and iron. 6. Manage Patient's pain.	end elevated 30^{o} was made for patient to ensure adequate rest. 5. Patient was served with nutritious diet rich in calories, protein and iron such as meat and green vegetable to help increase his energy level. 6 Patient's pain was managed with diversional therapy by engaging him in a conversation		nurse's station and back.	

TABLE 7:Nursing Care Plan for Master A.P.A. Con't

DATE AND TIME	NURSING DIAGNOSIS	OBJECTIVE/OUT COME CRITERIA	NURSING ORDERS	NURSING INTERVENTION	DATE AND TIME	EVALUATION	SIGN
10/11/21 7:30am	Anxiety related to unknown outcome of disease condition.	Patient and family anxiety will resolve within 48 hours as evidenced by; Patient and family verbalizing they are no more anxious and the nurse observing patient and relatives having a cheerful facial expression.	1. Reassure patient and relative of competent nursing care. 2. Give patient and relative clear, concise explanations of every procedure. 3.Explain all procedures that will be performed on the patient to him	1. Patient and relative were reassured of competent nursing care that will be ensured to alleviate their anxiety. 2. Patient and relatives were educated on the benefits of procedures such as vital signs monitoring and administration of medication to ensure understanding. 3. procedures that were performed on the patient were	12/11/21 7:30 am	Goals fully met as patient and family verbalized they are no more anxious and the nurse observing patient and relatives having cheerful facial expression.	P.A.K

			4. Encourage patient and family to ask questions. 5. Provide simple and straight forward answers to their questions in language they can understand. 6. Orientate patient and family to the hospital environment	explained to him to gain his cooperation 4. Patient and family were encouraged to ask questions about his condition to clear their doubt. 5. Straight forward answers were given promptly and tactfully in Ghanaian language "Twi". 6. Patient and family were orientated to the hospital environment to promote comfort and decrease anxiety.			

TABLE 7: Nursing Care Plan for Master A.P.A. Con't

DATE AND TIME	NURSING DIAGNOSIS	OBJECTIVE/OUTCOME CRITERIA	NURSING ORDERS	NURSING INTERVENTION	DATE AND TIME	EVALUATION	SIGN
11/11/21 10:00 am	Insomnia related to change of environment.	Patient will resume his normal sleeping pattern (6-8 hours in the night and 2 hours in the day) throughout hospitalization as evidenced by, Patient verbalizing that he had a good sleep and Nurse observing that patient have a sound sleep.	1. Reassure patient. 2. Make a comfortable bed free from creases and cramps for patient. 3. Encourage patient to have a warm bath before sleeping. 4. Ensure a noise free environment for patient.	1. Patient was reassured of regaining normal sleep pattern. 2. Comfortable bed was made for patient by using clean sheets free from creases and cramps to ensure adequate rest. 3. Patient was encouraged to have a warm bath to induce sleep. 4. A quiet environment was created for patient to have a good sleep.	15/11/21 10:00 am	Goal fully met as nurse observed the patient have a sound sleep and patient verbalizing that he had enough	P.A.K

			5. Organize nursing care to minimize sleep interruption. 6. Encourage regular evening routines that promote sleep.	5. All nursing activities were done almost at the same time, this promoted minimal interruption in sleep. 6. Personal hygiene routines performed before sleep for the patient such as urinating and toileting before bed was ensured.		sleep till discharge.	

TABLE 7: Nursing Care Plan for Master A.P.A. Con't

DATE AND TIME	NURSING DIAGNOSIS	OBJECTIVE/OUTCOME CRITERIA	NURSING ORDERS	NURSING INTERVENTION	DATE AND TIME	EVALUATION	SIGN
12/11/21 11:10 am	Risk for Imbalanced nutrition: less than body requirement: related to loss of appetite.	Patient will regain his normal appetite and interest in food throughout hospitalization as evidenced by: 1. The patient verbalizing that he can eat to his satisfaction.	1. Reassure patient that he will regain his normal appetite. 2. Assess patient's preferences with food and plan diet with patient. 3. Maintain adequate oral hygiene to stimulate patient's appetite.	1. Reassurance was given to patient that he will regain his normal appetite to maintain his weight. 2. Meals were planned with patient considering his likes and dislikes to encourage him to eat. 3. Patient's mouth was cared for early in the morning and in the evening after supper to boost his appetite. 4. Unpleasant articles like bedpan and vomits bowl were removed to prevent patient from nauseating.	15/11/21 11:10am	Goal fully met as patient reported he can eat to his satisfaction 2.The nurse observing that patient can eat at least 2/3 of	P.A.K

		2. The nurse observing that patient can eat at least 2/3 of his usual meal served.	4. Remove unpleasant articles from patient's sight 5. Serve food at regular intervals. 6. Encourage patient to have adequate rest after eating.	5. Food was served to patient three times in a day. 6. Enough rest was ensured for patient to improve his ability and desire to ingest food.		meal served	

TABLE 7: Nursing Care Plan for Master A.P.A. Con't

DATE AND TIME	NURSING DIAGNOSIS	OBJECTIVE/ OUTCOME CRITERIA	NURSING ORDERS	NURSING INTERVENTIONS	DATE AND TIME	EVALUATION	SIGN
13/11/21 1:00pm	Knowledge deficit (causes, signs and symptoms, complications) related to inadequate information about the disease condition.	Patient will gain adequate knowledge about the disease condition within 24 hours as evidenced by; a. Patient reporting he has enough and detailed information on	1. Reassure patient and establish rapport. 2. Create a serene environment for learning. 3. Assess patient's previous knowledge about the disease condition.	1. A good nurse-patient relationship was established and reassurance given. 2. Patient and family were comfortably seated and windows at the cubicle were opened to ensure ventilation as well as ward television volume turned down to reduce noise. 3. Patient was assessed and he had knowledge on the disease condition but lacks information on signs,	14/11/21 1:00pm	Goal fully met as patient reported he has enough and detailed information on the disease condition and also patient	P.A.K

		the disease condition. b. Patient being able to answer questions tactfully related to the disease condition.	4. Educate patient on condition and clarify his misconceptions. 5. Encourage patient to ask questions related to the education given. 6. Provide patient with leaflet, protocols and flyers containing information on the disease.	symptoms and management of the condition. 4. A verbal and detailed information on the condition was given and misconceptions clarified. 5. Patient was encouraged to ask questions related to the education given of which the nurse answered them tactfully. 6. Patient was provided with leaflet, protocols and flyers containing diagrams of the disease process to enable him understand the education given.		being able to ask and answer questions tactfully related to the disease condition.	

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 et al., 2018).

4.1 Summary of Actual Nursing Care Rendered To Patient/ Family

The actual nursing care rendered to patient and his family started on the day of admission, 10th November, 2021 to the time care was terminated. The management of patient and his family were planned to meet their physiological, emotional, spiritual and physical needs.

First Day of Admission (10th November, 2021)

On the 10th of November, 2021 at 3:00am, patient came to the Accident and Emergency ward in an ambulatory state with his mother. They were warmly welcomed to the ward and offered seats whilst his NHIS card and hospital card were taken and given to the records staff to activate him on the system. The admission was done by Dr. N.A. who diagnosed patient of having sickle cell disease with vaso-occlusive crisis. Preparation of the patient and family started on the day of admission. Patient and family were made to understand that, hospitalization is temporal and patient will improve and will be discharged home. An admission bed was prepared and patient was made comfortable in bed. During admission, patient was conscious, alert and well oriented to time, place and person. On arrival, patient complained of severe joint and waist pain. Patient and relative were reassured that adequate healthcare will be ensured to promote speedy recovery.

General observation was made from head to toe, upon observation, patient looks slightly pale, anicteric, afebrile, dehydrated but had an intact skin. The necessary particulars were ascertained and recorded in the admission and discharge book and the ward statement respectively. History from patient was taken, this include name, age, sex, date and time of admission, place of residence, next of kin, religion, ethnicity, nationality and hometown. A quick assessment of his general condition was also made by checking and recording the vital signs. The recordings were as follows:

Temperature - 36.6 degree Celsius,

Pulse - 80 beats per minute,

Respiration - 20 cycles per minute

Blood Pressure -110/63 millimeters of mercury.

Explanation was given to Madam H.K. and Master A.P.A. that the National Health Insurance Scheme does not cover all drugs hence she will be required to pay for some drugs should the need arise. Information was also given to them on the visiting periods, payment of bills and the time vital signs will be checked. Patient was introduced to the Staffs and other patients who were on the ward. They were also oriented to the ward and its annexes. A tray was set and the medical officer was assisted to set up an intravenous line for withdrawing blood specimen for the tests requested to be carried out. The blood samples were labeled and sent to the laboratory and patient was made comfortable in bed. Patient was to be transfused with three units of whole blood urgently after grouping and cross matching.

Plan of treatment for Master A.P.A. was as follows;

1. Intravenous Normal Saline 2 litres x 24hours
2. Intravenous Ringers Lactate 1 litre x 24hours

3. Injection morphine 5mg stat
4. Intravenous Paracetamol 1g tds x 24hours

Laboratory investigations requested were:

1. Blood film for malaria parasites
2. Full Blood Count
3. Grouping and cross matching

I introduced myself to the patient as a third year student nurse from Holy Family Nursing and Midwifery Training College, Berekum who would like to take him and the family for my care study. It was explained to the patient that home visits will be included. Explanation was given that, before one becomes a professional nurse, the person need to carry out a study on a patient before given a license by the Nursing and Midwifery Council, Ghana to practice. Therefore, patient and his mother's consent were sought for approval for them to be used for the study. I also assured them of privacy and confidentiality. I added that a report will be written after the entire event about the care study. They agreed and were willing to cooperate. On admission, patient and family were made to understand that, hospitalization is temporal and patient's condition will improve and will be discharged home to continue treatment. Drugs were taken from the ward pharmacy and administered as prescribed. They were also made to know that, the care would be terminated when patient is well. Patient was chosen for the care study to help me get more knowledge about the condition, the treatment and management given to patients with the sickle cell disorders. Patient's condition on admission was fair and he was made comfortable in bed awaiting transfusion.

A nursing diagnosis of joint and waist pains related to vaso-occlusive crisis was made at 3:15am to help manage patient's pain. Therefore an objective was set to help Master A.P.A. be relieved from the pain within 24 hours. The following interventions were carried out to meet the objective

set; Patient was reassured that measures will be put in place to relieve his joint and waist pains, warm compress was applied to the joints to enable vasodilation, patient's pain was assessed using the numerical pain rating scale and patient rated pain as '8', patient was engaged in therapeutic communication to divert his attention on pain, a warm comfortable admission bed with warm blankets was provided for him to ensure rest and IV morphine 5mg was administered as prescribed.

A nursing diagnosis of impaired mobility related to joint and waist pains was formulated at 4:00am to help relieve patient of walking difficulties. Therefore an objective was set to help Master A.P.A. regain his ability to walk within 24hours. The following interventions were carried out to meet the objective set; Patient was reassured that his walking ability will be restored, patient's ability to walk was assessed. Patient walked from bed to bathroom, nurse's station and back, patient was encouraged to take at least 8 cups of copious fluids to prevent dehydration, a simple bed free from creases and cramps with head end elevated 30^{o} was made for patient to ensure adequate rest, patient was served with nutritious diet rich in calories, protein and iron such as meat and green vegetable to help increase his energy level, patient's pain was managed with diversional therapy by engaging him in a conversation.

At 7:30am, patient and mother were anxious and so a nursing diagnosis of anxiety related to unknown outcome of disease condition. Therefore an objective was set to help relieve Master A.P.A. and mother of anxiety within 48hours. The following interventions carried out to meet the objective set; Patient and relative were reassured of competent nursing care that will be ensured to alleviate their anxiety, patient and relative were educated on the benefits of procedures such as vital signs monitoring and administration of medication to ensure understanding of treatment, procedures that were performed on the patient were explained to him to gain his cooperation, patient and family were encouraged to ask questions about his condition to clear their doubt,

straight forward answers were given promptly and tactfully in Ghanaian language “Twi”, patient and family were orientated to the hospital environment to promote comfort and decrease anxiety.

At 10:00am, vital signs were checked and recorded. At 11:13am, the first pint of O+ whole blood with batch number SDA 621/21 with expiry date of 03/12/21 was set up with no premedication prescribed. Patient was educated on the signs and symptoms of transfusion reaction and to report immediately and was under close monitoring. Pre-transfusion vital signs checked were recorded as: Temperature - 36.7^{o}C, Pulse - 86bpm, Respiration - 21cpm and Blood Pressure - 114/76mmHg. At 2pm, patient’s vital signs were checked and documented as: Temperature – 37.0^{o}C, Pulse - 72bpm, Respiration - 26cpm and Blood Pressure - 120/70mmHg. At 2:10 pm blood was successfully transfused without any reaction with post transfusion vital signs as Temperature – 36.5 ^{o}C, Pulse – 90bpm, Respiration – 20cpm and Blood Pressure – 120/70mmHg. . At 6:00pm, vital signs were checked and recorded. At 6:25pm, patient was served with plain rice with beans stew and meat with slides of pineapple and orange. At 10:00pm, vital signs recorded: Temperature - 36.5^{o}C, Pulse - 88bpm, Respiration - 22cpm and Blood Pressure - 110/70mmHg. Patient was assisted to attend to his oral hygiene and bath. He was made comfortable in bed.

Second Day of Admission (11th November, 2021).

At 3:15am, Master A.P.A. was met in bed slightly awake and was asked the reason for his sudden awake, he said he was okay and just that he was praying, and so the objectives formulated to help patient’s pain subside within 24 hours was evaluated and goal was fully met as patient rated pain as ‘1’ on the numeric pain rating scale and the nurse observing that patient is relaxed in bed.

At 4:00am, was seen going to the washroom to ease himself, on arrival the objectives set to help patient regain his ability to walk within 24hours was evaluated and goal was fully met as patient

reported his ability to walk without assistance and the nurse observing patient walk from the bed to bathroom, nurse's station and back. Master A.P.A. woke up around 5:30am, he then maintained his personal hygiene. At 6:00am, routine vital signs were checked accordingly and recorded indicating normal values as shown in the appendix. Patient had his breakfast at 7:00am which was a cup of porridge and a slice of bread. Medications were served as in treatment regime. Ward round took place at 8:30am and doctor requested we continue treatment regimen. Patient and relative's anxiety was assessed and they were a bit anxious and so the interventions continued.

At 10:00am, patient complained of difficulty sleeping and a nursing diagnosis of insomnia related to change of environment was made on him. A goal was set for patient to regain his normal sleep pattern (6-8 hours in the night and 2 hours in the day) throughout hospitalization. The following interventions were put in place to meet the objectives set; Patient was reassured of regaining normal sleep pattern, comfortable bed was made for patient by using clean sheets free from creases and cramps to ensure adequate rest, patient was encouraged to have a warm bath to induce sleep, a quiet environment was created for patient to have a good sleep, all nursing activities were done almost at the same time, this promoted minimal interruption in sleep, personal hygiene routines performed before sleep for the patient such as urinating and toileting before bed was ensured. At 10:54am, the second pint of B+ whole blood with batch number SU 223 with expiry date of 03/12/21 was set up with no premedication prescribed. Patient was educated on the signs and symptoms of transfusion reaction and to report immediately and was under close monitoring. Pre-transfusion vital signs checked were recorded as: Temperature - 36.6^{o}C, Pulse - 80bpm, Respiration - 20cpm and Blood Pressure - 110/70mmHg. At 1:00 pm, blood was successfully transfused without any reaction with post transfusion vital signs as Temperature - 36.7^{o}C, Pulse - 96bpm, Respiration - 20cpm and Blood Pressure - 118/76mmHg. Patient had his lunch in the

afternoon which was rice and beans stew with fried fish. At 6:00pm, vital signs were checked and recorded. Medications were administered and patient was allowed to rest. He had his supper around 6:30pm in the evening. At 10:00pm, vital signs were checked and recorded and patient was made comfortable in bed.

Third Day of Admission (12th November, 2021).

On the third day of admission, patient woke up at 6:00am. Patient's condition had improved than the previous days. Patients had a warm bath and maintained his oral hygiene. The patient's morning vital signs were checked and recorded as shown in the appendix indicating normal values. His sleeping pattern was assessed and patient could sleep 3 hours during the night and so the interventions continued. At 7:30am, a goal set to help relieve Master A.P.A. and mother of anxiety was evaluated and goal was fully met as patient and family verbalized they are no more anxious and the nurse observed patient and relative having a cheerful facial expression. He took his breakfast at 8:00am but could not eat properly as usual. A doctor came to conduct ward rounds at 8:30am and requested continuation of the patient's treatment regimen and also patient was encouraged to take more fluids. At 10:30am, the third pint of B+ whole blood with batch number SU 3045 with expiry date of 05/12/21 was set up with no premedication prescribed. Patient was educated on the signs and symptoms of transfusion reaction and to report immediately and was under close monitoring. Pre-transfusion vital signs checked were recorded as: Temperature - 36.4^{o}C, Pulse - 84bpm, Respiration - 20cpm and Blood Pressure - 120/70mmHg.

At 11:10am, patient complained of loss of appetite and a nursing diagnosis of risk for imbalanced nutrition: less than body requirement: related to loss of appetite was made formulated. A goal was set for patient to regain his normal appetite throughout hospitalization. The following interventions were put in place to meet the objectives set; Reassurance was given to patient that he will regain

his normal appetite to maintain his weight, meals were planned with patient considering his likes and dislikes to encourage him to eat, patient mouth was cared for early in the morning and in the evening after supper to boost his appetite, unpleasant articles like bedpan and vomits bowl were removed to prevent patient from nauseating, food was served to patient three times in a day, enough rest was ensured for patient to improve his ability and desire to ingest food.

At 2:00pm, blood was successfully transfused without any reaction with post transfusion vital signs as Temperature - 36.6^{o}C, Pulse - 90bpm, Respiration - 21cpm and Blood Pressure - 120/90mmHg. Patient was served with cabbage stew and yam as lunch with banana as dessert but he could only eat a slice of yam and a finger of banana. Afternoon vitals were checked and recorded as in the appendix. He ate only three morsels of fufu with light soup and fish for supper at 6:00pm. Patient's sleeping pattern was assessed at the end of the day and he could sleep for 30minutes. His vital signs were checked and recorded as seen in the appendix. Evening medications were also served. He had his warm bath and brushed his teeth with paste and tooth brush before going to sleep at 10:00pm after vital signs were checked and recorded.

Fourth Day of Admission (13th November, 2021).

On the fourth day of admission, patient woke up at 6:00am. Patient's condition had improved than the previous days. Sleeping pattern was assessed and he slept for four hours during the night. Patient had a warm bath and maintained his oral hygiene. The patient's morning vital signs were checked and recorded as shown in the appendix indicating normal values. He took five table spoon of porridge which was his breakfast at 8:00am. A doctor came to conduct ward rounds at 8:30am and requested continuation of the patient's treatment regimen and also patient was encouraged to take more fluids. At 1:00pm, interactions with patient and mother revealed that they had inadequate knowledge about the cause, precipitating factors, and the prevention of

the sickle cell crisis. A nursing diagnosis of knowledge deficit related to inadequate information about the causes, signs and symptoms and management of the condition was made and an objective was set to help patient and mother gain knowledge about the condition. The following interventions were carried out; A good nurse-patient relationship was established and reassurance given, patient and family were comfortably seated and windows at the cubicle were opened to ensure ventilation as well as ward television volume turned down to reduce noise, patient was assessed and he had knowledge on the disease condition but lacks information on signs, symptoms and management of the condition, a verbal and detailed information on the condition was given and misconceptions clarified, patient was encouraged to ask questions related to the education given of which the nurse answered them tactfully, patient was provided with leaflet, protocols and flyers containing diagrams of the disease process to enable him understand the education give. Afternoon vitals were checked and recorded as in the appendix. First home visit was made on this day at 4:00pm. The main aim for this visit was to assess patient's home environment and to find out factors that contributed to the patient's health problems. Permission was granted from the ward in-charge for the home visit. He ate five table spoon of jollof rice with egg for supper at 6:00pm. Patient's anorexia was assessed and he could not eat his usual meal as he used to. His vital signs were checked and recorded as seen in the appendix. Evening medications were also served. He had his warm bath and brushed his teeth with paste and tooth brush before going to sleep at 10:00pm after vital signs were checked and recorded.

Fifth Day of Admission (14th November, 2021).

On the fifth day of admission, the patient woke up at 5:00am. Activities of daily living such as oral care, bathing, grooming were done by the patient himself and bed linen was changed. Sleeping pattern was assessed and he slept for seven (7) hours during the night. He was served with warm

tea and bread and he could eat one-third of the meal served. Patient looked better and had a cheerful facial expression. Medications were served and vital signs monitored and recorded as in the appendix. They were within normal range. Ward round was done at 8:00am. On review by the doctor, patient had no new complains. Doctor requested continuity of care and assured patient of discharge if condition is stable the next day. At 1:00pm, a goal set to help patient gain adequate knowledge about the disease condition within 24 hours was evaluated and goal was fully met as patient reported he has enough and detailed information on the disease condition and also patient being able to ask and answer questions tactfully related to the disease condition. His evening meal served was jollof rice with egg at 6:00pm and he could eat two-thirds of meal served. Patient's anorexia was assessed and he could eat better than the previous days. Sleeping pattern was assessed at the end of the day and he slept for an hour during the day. Patient's vital signs were checked and recorded. After thorough physical examination the doctor requested that patient should continue with his medications with assurance that he would be discharge the next day.

Patient's day of discharge (15th November, 2021)

On the day of discharge, patient face looked cheerful and happy. He was grateful to the nursing and medical staff. He took his warm bath and maintained his oral hygiene. Medications were served as requested and vital signs checked and recorded. During the ward rounds, on doctor's assessment patient did not have any new complain and he was discharged home at 9:30am with the following drugs:

Tablet Cefuroxime 500mg bd x 7/7

Tablet folic acid 5mg daily x 30.

Around 10:00am, patient's relative was informed about patient's discharge and a goal set to help patient regain his normal sleep pattern was evaluated. Goal was fully met as nurse observed the patient have a sound sleep and patient verbalizing that he had enough sleep till discharge. Madam H.K. and son were so grateful to the medical and nursing staff for helping her son to recover without any complications. At 11:10am, a goal set to help patient regain his normal appetite and interest in food was evaluated and goal was fully met as patient reported he can eat to his satisfaction and also the nurse observing that patient can eat at least 2/3 of his usual meal served. Settlement of hospital bills was not a problem since patient was insured with the National Health Insurance Scheme. Patient's folder was taken for assessment of non-insured services and those bills were paid for at the cash office. A receipt was issued to the patient. Patient and mother were educated on the need to provide nutritious diet, rich in folic acid for instance green leafy vegetables and iron rich food to prevent anaemia, high calorie diet to give energy, protein to build and repair worn -out tissues and supplement with vitamins to boost his immune system. Again, patient and mother were educated on the need to continue the drugs prescribed. They were also informed about the date of review that is 29th November, 2021 and was to report to the out patients department.

Patient's name was entered into the admission and discharge book and in the daily ward state indicating that he was discharged. Patient's valuables were not in possession of any other nurse. Patient's mother was assisted to pack their belongings and the bed on which patient lied was disinfected together with the locker he used after which they bid goodbye to the staff and other patient on the ward and left in a taxi at 2:00pm.

4.2 Preparation of Patient and Family towards Discharge and Rehabilitation

Preparation of patient/family for discharge started on the day of admission when they were told that the hospital is a temporal place for them and that they will be discharged if patient health is

restored. The aim was to make them comfortable and understand that the hospital was a temporary place for health care and patient would be discharged home to continue treatment when his condition improves. They were told that, the disease is hereditary in origin but some predisposing factors such as exposure to cold, infection, dehydration, stress, emotional disturbances, strenuous physical activities and poor nutrition trigger the crisis. Patient was educated on malaria, he was educated on the need to sleep under treated mosquito net because malaria can trigger his condition. Patient's mother was also encouraged to make sure that patient takes his medications to ensure continuity of care at home and ensure complete recovery. They were educated on the need for good personal hygiene and good nutrition. Patient and his mother were advised on the importance of review and to keep to the said date (29/11/11) and also to report promptly to the hospital for proper management if any change occurs in patient's condition before the review date. He was educated on the need to seek counselling and medical assistance when the need arise for him to get married. Patient was discharged on 15th November, 2021.

Follow Up/Home Visit/Continuity of Care

A home visit is a visit to the home of the patient with the aim of promoting health through education and assessment of health status. It is carried out before and after discharge. The reasons for this visit is to help assess the nature of patient and family's home/community and the people in the home/community to determine people at risk (vulnerable) to diseases. It also help patient's family to be educated on any unhealthy living and factors that will be identified .State of patient and family's health are assessed and documented.

First Home Visit (13th November, 2021).

My first home visit was made on the 13th of November, 2021 while my patient was on admission. A planned visit was made to New Dormaa in the Bono region where my patient resides. The purpose of this visit was to know my patient's residence and the environment in which he lives, verify the information given to me as well as to identify the risk factors such as familial tendency and stresses that can lead to his condition. I embarked on this visit with the help of the direction or address that patient and mother gave to me on the day of admission. I left Sunyani-Penkwase around 3:35pm and alighted at New Dormaa-Pastoral centre junction around 3:50pm. The road from Sunyani-Penkwase through to New Dormaa was tarred. On arrival, I called Madam H.K. on phone and told her my intentions of visiting them and where I was at the moment so she gave me directions and I followed the direction to the house. Right from the Pastoral-centre junction, the house is near the Musama-Disco Kristo church. When I arrived at the house, I knocked and I was asked to come inside where I met patient's mother, siblings and some relatives, I greeted them and was offered a seat. I was then given water to drink and I was asked my mission and I mentioned my name and explained that I am a student nurse who is caring for Master A.P.A. at the Sunyani Regional Hospital and have been studying on his condition and as part of the study, there is the need to visit patient's home which will help in giving health education on patient's condition to prevent the reoccurrence of his condition. They were glad to see me and about my mission. They then asked of his condition and how he is faring and I responded that he is responding to treatment and will get better soon. A thorough and quick assessment was made on the patient's environment which was clean. Their house is built with cement blocks, well plastered with good lightening system from Volta River Authority and good water source. They were living with other tenants. Their source of water which was tap water

from the Ghana Water Company was clean and healthy. They have a dustbin with a well-fitting lid in which they dump their waste materials and it is emptied every morning to the community refuse disposal site. The environment was well swept and clean. The patient lives in the house with his mother, three siblings and an aunt. In total, they were six people staying in the house. Vulnerable in the house were young children and adolescents. Observations made in the room revealed well-furnished wall with television set, sound system, a ceiling fan, bed, couch and a wooden centre table. I also had the opportunity to enter their bed room and it was very neat and well organized and they were applauded for that. I also entered the toilet and saw that it is a water closet. The place was clean, with the container for toilet papers emptied. Madam H.K.'s was educated on the need to practice good environmental and personal health and also was encouraged to continue to keep their home and surroundings clean. I reassured Madam H.K. of competent nursing care that her son will be well very soon. She thanked me and assured me that she will ensure that all what I said will be done before I come for my next home visit. I left New Dormaa at 5:10pm and got to the hospital at 5:25pm.

Second Home Visit (19th November, 2021).

My second home visit took place on 19th November, 2021, four days after Master A.P.A. was discharged to find out the health status of him and to remind them of review date. I took an okada to New Dormaa at 4:00pm. When I got to the town, I went straight to his house. On arrival at patient's house at 4:15pm, he warmly welcomed me and offered a seat. After exchange of pleasantries with patient and relatives, enquiry was made of any new complaint and general health of Master A.P.A. and the family. There were no complaints as he looked very active and cheerful. Patient was asked about his medications and was told he was taking them. He was encouraged to continue taking his medications and also to report to the hospital if he notices

anything unusual. I further stressed on the importance of good nutrition, the need to eat more fruits and vegetables and also the importance of maintaining environmental and personal hygiene. They were reminded of the review date which was 29th November, 2021. After having some chats on Master A.P.A.'s condition, permission was sought to leave. Patient escorted me to the roadside where I took an okada to Penkwase at 6:00pm.

Review (29th November, 2021).

Master A.P.A. came to the Regional Hospital, Sunyani for review on 29th of November, 2021 around 8am. I went with him to retrieve his folder from the records. Upon my interaction with patient, it was observed that his condition had really improved. His vital signs were checked and were within normal range thus, Temperature: 36.4^{o}C, Respiration: 19cpm and the Pulse: 74bpm and Blood pressure: 110/70mmHg.

Patient was escorted to the consulting room of the out-patient department and upon assessment by the doctor he confirmed the condition had improved. He was given Tab Folic acid 5mg daily x 30 days. The drug was collected from the hospital pharmacy for him. He thanked me, I bade him goodbye and he took a taxi home at around 10:00am.

Third Home Visit (6th December, 2021).

The main reasons for conducting the third home visit were to: Assess the general condition of patient and family, reinforce the need to comply with treatment regimen and finally terminate care.

On the said date, I set off around 4:00pm with an okada. I got to his place around 4:15pm. Patient and family were doing well as they looked cheerful and had no complains. The environment was tidy as there were no rubbish nor stagnant water around. I handed over patient to his mother to continue with care at home. Madam H.K. commended me for a good work done

and accepted to continue the care of Master A.P.A. at home. I however stressed on the importance of regular check-ups and to seek prompt medical attention whenever they fall sick and rather than relying on self-medication. I asked about patient's drugs and it was found that he had been taking his medications and the recommended foods had also been adhered to. After interacting with patient and family for a while, I reemphasized on health educations that had been given to them already. Since it happened to be my last day of therapeutic relationship with patient and family, I terminated my care and thanked them for their cooperation which made my study a success. Again patient and his family expressed their gratitude by showing how grateful they were to me for the support and care given to them. I eventually sought permission to leave and bid them the final farewell. I board an okada back to Penkwase at 6:00pm.

CHAPTER FIVE

EVALUATION OF CARE RENDERED TO PATIENT AND FAMILY

5.0 INTRODUCTION

Health care evaluation is the critical assessment, through rigorous process, of an aspect of healthcare to assess whether it fulfills its objective. This chapter examines the benefit of the nursing care that was rendered to the patient and her family. It also talks about assessment of the nursing interventions rendered to the patient and her family and their response to the interventions.

5.1 Statement of Evaluation

Throughout the period of admission, six health problems were recorded and objectives were set to solve them. Below is the summary of the interventions carried out and to what extent the goals were met.

1. **Master A.P.A's acute pain was relieved within 24 hours.**

On the 10th November, 2021 at 3:15am, a nursing diagnosis was formulated as joint and waist pains related to vaso-occlusive crisis to help manage patient. An objective was set to relieve patient of pain within 24 hours. The following interventions were carried out to help meet the set objectives; Patient was reassured that measures will be put in place to relieve his joint and waist pains, warm compress was applied to the joints to enable vasodilation, patient's pain was assessed using the numerical pain rating scale and patient rated pain as '8', patient was engaged in therapeutic communication to divert his attention on pain, a warm comfortable admission bed with warm blankets was provided for him to ensure rest, IV morphine 5mg was administered as prescribed. On November 11, 2021 at 3:15am, patient's pain was evaluated and goal was fully met

as evidenced by patient rating pain as '1' on the numeric pain rating scale and the nurse observing that patient is relaxed in bed.

2. Master A.P.A's walking ability was restored.

On November 10, 2021 at 4:00am, patient complained of difficulty walking and a nursing diagnosis formulated stated that, impaired mobility related to joint and waist pains and objectives were set to help patient regain his ability to walk within 24 hours. The following interventions were carried out to help meet the set objectives; Patient was reassured that his walking ability will be restored, patient's ability to walk was assessed. Patient walked from bed to bathroom, nurse's station and back, patient was encouraged to take at least 8 cups of copious fluids to prevent dehydration, a simple bed free from creases and cramps with head end elevated 30^{o} was made for patient to ensure adequate rest, patient was served with nutritious diet rich in calories, protein and iron such as meat and green vegetable to help increase his energy level, patient's pain was managed with diversional therapy by engaging him in a conversation. On November 11, 2021 at 4:00am, patient's walking was evaluated and goal was fully met as evidenced by patient reporting his ability to walk without assistance and the nurse observing patient walk from the bed to bathroom, nurse's station and back.

3. Patient and family's anxiety was resolved.

On November 10, 2021 at 7:30am, patient was anxious and a nursing diagnosis formulated stated that, anxiety related to unknown outcome of hospitalization and objectives were set to relief patient of anxiety within 48 hours. The following interventions were carried out to meet the set objectives; Patient and relative were reassured of competent nursing care that will be ensured to alleviate their anxiety, patient and relatives were educated on the benefits of procedures such as vital signs

monitoring and administration of medication to ensure understanding, procedures that were performed on the patient were explained to him to gain his cooperation, patient and family were encouraged to ask questions about his condition to clear their doubt, straight forward answers were given promptly and tactfully in Ghanaian language "Twi", patient and family were orientated to the hospital environment to promote comfort and decrease anxiety. On November 12, 2021 at 7:30am, anxiety was evaluated and goal was fully met as evidenced by patient and family verbalizing they are no more anxious and also the nurse observing patient and relatives having a cheerful facial expression.

4. Master A.P.A. had adequate night sleep throughout the period of hospitalization

On November 11, 2021, at 10:00am, patient complained of not able to sleep at night and a nursing diagnosis was formulated stating; Insomnia related to change of environment and objectives were set to help patient resume his normal sleeping pattern throughout hospitalization. Interventions were carried out to meet the set objectives; Patient was reassured of regaining normal sleep pattern, comfortable bed was made for patient by using clean sheets free from creases and cramps to ensure adequate rest, patient was encouraged to have a warm bath to induce sleep, a quiet environment was created for patient to have a good sleep, all nursing activities were done almost at the same time, this promoted minimal interruption in sleep, personal hygiene routines performed before sleep for the patient such as urinating and toileting before bed was ensured. On November 15, 2021, at 10:00am patient's sleeping pattern was evaluated and goal was fully met as evidenced by nurse observing the patient have a sound sleep and also patient verbalizing that he had enough sleep till discharge.

5. Master A.P.A's eating pattern was restored throughout the period of hospitalization

On November 12, 2021, at 11:10am, patient complained that he couldn't eat half the meal served and a nursing diagnosis was formulated stating, Risk for imbalance nutrition: less than body requirement: related to loss of appetite. Objectives were set to restore patient's eating pattern throughout the period of hospitalization. The following interventions were carried out to meet the set objectives; Reassurance was given to patient that he will regain his normal appetite to maintain his weight, meals were planned with patient considering his likes and dislikes to encourage him to eat, patient mouth was cared for early in the morning and in the evening after supper to boost his appetite, unpleasant articles like bedpan and vomits bowl were removed to prevent patient from nauseating, food was served to patient three times in a day, enough rest was ensured for patient to improve his ability and desire to ingest food. On November 15, 2021, at 11:10am, patient's eating pattern was evaluated and goal was fully met as evidenced by patient reporting he can eat to his satisfaction and also the nurse observing that patient can eat at least 2/3 of his usual meal served.

6. Master A.P.A. and family gained knowledge on condition.

On November 13, 2021 at 1:00pm, patient was assessed and he had had less knowledge on the disease condition and a nursing diagnosis formulated stated that Knowledge deficit (causes, signs and symptoms, complications) related to inadequate information about the disease condition. Objectives were set to help patient gain knowledge on disease condition within hour. The following interventions were carried out to meet the set objectives; A good nurse-patient relationship was established and reassurance given, patient and family were comfortably seated and windows at the cubicle were opened to ensure ventilation as well as ward television volume turned down to reduce noise, patient was assessed and he had knowledge on the disease condition but lacks information on signs, symptoms and management of the condition, a verbal

and detailed information on the condition was given and misconceptions clarified, patient was encouraged to ask questions related to the education given of which the nurse answered them tactfully, patient was provided with leaflet, protocols and flyers containing diagrams of the disease process to enable him understand the education given. On November 14, 2021, at 1:00pm, patient's knowledge on condition was evaluated and goal was fully met as evidenced by patient reporting he has enough and detailed information on the disease condition and also patient being able to ask and answer questions tactfully related to the disease condition.

5.2 Amendment of Nursing Care Plan

Master A.P.A. was admitted on the 10th November, 2021, at 3:00 am accompanied by his mother. During period of hospitalization, six (6) health problems were identified. Goals were set to deal with the problems through various nursing interventions which led to achievement of each goal.

There were no partially met or unmet objectives; hence there was no need for amendment of the care plan.

5.3 Termination of Care

My last home visit to Master A.P.A. and relatives was made on December 6, 2021. The purpose was to see how Master A.P.A. was doing at home and to see the general condition of patient and of the entire family, to see whether condition has improved after review and to terminate care finally. During the period of admission of patient, six (6) problems were identified and adequate or efficient nursing interventions were rendered to patient and all the set goals were fully achieved. Patient and family were educated on the causes, the signs and symptoms, and the treatment given and how treatment is done in the sickle cell crisis in the sickle cell disease. Education was also given to patient and family on personal and environmental hygiene, education on balanced diet, and the immediate medical care to seek when there is a change in

patient's condition. After informing them that it was my last visit to them, I told them I may visit when there is a chance but will be returning to school to continue my education. I then handed over Master A.P.A. to mother and family for the continuity of care. I then thanked them for the opportunity given and their co-operation and support for making it a success. They also expressed their gratitude for the holistic care rendered to them during the hospitalization of Master A.P.A.

CHAPTER SIX

SUMMARY AND CONCLUSION

6.0 Introduction

This is the last chapter and the last step of the patient and family care study which involves the student appreciation of the therapeutic relationship with the patient and family and also the use of the nursing process.

6.1 Summary of Care Rendered

Master A.P.A. a 21-year-old male was admitted to the accident and emergency ward at Sunyani Regional Hospital on 10th November, 2021 with a diagnosis of sickle cell crisis with vaso-occlusive crisis. During the period of admission, the following are problems that were identified on patient; severe joint pains, difficulty walking, anxiety, insomnia, loss of appetite, less knowledge on condition. Nursing goals were set and interventions were implemented according to each of the problems presented in solving them by the use of nursing care plan.

The following investigations or test were requested and were carried out on Master A.P.A.:

- Blood film for malaria parasite
- Blood for full blood count
- Blood for grouping and cross matching

The following drugs were prescribed for his treatment;

- Intravenous Normal Saline 1litre for 24 hours
- IV Cefuroxime 750mg tds x3days
- IV Ceftriaxone 2g daily x 48hours
- Tablet folic acid 5mg daily x 30days

He was under the care of Dr. N.A and he spent five days at the ward and was discharged on 15th November, 2021. With the identified health problems, a comprehensive nursing care was given to solve patient's health problems using the nursing process including administration of medication, education of patient and family about the condition and three home visits as requested were embarked on. The first home visit which was embarked happened when patient was on admission on November 13, 2021. The second home visit was embarked on November 19, 2021 and the third home visit which was the last home visit was embarked on December 6, 2021 and the review day happened on November 29, 2021. During the third home visit, when patient had fully recovered, Master A.P.A. was handed over to his mother to continue the care and that was when care was terminated.

6.2 Conclusion

In conclusion, the patient and family care study has helped me to know and understand the comprehensive and holistic nursing care given to individual patient and family. The nursing of Master A.P.A. and family has helped me gain much knowledge on sickle cell crisis in the sickle cell diseases and has enabled me in getting much insight in the condition, the causes, the signs and symptoms, diagnosis, complications and treatment. Also, through this nursing care process, I have been able to put into practice what I have been taught as a nursing student. It has enlightened me on family's attitude towards illness and behaviors of patient's when they are sick. I hope and believe that the additional knowledge and experience I have acquired while nursing Master A.P.A. and the family would help me offer comprehensive nursing care to other patients in the health setting and community as a whole.

It also informed the patient and his family of the risk factor and triggers of sickle cell crises and how to prevent themselves from acquiring the crises.

The individualized, comprehensive, holistic and competent nursing care rendered to patients will enable them speak good about the hospital and encourage others to come to the hospital to get a feel of this holistic care.

My recommendation is that, during our nursing practice, all patients should be given an individualized, comprehensive, holistic and competent nursing care to help decrease the re-occurrence of disease at the hospital. I recommend that the ministry of health should create awareness among the general public for individuals to know their sickling status before getting married to prevent the occurrence of the disease in their children.

Bibliography

Breslin, G., & McKeown, C. (Eds.). (2018). *Collins English Dictionary* (13th ed.). Glasgow: HaperCollins Publishers.

Feather, A., Randall, D., & Waterhouse, M. (Eds.). (2020). *Kumar and Clark's Clinical medicine* (10th ed.). London, United Kingdom: Elsevier Health Sciences.

Herdman, H. T., & Kamitsuru, S. (Eds.). (2018). *NANDA Internation, Inc. nursing diagnosis: definitions and classifications: 2018-2020* (11th ed.). New York: Thieme.

Hinkle, J. L., & Cheever, K. H. (2018). *Brunner & Suddarth's Textbook of Medical-Surgical Nursing* (14th ed.). Philadelphia: Wolters Kluwer.

Lewis, S., Dirksen, S., Heitkemper, M., Bucher, L., & Harding, M. (2017). *Medical-Surgical Nursing: Assessment and Management of Clinical Problems* (10th ed.). St. Louis: Elsevier.

Obeng, P. A. (2020). *Handbook for Nurses' Care Plan.* Bono region, Ghana: Author.

Stamper, K. (Ed.). (2016). *Merriam-Webster dictionary* (11 ed.). Springfield, Massachusetts: G. & C. Merriam Co.

Sundd, P., Gladwin, M. T., & Novelli, E. M. (2018, October 17). *Pathophysiology of Sickle Cell Disease*. Retrieved from Annual review of pathophysiology: www.ncbi.nih.gov

Tortora, G. J., & Derrickson, B. (2017). *Principles of anatomy & physiology.* (15th ed.). Hoboken, New Jersey: Wiley Loose-Leaf Print Companion.

Weller, B. F. (2019). *Bailliere's nurses' dictionary: for nurses and healthcare workers* (27th ed.). London: Elsevier Health Sciences.

Patient folder number : Regional Hospital, Sunyani.

APPENDIX

TABLE 8: Vital signs of Master A.P.A.

DATE	TIME	TEMPERATURE (^{O}C)	PULSE (bpm)	RESPIRATION (cpm)	BLOOD PRESSURE (mmHg)
10/11/2021	3:00am	36.6	80	20	100/63
	6:00am	36.4	84	20	110/60
	10:00am	36.4	92	22	112/70
	11:13pm	36.7	96	20	118/76
	2:00pm	36.6	86	21	114/76
	2:10pm	36.5	90	20	120/70
	6:00pm	36.6	90	19	120/73
	10:00pm	36.2	88	20	120/60
11/11/2021	6:00am	36.5	80	18	120/70
	10:00am	36.6	82	18	110/60
	10:54am	36.6	80	20	110/70
	1:00pm	36.7	96	20	118/76
	2:00pm	37.0	60	18	120/70
	6:00pm	36.8	68	20	120/60
	10:00pm	36.4	70	19	110/80
12/11/2021	6:00am	36.7	89	21	120/80

	10:00am	36.6	90	21	120/90
	10:30am	36.4	84	20	120/70
	2:00pm	36.6	90	21	120/90
	6:00pm	36.6	95	25	110/70
	10:00pm	36.5	93	21	100/70
13/11/2021	6:00am	37.0	80	24	100/60
	10:00am	37.2	82	22	119/60
	2:00pm	36.5	60	18	110/60
	6:00pm	36.2	68	18	120/60
	10:00pm	36.5	70	18	110/80
14/11/2021	6:00am	36.2	68	19	114/70
	10:00am	36.8	72	20	116/73
	2:00pm	36.7	76	22	110/60
	6:00pm	36.5	68	20	120/60
	10:00pm	36.0	66	18	110/70
15/11/21	6:00am	36.2	70	18	114/70

SIGNATORIES

THE STUDENT NURSE

NAME: APPIAH KUBI PETRA

SIGNATURE: .....

DATE: 05/10/2022

THE SUPERVISOR, NURSING AND MIDWIFERY TRAINING COLLEGE, BEREKUM

NAME: MR. EMMANUEL ALI

SIGNATURE: .....

DATE: 05/10/2022

THE NURSE-IN-CHARGE OF ACCIDENT AND EMERGENCY WARD, REGIONAL HOSPITAL, SUNYANI.

NAME: MRS. IRENE KUMI

SIGNATURE: .....

DATE: 05/10/2022

THE PRINCIPAL, HOLY FAMILY NURSING AND MIDWIFERY TRAINING COLLEGE, BEREKUM.

NAME: MONICA NKRUMAH

SIGNATURE: .....

DATE: 06/10/2022

ACADEMIC CO-ORDINATOR - NURSING
HOLY FAMILY NURSING & MIDWIFERY
TRAINING COLLEGE, BEREKUM