HOLY FAMILY NURSING AND MIDWIFERY TRAINING COLLEGE

BEREKUM

A PATIENT AND FAMILY CARE STUDY ON

SEVERE MALARIA

BY

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

AUGUST, 2022

PREFACE

Health care delivery in recent times has progressed and has adopted innovative changes especially in the nursing care delivery. Due to this, the nurse is compelled to render a comprehensive care to every client in his or her charge.

Unlike the past, nursing now employs the use of research and the use of scientific data in the performance of the various roles in ensuring quality health care delivery. This is evidenced by the broadening services to the door steps of clients, and the involvement of technologically based initiatives like Computers for effective documentation.

In effect to meet the ever-changing demands of the client with time, there must be corresponding innovations in providing quality health care for the benefit of all.

The inclusiveness of certain subjects like Sociology, Basic Nursing, Anatomy and Physiology, Therapeutic Communication, Professional Adjustment to mention but a few provides for dynamic skills in the care of the patient and family.

The patient/ family care study is also one of the requirements towards the award of a license by the Nursing and Midwifery Council of Ghana to practice as a Professional Registered General Nurse. Patient/family care study writing entails a student nurse taking a client with a particular disease condition and nursing him or her taking into account the physical, psychological, social, economic and spiritual needs of the client from the day of admission till the day of discharge.

Patient/family care study again equips the student with the necessary knowledge and skills to render a competent, professional, holistic and quality care to the patient/family. It also gives the student a chance to apply both theoretical and practical approaches to learning as he/she writes the care study and renders the nursing care to the client and his or her family.

ACKNOWLEDGEMENT

To God be the glory for providing me with strength and knowledge for this project to materialize. My profound gratitude goes to Master N.R. and his family for granting me consent to conduct this study on them and also giving me their immense cooperation and support.

I also extend my sincere gratitude to my supervisors Mr. Ali Emmanuel and the entire staff of the Holy Family Nursing and Midwifery Training College, Berekum, for their advice and direction throughout the process of writing this care study.

Again, my sincere gratitude goes to the Nursing officer in charge of the Male Ward of Holy Family Hospital, Berekum, Mr. Benjamin Effah and the entire staff in the hospital for their support and encouragement throughout the period of nursing care to my patient in the ward.

Furthermore, I want to show my most gratefulness my lovely mother, Mrs. Kate Kumi for her psychological and financial support during the writing of this care study.

I cannot conclude without acknowledging Amoah Princess Jill, all Diploma twenty-two students and my lovely friends, Adwoa Boatemaa, Fofie Doreen Badu and Ampofo Baffoe Emmanuel for their prayers, support and encouragement.

Finally, I appreciate the efforts of the authors and publishers whose books served as references for the writing of this care study. God bless you all.

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INTRODUCTION

Master N.R. was admitted on the 31th of January, 2022 at 3:00pm through the Out-Patient Department of the Holy Family Hospital, Berekum per ambulatory accompanied by one student nurse and a relative. Patient had fever and he also complained of headache, dizziness, fatigue loss of appetite and vomiting was recorded. He was diagnosed of Severe Malaria. The patient and his mother were welcomed and I made it known to them my interest in taking him and his family for my care study which they accepted. Six health problems were identified during his stay in the hospital. Nursing Diagnosis were formulated and interventions put in place to resolve the health problems.

Laboratory investigations requested were;

1. Blood film for malaria parasites
2. Blood for full blood count
3. Blood for grouping and cross-matching

Master N. R. was managed on the following medications;

1. IV Artesunate 96mg at 0hour, 12hours and 24hours respectively
2. Tablet Paracetamol 500mg tid x 5days
3. Syrup Zincofer 5mls daily x 14days
4. Intravenous Normal Saline 2 litres within 48 hours
5. Tablet Folic acid 5mg daily x 30days
6. One unit of blood (B^+ packed cells)
7. Tablet Arthemether/ Lumifanthrine – 60/ 360mg bd x 72hours

During the study, I visited his house three times, thus, on the 2nd of February, 2022, while Master N.R. was still on admission, on the of 8th of February, 2022, for follow up after discharge and the last visit on 11th February, 2022 for termination of care.

The report of the study is written in six chapters.

Chapter one deals with assessment of patient and family.

Chapter two presents the analysis of data collected on patient.

Chapter three emphases on planning for patient and family care.

Chapter four discusses the implementation of patient and family care.

Chapter five presents the evaluation of care rendered to patient and family

Chapter six deals with the summary and conclusion.

CHAPTER ONE

ASSESSMENT OF PATIENT AND FAMILY

1.0 Introduction

Assessment is the systematic and continuous collection of data; sorting, analyzing, and organizing data; and the documentation and communication of the data collected to determine the patient's health status and any actual or potential health problems (Butler & Pace, 2019).

The assessment of the patient and family during admission is the first step of the nursing process. This phase deals with the collection of data from the patient, family, friends and existing medical records. This forms the basis of nursing care, since it aids the patient centered care needed, to identify the health problems the patient/family faces through establishment of good rapport and medical records.

Assessment is done through physical assessment of client, interview and observation. The assessment covers the patient's particulars, family medical/surgical history, family socio-economic history, patient's developmental history, patient's lifestyle and hobbies, patient's past medical/surgical history, the present medical/surgical history of the patient, admission process of the patient and family, patient/family's concept about the illness, literature review on the condition and validation of data. Data was collected from the patient, relatives, health personnel, laboratory investigation and textbooks from which analysis was made to identify patient's problems in order to plan and implement care. The methods used in assessment to obtain data from patient and family include, observation and interview with patient and family.

1.1 Patient's Particulars

Patient's particulars refers to the biological data of a client and also includes areas such as patient's name (initials), date of birth, sex, marital status, nationality, next of kin, address, occupation, hometown and others (Marilynn, 2017).

Master N.R. is the patient for this care study. He is Sixteen years old born to Mr. Y.S. and Mrs. A. P. on 14th January, 2006. He comes from Biadan, a village in the Berekum East Municipality, in the Bono Region of Ghana. He lives with his parents at Nyame Nnae with house number NY 112 -Nyame Nnae, Berekum. He is a Ghanaian who speaks Twi and the English language. He is a Catholic. He is a student and currently studying at St. Hubert Senior High School, Kumasi. He is in SHS Two (2). He is the last born among two children of his parents. He is a very handsome young boy, very dark in complexion and 1.5m tall. He weighs 38 kilograms. Patient has a body mass index (BMI) of 16.9kg/m^2. He has no physical impairments or disabilities. Patient is a registered member of the National Health Insurance Scheme which covers some of his medical expenses.

1.2 Family's Medical History

A family's medical history is a record of medical information about an individual and their biological family. Family history provides a ready view of problems or illnesses within the family and facilitates analysis of inheritance or familial patterns (Shiel, 2019).

According to Master N. R. and his mother Mrs. A. P., there are no known hereditary disease conditions such as asthma, diabetes mellitus, mental illness or hypertension in the family. They also said that, there are no chronic conditions like epilepsy and leprosy in the family. However, the family members occasionally do experience minor ailments like headache and common cold,

which they treat with the use of over the counter medications and I educated them on the risk of these medicines are possible unwanted or expected effects that might happen to you when you use them and these risk can be minor like a mild, upset stomach, or more serious such as an increased risk of bleeding or liver damage. Mrs. A. P. said some members of their immediate extended family who are deceased all died natural death at old age. There are no known allergies in the family. Master N.R. said his grandmother is alive and healthy but his grandfather have died which was as a result of old age. Patient also said both parents are alive and healthy as well as his siblings. Interactions with patient reveals that, he have been admitted before on account of malaria.

1.3 Family's Socio – Economic History

Socio-economic history is a brief record about patient's family occupation and source of income. It captures sources of support, coping styles, strengths, and fears or any measure which attempts to classify individuals, families, or households in terms of indicators such as occupation, income and education (Scott & Marshall, 2015). During interaction with patient and his mother, they revealed that, they have no taboo in the family.

According to Master N. R., he depends on his parents for his basic needs. According to him, the family is a peaceful family and they usually meet on certain occasions like funerals, naming ceremonies, marriage ceremonies. He said that both parent are working as Teachers to support the family. They are registered member of National Health Insurance Scheme which covers some of their medical expenses. Also, members of the extended family do provide them with help most of the time. They are well respected in their area of residence because of their kindness, generosity, and well known as Christian family. Client and his family members are all Catholics and therefore they desist from activities which are bad activities such as drinking of alcohol, smoking and stealing as expressed by the master N. R.

1.4 Patient's Developmental History

Development refers to the process of growth and differentiation which involves cognitive, psychosexual and psychosocial processes (Taylor, 2019). Maturation is the process of developing (Taylor, 2019). Growth is the progressive development of a living thing, especially the process by which the body reaches its complete physical development (Taylor, 2019).

According to master N.R., he was told by his mother she had a spontaneous vaginal delivery without any difficulties. There were no complications during pregnancy, labour, delivery and throughout the period of breastfeeding. Congenital abnormalities such as cleft lip and palate, congenital heart defect, hydrocephalous were absent when the client was born.

According to Master N. R., he received immunization against the vaccine preventable diseases. Validation was done by checking patient's right deltoid muscle for scar indicating Bacilli Calmet Guerin (BCG) vaccination.

According to Master N.R.'s mother, at six months he began sitting, crawling at eight months, could walk at one year and could eat all meals prepared at home so he was weaned at one and half years of age. He could talk at two years and could play with other children. Master N. R. did not have any serious illness as a young child and he also confirmed that, during the time of teething, crawling, sitting up, and walking were at the correct times. Master N. R. grew up to be a right-handed person. He is in Senior High School Two (2). Master N. R. dreams to become a Teacher in future as he wants to impact in people knowledge and skills.

Erikson's theory of psychosocial development 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 N. R. falls under the Identity versus role confusion since he is Sixteen years old. According to Master N.R., he started experiencing signs of adolescent such as growing of pubic hairs, deepen of voice, broading of chest at the age of 14. He also said that, he had never been into any relation with any one and that have not had any sexual intercourse before.

Upon interaction with him, I found out that client has identified himself and dreams of becoming a teacher in the future. He did not show any sign of role confusion since he was confident in becoming a teacher in the near future and hence, he stated that he was doing very well in school in other to achieve his dreams.

1.5 Patient's Lifestyle and Hobbies

Lifestyle is defined as the pattern of daily living that an individual develops (Taylor, 2019). Master N. R. usually wakes up at 6:00 am, and says a prayer. He ensures his oral care is done by tooth brush with toothpaste, he empties his bowel and takes his bath twice daily with warm water. He usually takes porridge (Hausa koko) with bread. Master N. R. favorite food is Banku with groundnut soup. He goes to school at 7:00am and closes at 3:00pm. After school, he rests a little while. He takes his supper at 5:30pm and does his personal studies. On Saturdays, he plays football together with his friends on a football pitch in their school and goes to church on Sunday. Patient verbalized that, he is not allergic to any food or drug. Interactions with patient and how he relates to other patients at the cubicle shows that, patient is sociable.

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 (Merriam Webster, 2019).

According to Master N. R., he did not experience any childhood illness, like measles, whooping cough and other diseases as he grew from infancy to childhood. He had previously been hospitalized at Holy Family Hospital, Berekum and spent three days on admission on account of malaria of which haemotransfusion was involved. He occasionally experiences minor ailments such as fever or headache which they treat using drugs bought from pharmaceutical shop at their locality. Education was done on the use of over-the-counter medications and was encouraged to visit the hospital anytime he is not feeling well. Patient has never had surgery, congenital or accidental deformity since birth and hence have no physical disability due to any illness. Master N. R. also verbalized some of the family members had suffered from similar disease and others resulted in accidental deformities. Patient and family stays near a health facility at their locality which provides easy access to health care. Patient also said that, he often visit the hospital for medical check ups.

1.7 Present Medical History

Present medical history according to the medical dictionary (2015) is a chronologic description of the development of the patient's present illness, from the first sign and/or symptom or from the previous encounter to the present which includes the location, quality, severity, duration, timing, content, modifying factors and associated signs and symptoms.

Master N. R. was in his usual state of health until 30th January, 2022 when he started having high body temperature and severe headache. He took some paracetamol, so the fever and headache subsided after some time. According to him, his condition got worse in the evening. His elder sister decided to take him to the Holy Family Hospital, Berekum the next day for medical attention. According to him he could not sleep throughout the night as his temperature kept rising.

He visited the Out Patient Department of the Holy Family Hospital, Berekum on 31st January, 2022 and was seen by Doctor K. D. Laboratory investigations revealed hemoglobin level of 6.5g/dl and Malaria parasites being positive. He was then diagnosed of Severe Malaria. Grouping and cross matching was done. He was asked to be admitted to the Male's medical ward and one-unit of B^+ blood (packed cells) was to be transfused.

1.8 Admission of Patient

On 31st January, 2022 at 3:00 pm, Master N. R. was admitted to the Male's medical ward through O.P.D at the Holy Family Hospital, Berekum per ambulation accompanied by one student nurse and a relative. Patient was fully conscious. I was then tasked with the responsibility to carry out his admission. I took over Master N. R. from the accompanying nurse. Master N.R. complained of severe headache, dizziness, fatigue and high body temperature. The folder was cross-checked to confirm the information on the patient which includes his name, age, residential address, next of kin and religion. A quick assessment of his general appearance was made and he was then welcomed and immediately admitted and made comfortable in an admission bed. His vital signs were checked and recorded as;

- Temperature - 38.2 degree Celsius
- Pulse - 112 beats per minute
- Respiration - 25 cycles per minute
- Blood Pressure - 110/80mmHg

Patient temperature recorded 38.2 degree Celsius and patient was very warm to touch, his heavy clothes were removed and light one put on, nearby windows were opened, he was tepid sponge

and vital sign monitored every 15 minutes after each tepid sponging. Patient temperature reduced to 37.5 ^{O}C.

His particulars such as name, sex, age, and residential address were recorded in the admission and discharge book and the daily ward state. Physical examination was done on patient from head to toe and patient was warm to touch, weak and looked mildly dehydrated. He was introduced to the staffs present and was assured of the competency of the healthcare team. Hospital policies regarding visiting periods, payment of bills and the time vital signs will be checked were explained.

Patient and his relative were oriented to the ward and its surroundings and welcomed. They were reassured of a competent nursing care that everything about Master N. R. will be done with much care to ensure delivery of quality health care.

Patient's Laboratory investigations requested includes;

1. Blood film for malaria parasites
2. Blood for full blood count
3. Blood for grouping and cross-matching

Treatment prescribed were;

1. IV Artesunate 96mg at 0hour, 12hours and 24hours respectively
2. Tablet Paracetamol 500mg tid x 5days
3. Syrup Zincofer 5mls daily x 14days
4. Intravenous Normal Saline 2 litres within 48 hours
5. Tablet Folic acid 5mg daily x 30days
6. One unit of blood (B^{+} packed cells)

The drugs were obtained from the pharmacy and the stat doses were served according to the prescription. I reassured him of good prognosis and competent healthcare. I introduced myself to patient and family as a final year student nurse of the Holy Family Nursing and Midwifery Training College, Berekum, who would like to take him and his family for my patient/family care study. Master N. R. and relative were informed that the care study is a requirement by the Nursing and Midwifery Council of Ghana in partial fulfilment towards the award of license to practice as a Registered General Nurse. I explained to Master N. R. and his relative the concept of the patient/family care study and assured them of privacy and confidentiality. It was added that a report will be written after the entire event. Master N. R. and relative agreed to my request and promised to offer me the necessary information and assistance. I mentioned to them that home visit is required to help know their home environment and how it contributed to patient's illness and how to prevent reoccurrence of the disease. I informed them that all the nursing staff present will help in caring of patient and not necessarily me alone. I then expressed my gratitude to them. Discharge planning was initiated by educating them on the preventive measures by sleeping under an intact mosquito net that's been treated with insecticide, use insect repellent on your skin and in sleeping environment and wear light, loose –fitting trousers rather than shorts and wear shirts with long sleeves with Master N. R. and family; thus, they will continue the care at home once he is well. Patient was weighed to assess patient's nutritional status of which he was found to be well nourished.

1.9 Patient's Concept of Illness

According to Merriam-Webster's Learners Dictionary (2016) patient's concept of illness can be defined as an abstract or generic idea generalized from one's illness or condition.

Master N. R. and family had slight knowledge about his condition, thus malaria and they did not attribute the illness to any spiritual cause. They expressed confidence of getting well soon because according to them, they believed that with God's healing through good nursing and medical treatment he would have a complete recovery and join his family back at home.

1.10 Literature Review on Severe Malaria

This section deals with documented information about the condition Master N. R. was diagnosed with, that is severe malaria. 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.

Basic Anatomy and Physiology of the Blood.

The cellular component of blood consists of three primary cell types erythrocytes (red blood cells), leukocytes (white blood cells), and thrombocytes (platelets). These cellular components of blood normally make up 40% to 45% of the blood volume. Because most blood cells have a short lifespan, the need for the body to replenish its supply of cells is continuous; this process is termed hematopoiesis.

Blood makes up approximately 7% to 10% of the normal body weight and amounts to 5 to 6 litres of volume. Circulating through the vascular system and serving as a link between body organs, blood carries oxygen absorbed from the lungs and nutrients absorbed from the gastrointestinal tract to the body cells for cellular metabolism. Blood also carries hormones, antibodies, and other substances to their sites of action or use. In addition, blood carries waste products produced by

cellular metabolism to the lungs, skin, liver, and kidneys, where they are transformed and eliminated from the body (Waugh & Grant, 2018).

Erythrocytes (Red Blood Cells)

The normal erythrocyte is a biconcave disk that resembles a soft ball compressed between two fingers. It has a diameter of about 8μm and is so flexible that it can pass easily through capillaries that may be as small as 2.8μm in diameter. The membrane of the red cell is very thin so that gases, such as oxygen and carbon dioxide, can easily diffuse across it; the disk shape provides a large surface area that facilitates the absorption and release of oxygen molecules.

Mature erythrocytes consist primarily of haemoglobin, which contains iron and makes up 95% of the cell mass. Mature erythrocytes have no nuclei, and they have many fewer metabolic enzymes than most other cells. The presence of a large amount of haemoglobin enables the red cell to perform its principal function, the transport of oxygen between the lungs and tissues. Occasionally the marrow releases slightly immature forms of erythrocytes, called reticulocytes, into the circulation. This occurs as a normal response to an increased demand for erythrocytes (as in bleeding) or in some disease states. The oxygen-carrying haemoglobin molecule is made up of four subunits, each containing a heme portion attached to a globin chain. Iron is present in the heme component of the molecule. An important property of heme is its ability to bind to oxygen loosely and reversibly. Oxygen readily binds to haemoglobin in the lungs and is carried as oxyhemoglobin in arterial blood. Oxyhemoglobin is a brighter red than haemoglobin that does not contain oxygen (reduced haemoglobin); thus, arterial blood is a brighter red than venous blood. The oxygen readily dissociates (detaches) from haemoglobin in the tissues, where the oxygen is needed for cellular metabolism. In venous blood, haemoglobin combines with hydrogen ions

produced by cellular metabolism and thus buffers excessive acid. Whole blood normally contains about 12-16g of haemoglobin per 100ml of blood (Waugh & Grant, 2018).

Definition of Malaria

Malaria is an acute disease of the blood caused by a parasite called plasmodium. The disease presents fever, chills and profuse sweating (World Health Organization, 2019).

Malaria is a febrile disease caused by parasite of the genus plasmodium and transmitted by the bite of an infective female Anopheles mosquito (Lam, 2018).

It can be described as uncomplicated or severe depending on the patient's immunity level, species of parasite and the presence of any other disease, such as malnutrition and anaemia.

Severe malaria is also known as Complicated Malaria. It occurs when the infections are complicated by serious organ failures or abnormalities in the patient's blood or metabolism. Delay in diagnosis and inappropriate treatment of uncomplicated malaria, especially in infants and children can lead to the rapid development of severe malaria.

Severe malaria mostly occurs in children under 5 years of age, pregnant women and non-immune individuals. Patients can deteriorate rapidly within a few hours or days leading to life-threatening situations. It is a common cause of avoidable death in Ghana. People at risk are children below five years, pregnant women, especially primigravidae (first pregnancies) and travelers from areas with little or no malaria, patients with sickle cell anemia and patients with HIV infection.

Also, some factors that influence the severity of malaria are Host Factors and clinical conditions:

- Age (Children under 5 years)
- Pregnancy

- HIV infection
- Sickle cell disease
- Parasite drug resistance:
- The degree of parasite resistance to anti-malaria drugs.

In all patients, clinical diagnosis of severe malaria should be made in a patient with fever (history of fever or axillary temp. ≥ 37.5° C).

In young children, a clinical diagnosis of severe malaria can also be made if there is fever (history of fever or axillary temp. ≥ 37.5° C) plus any general danger sign in young children are patient is likely to have experienced some of the typical symptoms of malaria - chills, rigors, headache, body aches, sweating, nausea/vomiting, loss of appetite, or abdominal pain.

Incidence:

Malaria is one of the most widely prevalent diseases in the world. It is a constant threat and kills about a billion humans in the world. In Ghana, it is the most common disease and accounts for about 40-42% of all out-patient attendants. It also accounts for about 7-9% of all certified death and ranks fifth among the commonest cause of death in children below four years. It affects all age group irrespective of the blood group. It is most severe in children and pregnant women. It is most prevalent in the tropics, sub-tropics and temperate zones (World Health Organization, 2019).

Causes and Risk Factors of Malaria are:

1. Poor drainage systems.

2. Poor refuse disposal.

3. Bushy environments which can serve as breeding place for mosquitoes.

4. Empty tins lying around can collect water and breed mosquitoes.

Pathophysiology of Malaria

According to Van Eij AM, Hill J, Larson DA, Webster J, Steketee RW and Eisele TP et la Malaria for Africa (2017), the pathophysiology of malaria has two aspects;

1. Asexual development in man

2. Sexual development in mosquito

Asexual Development in Man

The parasites are passed to the bloodstream through the bite of an infective female anopheles' mosquito in whose body the parasite has developed. They localized in the cells of the liver, grow and multiply. This is known as pre-erythrocytic phase. From there, they enter into the erythrocytic phase. During this phase, the parasites undergo further development such as trophozoids, schizoites and merozoites. The merozoites then attacks the red blood cells, terminates with rapture of cells and release of merozoites into circulation.

At about two weeks or at times long periods, mosquitoes bite from an infected person can take place and continue with the process.

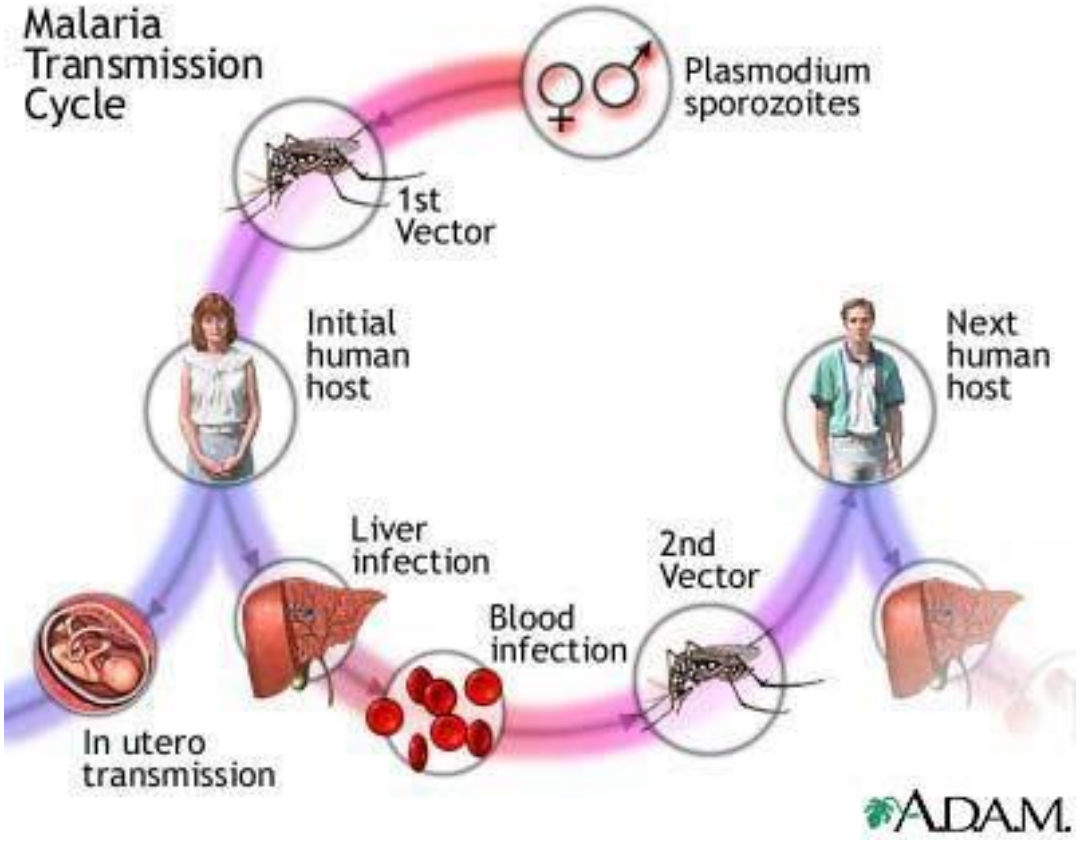
The paroxysms of chills and fever that occur in malaria are due to liberation of metabolic by-products of the parasites in the red blood cells. During the asexual development of the parasite in man, there is a period of gametogamy, that is, few merozoites develop into sexual forms of the parasite known as gametocytes. Thus, when an anopheles' mosquito ingests a human blood containing gametocytes, this marks the commencement of the sexual cycle of the plasmodium in the mosquito.

Sexual Development in Mosquito

Some of the parasites do not repeat the asexual cycle of development but produce male and female forms of gametocytes.

The sexual development is completed in the stomach of the female anopheles' mosquito. When a female mosquito ingests male and female parasites into an infected person, a rather complicated sexual cycle begins in the stomach.

The female parasite or gametocyte is fertilized by the male gametocyte. The fertilized parasites move into the stomach wall and become encysted (oocyst) and divides into many small spindles-shaped sporozoites or parasites. The cyst raptures and the parasites are carried to the salivary gland of the mosquito which is so constructed in such a way that the parasites are injected into the salivary glands which the mosquito bites.



Types of Plasmodium Parasite

According to Van Eij AM, et al. Malaria for Africa (2013), there are five (5) main species of plasmodium parasites.

1. Plasmodium ovale
2. Plasmodium vivax
3. Plasmodium malariae
4. Plasmodium falciparum
5. Plasmodium knowlesi

Mode of Transmission

1. Vector transmission; malaria is transmitted by the bite of certain species of infective mosquitoes. A single infective vector during its life time may infect several people. The mosquito is not infective unless sporozoites are present in its salivary gland.

2. Direct transmission; malaria may be introduced accidentally by hypodermic, intramuscular and intravenous infection of blood or plasma example blood transfusion. Blood transfusion poses a problem because the parasites keep their infective activity during at least fourteen days in the blood stored at -4^{o} C.

3. Congenital malaria; congenital infection of the new-born from an infected mother may also occur but this is very rare.

Types of Malaria

Malaria occurs in four characterized types, each caused by its own distinct species of the plasmodium.

1. Tertian malaria: This is characterized by paroxysms of chills and fever every 48 hours and caused by plasmodium vivax.

2. Quartian malaria: Is characterized by paroxysms of chills and fever every 72 hours and is common. It is caused by plasmodium malariae.

3. Malignant malaria: Here there are irregular paroxysms of chills; there is diarrhoea, vomiting and delirium. Patient may become comatose and die. This is the most severe form of malaria and is common in Tropical Africa, example Ghana. It's caused by plasmodium falciparum.

4. Benign tertian malaria: This is usually mild and onset is preceded with chills and fever which is intermittent in nature. It is caused by plasmodium ovale.

Clinical Features of Severe Malaria

According to World Health Organization (2019), the following signs and symptoms may be exhibited by the patient

1. Fever (history of fever or axillary temp. ≥ 37.5° C) plus **any "sign of severe malaria"** from the list below.

2. Altered consciousness (change of behavior, confusion, delirium, coma persisting for over 30min after convulsion).

3. Signs of hypoglycemia (sweating, pupil dilation, abnormal breathing, coldness, blood sugar-<40mg/dl. or 2.2mmol/L)

4. Signs of renal failure (passing very little urine)

5. Repeated generalised convulsions (fits) – 2 or more in 24 hours.

6. Signs of haemoglobinuria (dark or cola-colored urine).

7. Repeated profuse vomiting.

8. Coma

9. Extreme pallor (severe anaemia; haematocrit <15% or Hb <5g/dl).

10. Circulatory collapse or shock (cold limbs, weak rapid pulse).

11. Inability to take fluids

12. Hyperpyrexia (axillary temperature ≥38.5°C)

13. Hyperparasitemia ("3+" more; or 250,000 parasites per dl of blood")

Diagnostic Investigations

According to Lam (2018), the following diagnostic investigations are done for cases of malaria;

1. By the clinical manifestations.

2. Blood film for malaria parasite (MP's) – it reveals the parasite load (plasmodium) in the blood.

3. Full blood count (FBC) - it is carried out to estimate the constituents of blood (RBC, WBC, HB etc.) and their deviations from the normal ranges.

4. Rapid diagnostic test (RDT) if microscopy is unavailable.

Medical management

Drug treatment and dosage depend on the age and weight of patient. The goal of the treatment is to destroy the blood trophozoites and schizoites of plasmodium that cause the condition.

1. Fluid management: Intravenous fluids such as normal saline, ringers' lactate and others are useful. Patient with severe malaria are often relatively rehydrated due to combination of decrease intake of fluid and increase in micturition.5% dextrose, 10% dextrose and dextrose saline are given to provide energy and expand blood volume.

2. Anti-malaria treatment: Example is Artesunate amodiaquine, quinine, Arthemether Lumifanthrine, etc. Quinine remains the parenteral drug of choice in Africa.

Loading dose of 20mg per kg in normal saline run in over 4 hours and maintenance dose of quinine, 10mg per kg of body weight should be given at interval of either 8 or 12 hours. Quinine is cardiotoxic and must not be given in bolus. Artesunate amodiaquine is the drug of choice for treatment of acute malaria.

3. If treatment failure is confirmed, treat with quinine (120mg tds x 2days).

4. Analgesics and Antipyretics should be given for pain and fever example; paracetamol, ibuprofen, aspirin, codeine, etc.

5. Management of anaemia: many people develop anaemia from severe malaria. Many people with haemoglobin concentration between 4 and 6g/dL, without signs of severe malaria do well with oral anti malaria and haematinics. In severe cases blood transfusion is recommended.

6. Management of Convulsion: Convulsion maybe present in children with malaria. Diazepam is given in dose of 0.3mg per kg (up to a maximum of 10mg in both older children and adults). Paraldehyde is an anticonvulsant with less risk of respiratory distress, but its use has declines and not available in many settings. Others include; phenobarbitone, phenytoin, etc.

7. The use of antibiotics: Pathological bacteria are isolated in significant minority of patient with severe malaria. A reasonable compromise is to target antibiotic to those at high risk.

8. Oxygen therapy: This is given to counter tissue anoxia in patients experiencing breathlessness.

9. Haematinics: Are given to correct anaemia.

Nursing Management

According to Van Eij AM, et al. Malaria for Africa (2013), nursing management of malaria include:

Psychological care/Emotional support

This is done to relax them and also to win their confidence and co-operation in caring for the patient.

1. Patient and relatives are reassured that they are in the hands of competent health personnel who are willing and ready to help him to recover.

2. Encourage relatives to visit patient to promote self-esteem and integration.

3. Encourage patient's mother and other relatives to ask questions and answer them tactfully.

Rest and Sleep

This is ensured to conserve energy, promote relaxation and healing. Rest and sleep could be achieved by:

1. Making bed free of creases

2. Giving warm bath to relax the muscles of the patient

3. Providing good ventilation by opening nearby windows

4. Minimizing the noise on the ward by reducing the volume of the radio/television sets and restricting visitors.

Position

Ensure comfortable position which is not contraindicated to patient's condition. This is done to ensure his safety, and to relieve pain.

Observation

1. Vital signs, that is temperature, pulse, respiration and blood pressure are monitored and recorded on the nurses' note depending on patient's condition to know if patient's condition is getting better or worsening
2. Infusion site is observed for patency and fluid intake and output chart is monitored. Possible complication like respiratory distress is observed. Moreover, the mental orientation of the patient to time, place and persons are observed as well as desired and a side effect of the drugs patient is given.
3. In patients with fever, if there are chills, more clothing is added to keep him warm, nearby windows are closed and fans are put off.
4. In hot stage, extra blankets/clothing are removed, patient is tepid sponged to reduce temperature. Nearby windows are opened and cold nourishing drinks can be served. Vital signs are checked and compared with baseline vital signs.

Personal Hygiene

1. Good personal hygiene is ensured from hair to toe by washing patient's hair with shampoo and water, and cutting of fingernails and toenails to prevent harboring of dirt and microbes.

2. Patient's mouth is cared for with toothbrush at least twice daily to prevent infection and stimulate appetite.
3. Patient could be given bed bath or assisted bed bath to remove dirt and microbes from the skin, to improve circulation and also patient's comfort. At least, the bath should be twice daily and pressure areas like the occiput, sacrum and shoulder are treated by applying soap into the palm and massaging in a circular motion to improve circulation.
4. Patient's bed linens are changed frequently when soiled or dirty to make patient comfortable.

Nutrition

1. Patient is given a well-balanced diet, vitamins to boost immunity, carbohydrate for energy and protein to build worn-out tissues.
2. Food should be served in bits and attractive manner.
3. Patient should be involved in planning of food menu.
4. Patient is also encouraged to drink a lot water to keep the body hydrated.

Exercise

1. Patient is encouraged to do active and passive exercises to improve circulation, prevent muscle wasting and relieve boredom.
2. Exercises also help peristalsis for digestion and help remove toxins from the body.

Elimination

1. Bowel and bladder elimination, patient is served with bedpan and urinal on demand or bedpan round.

2. Fluid and roughage intake is encouraged depending on patient's condition. If elimination fails, a nearby tap is turned on to psyche-up the patient to urinate.
3. Warm compresses can be applied on the lower abdomen to relax the muscle and aid elimination.
4. If all these nursing measures fail, catheter is finally passed to empty the bladder.

Education

1. Patient with malaria should be advised to complete the prescribed dosages even if the signs and symptoms of the condition subside. People infected with plasmodium, especially that of ovale and vivax type may harbor the parasite (plasmodium) in their liver cells (hepatocytes) after treatment and the risk of frequent remissions are possible.
2. They should also be educated on the predisposing causes such as stagnant chocked gutters.
3. The signs and symptoms such as high temperature, nausea and vomiting should be made known to people to enable them seek for early treatment.
4. All patients should be told to return to the hospital for blood examination after 4-5days completion of treatment to assess whether the parasite has been completely eliminated from the body.
5. People should be thought on the use of personal protection measures like the use of insecticide treated nets (ITNs) and mosquito repellents.
6. Educate patient and relative to change or retreat the mosquito net after washing it for 20 times or change it when there is a tear.

Complications of malaria

According to Van Eij AM, et al. Malaria for Africa (2013), client with malaria may suffer the following complications;

1. Cerebral malaria- this occurs when parasite-filled blood cells (plasmodium parasite) block small vessels in the brain and this mostly occurs when malaria is not reated earlier.
2. Coma- this occurs after cerebral malaria has been developed.
3. Convulsion- the presence of the parasite-filled blood cells as well as untreated fever may lead to convulsions.
4. Acute renal failure- this occurs as a result of mechanical obstruction of infected erythrocytes in the afferent arterioles leading to necrosis of the kidney tissues.
5. Hepatic failure (hepatic dysfunction) - mechanical obstruction of blood vessels with infected erythrocytes causes multiple organ failure including hepatic failure.
6. Shock (circulatory collapse) - obstruction of blood vessels with infected erythrocytes causes failure of blood flow to the vital organs of the body (circulatory collapse).
7. Severe anaemia- malaria damages many red blood cells, which causes severe anaemia.
8. Bleeding abnormalities- there is low platelet count in severe malaria that leads to the bleeding problems.

These complications mostly come about when early treatment is not given.

Prevention of Malaria

Primary Level

1. Ensure good environmental sanitation, example:
2. Weeding the environment

3. Draining all stagnant waters
4. Desilting of gutters for proper drainage
5. Proper means for storing and disposing refuse
6. Regular spraying of breeding places of mosquitoes
7. Use of mosquito repellents and coils
8. Sleeping under mosquito treated nets
9. Use of mosquito-proof doors and windows
10. Encourage chemoprophylaxis, example pyrimethamine.

Secondary Level

1. Early detection of malaria is by screening for those who have malaria and tracing their contacts.
2. Keeping surveillance
3. Treat those who have malaria.

Tertiary Level

Rehabilitation, example getting adults back to work, children being taught by the hospital school teachers.

1.11 Validation of Data

Data validation is a method of checking for the accuracy and quality of your data. It also includes the process of ensuring that data entered fall within the accepted boundaries (Alley, 2019).

All the data collected from client was cross checked in the literature review for confirmation. The patient's medical history was confirmed by some of the signs and symptoms he manifested. The information obtained regarding patient's home environment was verified during home visits.

The clinical features presented and diagnostic investigations conducted on him confirmed that he was suffering from severe malaria. When the data collected from were compared with the literature review, it was vivid that Master N.R. was suffering from severe malaria.

CHAPTER TWO

ANALYSIS OF DATA

2.0 Introduction

Analysis of data is the second phase of the nursing process, which involves careful comparison of the patient's problems or the information gathered from patient and relatives with standards and then putting these problems in order of priorities to plan for the care of the patient and family (Delaune & Ladner, 2018).

This section covers the under listed areas;

1. Comparison of data with standards
2. Patient and family's strength
3. Patient's health problems and
4. Nursing diagnoses

2.1 Comparison of Data with Standards

This is the process of comparing the information collected from patient/family and the care given, with standards set in the textbooks. This includes diagnostic investigations, causes, signs and symptoms, treatments and complications found in the literature review.

A. Diagnostic Investigation/Test

Diagnosis is the determination of the nature of a disease (Taylor, 2019). Investigation refers to procedures performed to establish a diagnosis, to monitor a person's health, disease or the effectiveness of treatment (Taylor, 2019). The following are list of investigations which were carried out on Master N.R. during his period of hospitalization;

1. Blood film for malaria parasites
2. Blood for full blood count
3. Blood for grouping and cross-matching

Table 1: Comparison of Test Done on Master N. R. to Literature

Diagnostic Test outlined in literature review	**Test Carried out on Patient**
History and clinical manifestations	History of client and clinical manifestations were taken
Blood film for malaria parasites	Blood film for malaria parasite was carried out on my patient
Full blood count	Full blood count was carried out with my client
Not present in literature review	Blood for grouping and cross-matching

All the above tests requested on Master N. R. were found in the literature review with the exception of blood for grouping and cross-matching, the blood for grouping and cross-matching was ordered by the physician know the blood type of patient in other to enable effective blood transfusion if the need arises.

Table 2: Results of Diagnostic Investigations Carried Out on Master N.R.

Date	Specimen	Investigation	Results	Normal Value	Interpretation	Remarks/ Treatment
31/01/2022	Blood	Blood film for malaria parasite	3 pluses of plasmodium falciparum present	No malaria parasite should be present.	Patient has malaria parasite in his blood.	IV Artesunate 96mg at 0hour, 12hours and 24hours respectively. Tablet Arthemether/ Lumifanthrine – 60/ 360mg bd x 72hours.
31/01/2022	Blood	Grouping and cross matching	Blood group B positive	A (+ or -), AB (+ or -), B (+ or -) and O (+ or -)	Client belonged to blood group B with Rhesus Positive, (B^+).	One unit of blood (B^+ packed cells) was transfused successfully without any transfusion reaction.

Table 2: Results of Diagnostic Investigations Carried Out on Master N.R. cont.

Date	Specimen	Investigation	Results	Normal Value	Interpretation	Remarks/ Treatment
31/01/2022	Blood	**FULL BLOOD COUNT** Haemoglobin level estimation	5.7g/dL	Female:11-14g/dL Male: 12-16g/dL Children: 13-18g/dL	Patient was severely anaemic	One unit of blood (B^+ packed cells) was given.
		White blood cell count. Red blood cells count Neutrophils count	7.67 x 10^3/µL 3.41 x 10^6/µL 6.40 x 10^3/µL	(4-12) x 10^3/µL (2.50-5.50) x 10^6/µL (1.00-7.00) x 10^3/µL	White blood cell, Red blood cell and Neutrophil count all within normal ranges	No treatment was given.
31/01/2022	Blood	Haemoglobin level estimation (Post Transfusion)	11.8g/dL	Female:11-14g/dL Male: 12-16g/dL Children: 13-18g/dL	Patient was mildly anaemic	Syrup Zincofer 5mls daily x 14days

B. Causes of Client's Condition

With reference to the literature review, Master N.R.'s condition was due to the presence of malaria parasites in the blood. The malaria parasites were introduced into the blood through the bite of an infective female anopheles' mosquito which injected plasmodium parasites into the blood.

Clinical Features/ Signs and Symptoms

Table 3: Clinical Features of Master N. R. Compared with those in the Literature Review

Clinical Features in Literature Review	**Clinical Features Exhibited by Client**
Fever	Client had high body temperature
Altered consciousness	Client was conscious
Hypoglycaemia	Client experienced Hypoglycaemia
Signs of renal failure	Client had no renal failure
Repeated generalised convulsions (fits)	Client had no convulsions
Signs of haemoglobinuria	Client experienced colored urine
Repeated profuse vomiting	Client experienced vomiting
Coma	Client had no coma
Extreme Pallor	Client was anaemic
Shock	Client had a weak rapid pulse

Table 3: Clinical Features of Master N. R. Compared with those in the Literature Review cont.

Clinical Features in Literature Review	Clinical Features Exhibited by Client
Inability to take fluids	Client was able to take fluids
Hyperpyrexia	Client had hyperpyraxia
Hyperparasitemia	Client had hyperparasitemia

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

C. Specific Medical Treatment Given to Patient

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

The following were used in the treatment of the condition:

1. IV Artesunate 96mg at 0hour, 12hours and 24hours respectively
2. Tablet Paracetamol 500mg tid x 5days
3. Syrup Zincofer 5mls daily x 14days
4. Intravenous Normal Saline 2 litres within 48 hours
5. Tablet Folic acid 5mg daily x 30days
6. One unit of blood (B^+ packed cells)
7. Tablet Arthemether/ Lumifanthrine – 60/ 360mg bd x 72hours

Table 4: Treatment Given to Client as Compared with Literature review

Treatment outlined in the literature review	Treatment Given to my patient
1. Anti-malaria drugs (i) Artesunate-Amodiaquine (ii) Quinine (iii) Arthemether Lumifanthrine	**1. Anti-malaria drugs administered** (i) IV Artesunate (ii) Quinine was not given (iii) Suspension Arthemether/ Lumifanthrine
2. Antipyretics and analgesics (i) Paracetamol (ii) Aspirin (iii) Codeine (ii) Ibuprofen	**2. Antipyretics and Analgesics administered** (i) Tablet Paracetamol (ii) Aspirin was not given (iii) Codeine was not given (ii) Ibuprofen was not given
3. Haematinics (i) Haematinics	**3. Haematinics administered** (i) Syrup Zincofer 5mls daily x 30days was given
4. Anticonvulsants (i) Diazepam (ii) Phenobarbitone (iii) Phenytoin	**4. Anticonvulsants administered** (i) Diazepam was not given (ii) Phenobarbitone was not given (iii) Phenytoin was not given to patient
5. The use of Antibiotics	Antibiotics was not given
6. Crystalloids IV fluids	**6. Crystalloids administered** Intravenous Normal Saline 2 litres was given
7. Oxygen therapy	Oxygen therapy was not given

From the above table, comparison of drugs in the literature review with drugs given to patient indicates that Master N.R. received the right treatment which contributed to his rapid recovery except oxygen therapy and other drugs not given.

Table 5: Pharmacology of Drugs Administered to Patient

Date	Drug	Dosage/ Route of Administration (Literature)	Dosage/ Route of Administration Given to Patient	Classification	Desired Effect	Actual Action Observed	Side Effects/ Remedies
31/01/2022	Artesunate	**Dosage** 3mg/kg at 0,12 and 24 hours respectively same for adult and children **Route** Intravenous	**Dosage** 96mg at 0,12 and 24 hours respectively **Route** Intravenous	Artemisinin-based Combination Therapy (ACTs) (Antimalaria)	It metabolize to the active DHA, the endoperoxide bridge of DHA reacts with heme, generating free radicals which inhibit protein and nucleic acid synthesis of the Plasmodium parasite during all erythrocytic stage	Patient was relieved of the signs and symptoms like fever	Dizziness, vomiting, abdominal pain, rash, visual disturbance Patient experienced no side effects
31/01/2022	Paracetamol	**Dosage** **Adult**: 0.5–1 g every 4–6 hours; maximum 4 g per day **Children** 3–5 months: 60 mg every 4–6 hours; maximum 4 doses per day **Route**: Orally	**Dosage** 500mg tid x 5days **Route** Oral	Antipyretic and analgesic	To reduce fever and reduce pain by the inhibition of prostaglandin synthesis.	Client was relieved of fever	Nausea, vomiting, drowsiness and abdominal pain Patient experienced no side effects

Table 5: Pharmacology of Drugs Administered to Patient cont'd.

Date	**Drug**	**Dosage/ Route of Administration (Literature)**	**Dosage/ Route of Administration Given to Patient**	**Classification**	**Desired Effect**	**Actual Action Observed**	**Side Effects/ Remedies**
31/01/2022	Syrup Zincofer	**Dosage** 5mls twice daily **Adult:** 15-30mls **Child:** 5-10mls **Route** Oral	**Dosage** 5mls daily x 14 days **Route** Oral	Multivitamin (Haematinics)	To increase appetite and haemoglobin level.	Patient appetite for food increased as condition improve and haemoglobin was within the normal range	Diarrhoea, black stools, epigastric pain, constipation Patient experienced no side effects
31/01/2022	Tablet Folic acid	**Dosage:** 1mg – 5mg daily Adult: 500mg -1g Child: 150-250mg **Route:** Orally	**Dosage:** 5mg daily x 30days **Route:** Orally	Vitamin (Water Soluble))	To stimulate the production of red blood cell and maintenance of normal erythropoietin	Patient's haemoglobin level was increased gradually	Headache, dizziness, abdominal pain, and nausea Patient experienced no side effects

Table 5: Pharmacology of Drugs Administered to Patient cont'd.

Date	Drug	Dosage/ Route of Administration (Literature)	Dosage/ Route of Administration Given to Patient	Classification	Desired Effect	Actual Action Observed	Side Effects/ Remedies
31/01/2022	Normal saline	**Dosage:** Depends on patient's fluid and electrolyte level and age as well as by doctor's prescription. **Route:** IV	**Dosage:** 2 litres within 48hours **Route:** Intravenously	Isotonic solution of sodium chloride (Crystalloids)	To correct fluid and electrolyte imbalance	Patient's body fluids and electrolytes were maintained.	Oedema, over hydration, hypocalcaemia. None of these side effects were observed.

Table 5: Pharmacology of Drugs Administered to Patient cont'd.

Date	Drug	Dosage/ Route of Administration (Literature)	Dosage/ Route of Administration Given to Patient	Classification	Desired Effect	Actual Action Observed	Side Effects/ Remedies
02/02/2022	Tablet Arthemether/ Lumifanthrine	**Dosage** **Adult** (body-weight 35 kg and above): 24 tablets, over 3 days **Children** 5-<15kg: 6 tablets over 3 days **Route** Oral	**Dosage** 60/ 360mg bd x 72hours **Route** Oral	Artemisinin-based Combination Therapy (ACTs) (Antimalaria)	It inhibit nucleic acid and protein synthesis of plasmodium falciparum during the erythrocytic stage	Patient was relieved of the signs and symptoms like fever	Dizziness, drowsiness, anorexia Patient experienced no side effects

Table 6: Blood Transfusion Table

Date	**Time Set-Up**	**Amount of Blood Transfused**	**Vital Signs (Pre-Transfusion)**	**Time Completed**	**Vital Signs (Post-Transfusion)**	**Remarks**
31/01/2022	5:45pm	500mls of B+ blood	Temp 37.4^{0}C Pulse 108bpm Resp. 24cpm	8:05pm	Temp 36.9^{0}C Pulse 106bpm Resp. 22cpm	No adverse reaction was observed on client.

D. Complications

According to Taylor (2019), complication is an accident of second disease process arising during the course of or following the primary condition which may be fatal.

Table 7: Comparison of complications in literature with what patient developed

Complications in Literature Review	**Complications developed by patient**
Cerebral malaria	Not developed by patient
Coma	Not developed by patient
Convulsion	Not developed by patient
Acute Renal Failure	Not developed by patient
Hepatic Failure	Not developed by patient
Shock	Not developed by patient
Severe Anaemia	Developed by patient

With reference to the literature review, the complications of malaria include; anaemia, acute renal failure, splenomegaly, convulsion, cerebral malaria, hepatitis, jaundice.

Patient developed anaemia (with Hb of 6.5g/dL) which was managed with haemotransfusion and haematinics (syrup Zincofer and Tablet Folic acid).

2.2 Patient / Family's Strength

Strength refers to the physical power and energy that makes an individual determined in dealing with difficult or unpleasant situations (Longman, 2019). The following strengths were observed in Master N. R. and family during their period of hospitalization.

1. Patient verbalizes that his body feels warm to touch

2. Patient could express the intensity of the pain.
3. Patient could verbalize the number of times he vomitted.
4. Patient could have uninterrupted sleep for three hours at night.
5. Patient could perform passive exercise.
6. Patient could name the causative organism and mention few signs and symptoms about Malaria.

2.3 Patient's Health Problems

Problem is defined as a situation that causes difficulties or a disorder with your health or with part of your body (Longman, 2019). From the data collected during assessment, the following health problems were observed in Master N.R. and family during their period of hospitalization.

1. Patient had fever (38.2^{o}C) (31/01/2022).
2. Patient complained of severe headache (31/01/2022).
3. Patient experienced vomiting (31/01/2022).
4. Patient could not sleep continuously for four hours (01/02/2022).
5. Patient had fatigue/general weakness (01/02/2022).
6. Patient had less knowledge on Malaria (01/02/2022).

2.4 Nursing Diagnosis

North American Nursing Diagnosis Association (NANDA) defined nursing diagnosis as a clinical judgement about individual, family, or community responses to actual or potential health problems/life processes (Gale Encyclopedia of Nursing and Allied Health, 2019). Nursing diagnoses provide the basis for selection of nursing interventions to achieve outcomes for which the nurse is accountable.

1. Hyperthermia (38.9^{o}C) related to invasion of plasmodium parasite (31/01/2022).
2. Headache related to inflammatory response to presence of plasmodium parasite in the blood (31/01/2022).
3. Risk for deficient fluid and electrolyte volume related to vomitting (31/01/2022).
4. Insomnia related to change of environment and headache (01/02/2022).
5. Self care deficit related to fatigue (01/02/2022).
6. Deficient knowledge related to inadequate information about the disease process, its treatment, and prevention (01/02/2022).

CHAPTER THREE

PLANNING FOR PATIENT/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 (Taylor, 2019). Planning is the third step of the nursing process which includes the formulation of guidelines that establish the proposed course of nursing action in the resolution of nursing diagnoses and the development of the client's plan of care (Delaune & Ladner, 2018).

The patient's care plan is written based on the data collected which is translated into nursing diagnosis. This will help meet the patient's needs, thereby eliminating or minimizing patient problems.

3.1 Objective/ Outcome Criteria

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 body temperature would fall within normal range (36.2^oC – 37.2^oC) in 24 hours as evidenced by;
    a. Nurse recording a temperature of 36.2^oC - 37.2^oC
    b. Relative observing that patient's body was not warm to touch.
2. Patient headache will resolve within twenty-four hours as evidenced by:
    a. The patient verbalizing relief of pain.

b. The nurse observing patient has relaxed facial expression and increased participation in activities.

3. Patient's would maintain his normal fluid and electrolyte status during period of hospitalization as evidenced by:
    a. Nurses assessing patient been well hydrated.
    b. Patient verbalizing that the vomiting have subsided.
4. Patient would regain normal sleep pattern within (6-8 hours in the night and 3 hours during the day) within 48 hours as evidence by;
    a. Patient sleeping at least 8 hours during night and 3 hours in the day time.
    b. Patient verbalizing that he slept soundly.
5. Patient will be relieve of fatigue within 48 hours as evidence by;
    a. Nurse observing that patient can perform minor activities.
    b. Patient verbalizing that he can perform activities of daily living.
6. Patient would have adequate information about disease condition within 24 hours as evidence by;
    a. Patient verbalising basic understanding about the disease process, its treatment, and prognosis.
    b. Patient giving feedback information on knowledge acquired to the nurse.

Table 8: below shows the Nursing Care Plan for Master N.R

Date and Time	Nursing Diagnosis	Objective/ Outcome Criteria	Nursing Orders	Nursing Intervention	Date and Time	Evaluation	Sign
31/01/22 at 3:20pm	Hyperthermia (38.2^{o}C) related to invasion of plasmodium parasite	Patient's body temperature would fall within normal range (36.2^{o}C-37.2^{o}C) in 24 hours as evidenced by; **a.** Nurse recording a temperature of 36.2^{o}C - 37.2^{o}C	**1.** Check client's body temperature. **2.** Adjust and monitor environmental factors like room temperature. **3.** Hot foot bath patient every 30minutes while monitoring his temperature. **4.** Serve patient with cold drinks.	**1.** Client's temperature was checked and read as 38.9^{o}C. **2.** Nearby windows was opened to ensure adequate room ventilation. **3.** Patient was hot foot bathed every 30minutes. **4.** Patient was served cold water to reduce body temperature	01/02/22 at 3:20pm	Goal fully met as nurse recorded a temperature of 36.5^{o}C and relative verblized that patient's body was not warm to touch	**A.J.**

Date and Time	Nursing Diagnosis	Objective/ Outcome Criteria	Nursing Orders	Nursing Intervention	Date and Time	Evaluation	Sign
		b. Relative observing that patient's body was not warm to touch.	**5.** Start intravenous solution as indicated to replenish fluid losses during shivering or chills. **6.** Administer prescribed anti-pyretic.	**5.** Intravenous Normal Saline was started as indicated to replenish fluid losses to regulate body temperature. **6.** Tablet paracetamol 500mg was administered.			

Table 8: Nursing Care Plan for Master N.R. cont.

Date and Time	Nursing Diagnosis	Objective/ Outcome Criteria	Nursing Orders	Nursing Intervention	Date and Time	Evaluation	Sign
31/01/22 at 3:30pm	Headache related to inflammatory response to presence of plasmodium parasite in the blood	Patient headache will subside within 24 hours as evidenced by: **a.** The patient verbalizing relief of pain. b. The nurse observing patient has relaxed facial expression and increased participation in activities.	**1.** Reassure the patient and family. **2.** Assess verbal complaints of discomfort. **3.** Assess patient level and intensity of pain.	**1.** Patient and family was reassured that measures were been put in place to relieve pain and also to improve his health. **2.** Patient's verbal complaints of discomfort were assessed by asking him. **3.** Pain assessment was done using the numerical rating scale and Master N.R. chose 6 to note his pain intensity.	01/02/22 at 3:30pm	Goal was fully met as patient verbalized that he does not feel any pain and nurse observed patient has a relaxed facial expression and increased participation in activity.	**A.J.**

Table 8: Nursing Care Plan for Master N.R. cont.

Date and Time	Nursing Diagnosis	Objective/ Outcome Criteria	Nursing Orders	Nursing Intervention	Date and Time	Evaluation	Sign
			4. Ensure noise reduction to encourage rest. **5.** Monitor her vital signs regularly. **6.** Administer prescribed analgesics.	**4.** All forms of noise were reduced by restricting visitors, reducing volume of radio and television. **5.** Patient's vital signs were monitored regularly to know if there is increased in patients BP and Pulse **6.** Prescribed analgesics such as Tablet paracetamol 500mg was administered.			

Table 8: Nursing Care Plan for Master N.R. cont.

Date and Time	Nursing Diagnosis	Objective/ Outcome Criteria	Nursing Orders	Nursing Intervention	Date and Time	Evaluation	Sign
31/01/22 at 4:00pm	Risk for deficient fluid and electrolyte volume related to vomitting	Patient's would maintain his normal fluid and electrolyte status during hospitalization as evidenced by: **a.** Nurses assessing patient been well hydrated.	**1.** Monitor patient's weight daily and consistently with same scale. **2.** Monitor patient's skin turgor and mucous membrane for signs of dehydration. **3.** Monitor and record vital signs. **4.** Administer parenteral fluids as prescribed.	**1.** Patient's weight was monitored every morning with the same scale to know the patients weight. **2.** Patient's skin turgor and mucous membrane were assessed to assess for signs of dehydration by pinching the patient. **3.** Vitals signs were monitored and recorded to know changes in BP. **4.** 2 litres of Intravenous Normal Saline were administered	04/02/22 at 8:50am	Goal fully met as nurse assessing patient been well hydrated and patient verbalizing that vomiting have subsided	**A.J.**

Table 8: Nursing Care Plan for Master N.R. cont.

Date and Time	Nursing Diagnosis	Objective/Outcome Criteria	Nursing Orders	Nursing Intervention	Date and Time	Evaluation	Sign
		b. Patient verbalizing that the vomiting have subsided.	**5.** Monitor and maintain patient's fluid rate. **6.** Provide small amount of clear liquids when vomiting stops to support hydration. **7.** Maintain accurate intake and output records.	**5.** Patient's fluid rate was monitored and maintained to prevent cardiac overload. **6.** Small amount of water was given to support hydration. **7.** Intake and output was checked and recorded to help know amount of fluid to administer.			

Table 8: Nursing Care Plan for Master N.R. cont.

Date and Time	Nursing Diagnosis	Objective/Outcome Criteria	Nursing Orders	Nursing Intervention	Date and Time	Evaluation	Sign
01/02/22 at 11:00am	Insomnia related to change of environment and headache.	Patient would regain normal sleep pattern within (6-8 hours in the night and 3 hours during the day) within 48 hours as evidence by ; **a.** Patient sleeping at least 8 hours during night and 3 hours in the day time.	**1.** Make a comfortable bed for patient. **2.** Dim lights in patient's room. **3.** Give warm bath to client.	**1.** Patient was nursed in a bed free from creases and crumps to promote comfort and enhance sleeping **2.** Lights on the ward were dimmed in the evening to enable patient sleep. **3.** Client was given a warm water to bath to relax him and induce sleep.	03/02/22 at 11:00am	Goal fully met as patient slept at least 8hours during night and 3 hours in the day time and also patient verbalized that he slept soundly during his hours of sleep.	**A.J.**

Table 8: Nursing Care Plan for Master N.R. cont.

Date and Time	Nursing Diagnosis	Objective/Outcome Criteria	Nursing Orders	Nursing Intervention	Date and Time	Evaluation	Sign
		b. Patient verbalizing that he slept soundly.	**4.** Ensure a noise-free environment. **5.** Organize all nursing activities at once to avoid interrupting sleep if possible. **6.** Provide good ventilation.	**4.** Noise was avoided by restricting visitors and keeping volume of nearby television set low. **5.** All nursing activities were organized to avoid interruption of patient sleep. **6.** Nearby windows were opened during the day time to provide good ventilation.			

Table 8: Nursing Care Plan for Master N.R. cont.

Date and Time	Nursing Diagnosis	Objective/Outcome Criteria	Nursing Orders	Nursing Intervention	Date and Time	Evaluation	Sign
01/02/22 at 11:40am	Self care deficit related to fatigue	Patient will be relieve of fatigue within 48 hours as evidence by; **a.** Nurse observing that patient can perform minor activities.	**1.** Reassure patient and family of competent care. **2.** Ensure adequate rest and sleep. **3.** Check patient's hemoglobin level.	**1.** Patient and family were reassured of competent healthcare to help patient cooperate during nursing care. **2.** Patient's bed was free from creases and cramps and given warm bath to ensure rest and sleep. **3.** Patient's hemoglobin level was checked to know changes in its level.	03/02/22 at 11:40am	Goal fully met as nurse observed that patient can perform minor activities and patient verbalized that he can perform activities of daily living.	**A.J.**

Table 8: Nursing Care Plan for Master N.R. cont.

Date and Time	Nursing Diagnosis	Objective/Outcome Criteria	Nursing Orders	Nursing Intervention	Date and Time	Evaluation	Sign
		b. Patient verbalizing that he can perform activities of daily living.	**4.** Serve a healthy diet emphasizing on iron containing diet to boost immunity and to give nutrients. **5.** Engage patient in both active and passive exercises. **6.** Serve prescribed medications.	**4.** Patient was served with tomato stew with rice and fish to improve energy. **5.** Patient was engaged in both active and passive exercises by assisting him to move his hands and legs in bed to help relieve fatigue. **6.** Syrup Zincofer 5mls was served.			

Table 8: Nursing Care Plan for Master N.R. cont.

Date and Time	Nursing Diagnosis	Objective/Outcome Criteria	Nursing Orders	Nursing Intervention	Date and Time	Evaluation	Sign
01/02/22 at 1:00pm	Deficient knowledge related to inadequate information about the disease process, its treatment, and prevention	Patient would have adequate information about disease condition within 24 hours as evidence by; **a.** Patient verbalising basic understanding about the disease process, its treatment, and prevention.	**1.** Assess patient's knowledge on condition. **2.** Provide a quiet atmosphere for learning without interruption. **3.** Allow Patient to ask questions for clarification.	**1.** Patient's knowledge on malaria was assessed by asking questions on signs and symptoms of malaria. **2.** Nearby TV set was turned off to provide a quiet atmosphere for learning. **3.** Patient was allowed to ask questions for clarification.	02/02/22 at 1:00pm	Goal fully met as patient verbalised basic understanding about the disease process, its treatment, and prognosis and patient giving feedback information on knowledge acquired to the nurse.	**A.J.**

Table 8: Nursing Care Plan for Master N.R. cont.

Date and Time	Nursing Diagnosis	Objective/Outcome Criteria	Nursing Orders	Nursing Intervention	Date and Time	Evaluation	Sign
		b. Patient giving feedback information on knowledge acquired to the nurse.	**4.** Answer questions in simple understandable language without using professional jargons. **5.** Educate patient on medication and its side effects. **6.** Ask patient to summarize what he heard.	**4.** Master N.R.'s questions were answered in simple understandable language (Twi) without using professional jargons. **5.** Patient was educated on medication and its side effects. **6.** Patient was asked to summarize what he heard to ascertain if learning have taken place			

CHAPTER FOUR

IMPLEMENTATION OF CLIENT/FAMILY CARE PLAN

4.0 Introduction

The implementation phase of the nursing process involves carrying out the proposed plan of nursing care. The nurse assumes responsibility for the implementation and coordinates the activities of all those involved in implementation, including the patient and family, other members of the nursing team, and other members of the health care team, so that the schedule of activities facilitates the patient's recovery (Hinkle & Cheever, 2018). This aspect of study deals with a description of the actual nursing care rendered to Master N.R. and family during the period of hospitalization. It further describes the preparation made towards discharge and follow ups including the home visits made to the patient's home and community while he was on admission and after discharge.

4.1 Summary of Actual Nursing Care Rendered to Master N. R.

Management of the patient was aimed at a successful medical treatment and nursing care to relieve Master N. R. of all problems she had as well as maintaining optimal physiological function of patient so that he could return to normal health. Nursing care rendered to Master N. R. started on the day of her admission, on 31st January, 2022 until he was discharged on the 4th February, 2022. During admission, daily routine nursing care were carried out such as bed making, bathing, mouth care, and serving of prescribed medications. Vital signs were monitored and recorded accordingly. Specific care was rendered according to patient's needs.

First Day of Admission (31st January, 2022).

On 31st January, 2022 at 3:00pm, Master N. R. was admitted to the Male medical ward through O.P.D at the Holy Family Hospital, Berekum per ambulation accompanied by one student nurse

and a relative. Master N.R. complained of severe headache, dizziness, fatigue and high body temperature. Patient was fully conscious. Happening to be at the nurses' station with the nurse in-charge at the time of his arrival, I was subsequently charged with the responsibility to carry out his admission to the ward. I took over Master N. R. from the accompanying nurse. The folder was cross-checked to confirm the information on the patient which includes her name, age, residential address, next of kin and religion. A quick assessment of his general appearance was made and he was then welcomed and immediately admitted and made comfortable in an admission bed. His vital signs were checked and recorded as;

- Temperature - 38.2 degree Celsius
- Pulse - 112 beats per minute
- Respiration - 25 cycles per minute
- BP - 110/80mmHg

His particulars such as name, sex, age, and residential address were recorded in the admission and discharge book and the daily ward state. Physical examination was done on patient from head to toe and patient was warm to touch, weak and looked mildly dehydrated. Patient was tepid sponged. He was introduced to the staffs present and was assured of the competency of the healthcare team. Hospital policies regarding visiting periods, payment of bills and the time vital signs will be checked were explained.

His relative was oriented to the ward and its surroundings and welcomed. They were reassured of a competent nursing care that everything about Master N.R. will be done with much care to ensure delivery of quality health care.

Patient was to undertake the following investigations;

1. Blood film for malaria parasites
2. Blood for full blood count

3. Blood for grouping and cross-matching

Medications prescribed were;

1. IV Artesunate 96mg at 0hour, 12hours and 24hours respectively
2. Tablet Paracetamol 500mg tid x 5days
3. Syrup Zincofer 5mls daily x 14days
4. Intravenous Normal Saline 2 litres within 48 hours
5. Tablet Folic acid 5mg daily x 30days
6. One unit of blood (B^+ packed cells)

The drugs were obtained from the pharmacy and the stat doses were served according to the prescription. I reassured her of good prognosis and competent healthcare. I reintroduced myself to patient and family as a final year student nurse of the Holy Family Nursing and Midwifery Training College, Berekum, who would like to take him and his family for my patient/family care study. Master N.R. and relative was informed that the care study is a requirement by the Nursing and Midwifery Council of Ghana in partial fulfilment towards the award of license in Registered General Nursing. I explained to Master N. R. and his relative the concept of the patient/family care study and assured them of privacy and confidentiality. It was added that a report will be written after the entire event. Master N. R. and relative agreed to my request and promised to offer me the necessary information and assistance. I mentioned to them that home visit is required to help know their home environment and how it contributed to patient's illness and how to prevent reoccurrence of the disease. I informed them that all the nursing staff present will help in caring of patient and not necessarily me alone. I then expressed my gratitude to them. Discharge planning was initiated with Master N. R. and family; thus, they will continue the care at home once he is well.

At 3:20pm, a nursing diagnosis, Hyperthermia (38.2^{o}C) related to invasion of plasmodium parasite was formulated and the objective that; patient's body temperature will fall within normal range (36.2^{o}C – 37.2^{o}C) in 24 hours was made to help manage fever.

The following interventions were carried out to ensure a reduction in her temperature;

Client's temperature was checked and read as 38.9^{o}C, nearby windows were opened to ensure adequate room ventilation, patient was hot foot bathed every 30 minutes, Patient was served cold water to reduce body temperature, Intravenous Normal Saline was started as indicated to replenish fluid losses to regulate body temperature, Tablet Paracetamol 500mg was administered.

At 3:30pm, a nursing diagnosis, Headache related to inflammatory response to presence of plasmodium parasite in the blood was formulated and the objective that; Patient headache will subside within 24 hours was made.

The following interventions were carried out to achieve the said objective;

Patient and family was reassured that measures were been put in place to relieve pain and also to improve his health, Patient's verbal complaints of discomfort were assessed by asking him, Pain assessment was done using the numerical rating scale and Master N.R. chose 6 to note his pain intensity, All forms of noise were reduced by restricting visitors, reducing volume of radio and television, Patient's vital signs were monitored regularly to know if there is increased in patients BP and Pulse, Prescribed analgesics such as Tablet paracetamol 500mg was administered

At 4:00pm, patient vomited and relative also admitted that patient had been vomiting before his admission and hence the nursing diagnosis; risk for deficient fluid and electrolyte volume related to vomiting was formulated and the objective that; patient's normal fluid and electrolyte

status will be maintained during hospitalization was made to help manage patient. The following interventions were carried out to achieve the said objective;

Patient's weight was monitored every morning with the same scale to know the patients weight, Patient's skin turgor and mucous membrane were assessed to assess for signs of dehydration by pinching the patient, Vitals signs were monitored and recorded to know changes in BP, 2 litres of Intravenous Normal Saline were administered, Patient's fluid rate was monitored and maintained to prevent cardiac overload, Small amount of water was given to support hydration, Intake and output was checked and recorded to help know amount.

At 5:30pm, 500mls of B positive blood (packed cells) with batch number HF 010 and expiry date 14/02/22 was set up.

Evening vitals signs were checked and recorded at 6pm. All due medications were also served and recorded. He was monitored until I handed him over to the night staffs at 9pm.

Second Day of Admission (1st February, 2022).

Master N.R. woke up at 5:45am according to night nurses who handed over to me.

On the second day of admission, at 7:00am, I went to the ward to continue with my nursing care for Master N. R. His morning vital signs had already been checked at 6am and recorded as in appendix. The night nurse reported to me that the second dose of IV Artesunate 96mg have been administered. During the In-patient review at 7:30am, Dr. J. attended to Master N. R. and the plan was to continue his medications. Patient had his breakfast which was porridge and bread.

His 10:00am vital signs were checked and recorded as in appendix.

Information from the night nurses and patient indicated that patient was unable to have adequate sleep throughout the night.

I interacted with Master N.R. and he confirmed it to be true and hence, at 11:00am, the nursing diagnosis, Insomnia related to change of environment and headache was formulated and the objective that; patient would regain normal sleep pattern within 48 hours was made to help manage the insomnia.

The following interventions were carried out to achieve the said objective;

Patient was nursed in a bed free from creases and crumps to promote comfort and enhance sleeping, Lights on the ward were dimmed in the evening to enable patient sleep, Client was given a warm water to bath to relax him and induce sleep, Noise was avoided by restricting visitors and keeping volume of nearby television set low, All nursing activities were organized to avoid interruption of patient sleep, Nearby windows were opened during the day time to provide good ventilation.

At 11:40am, patient showed signs of fatigue and activity intolerance and hence, the nursing diagnosis; self care deficit related to fatigue was formulated and the objective that; patient will be relieve of fatigue within 48 hours was made.

The following interventions were carried out to achieve the said objective;

Patient and family were reassured of competent healthcare to help patient cooperate during nursing care, Patient's bed was free from creases and cramps and given warm bath to ensure rest and sleep, Patient's hemoglobin level was checked to know changes in its level, Patient was served with tomato stew with rice and fish to improve energy, Patient was served with tomato stew with rice and fish to improve energy, Syrup Zincofer 5mls was served.

At 1:00pm, my interaction with Master N.R. and family revealed that they had less knowledge on condition and hence the nursing diagnosis, deficient knowledge related to inadequate information about the disease process, its treatment, and prevention was formulated and

objective that, patient would have adequate information about disease condition, treatment and prevention within 24 hours was made to help patient have adequate knowledge about his condition.

The following interventions were carried out to achieve the said objective;

Patient's knowledge on malaria was assessed by asking questions on signs and symptoms of malaria, Nearby TV set was turned off to provide a quiet atmosphere for learning, Patient was allowed to ask questions for clarification, Master N.R.'s questions were answered in simple understandable language (Twi) without using professional jargons, Patient was educated on medication and its side effects, Patient was asked to summarize what he heard to ascertain if learning have taken place.

At 2pm, patient vital signs were checked and recorded as in appendix. His due medications were served and recorded. Patient was served with plain rice with vegetable stew for his lunch. At 3:20pm, the objective that was set on 31st January, 2022 to reduce patient's body temperature was evaluated and goal was fully met as nurse recorded a temperature of 36.5^{o}C and relative verblized that patient's body was not warm to touch.

At 3:30pm, evaluation on the goal set on 31st January, 2022 to relieve patient's headache was done. Goal was fully met as patient verbalized that he does not feel any pain and nurse observed patient has a relaxed facial expression and increased participation in activity.

At 6:00pm, patient's vital signs were checked and recorded as shown in the appendix. His due medications were administered and due documentation were made. Master N.R. and relative was informed about my intention to visit their home the next day and I explained to them that it is a requirement and part of the care.

Patient was served with boiled plantain with kontomire stew for his supper. He performed his personal hygiene after is meal.

Patient vomiting was assessed by asking the patient number of times he has vomited and he verbalized that, he vomited once. Patient was well hydrated when skin turgor was assessed.
At 10:00 pm Master N.R. vital signs were checked and recorded .And his due medications were served.

Third Day of Admission (2nd February, 2022).

On this day Master N.R. woke up as early as 6:00 am; he brushed his teeth, visited the toilet and took his bath. I arrived at the ward around 7:30am and saw him taking his breakfast. On this day of admission, Master N. R.'s condition was improving and he looked healthy. Report from the night nurses read that he was able to sleep well upon the measures put in place. Vital signs checked and recorded at 6:00am read as follows:

At 8:30am client was reviewed by Doctor J. and plan was to continue all his medications. Tablet Arthemether/ Lumifanthrine – 60/ 360mg bd x 72hours.

At 1:00pm, the objective that was set on 1st February, 2022 to help patient have adequate knowledge about disease condition was evaluated and was goal fully met as patient verbalised basic understanding about the disease process, its treatment, and prognosis and patient giving feedback information on knowledge acquired to the nurse.

At 2:00pm, patient vital signs were checked and recorded as in appendix and prescribed medications were served. Patient was served with Rice and stew as his lunch and he was able to eat all.

I embarked on my first home visit after work, I went with patient's eldest sister. The main aim of the visit was to acquaint myself with the client's home environment, to familiarize myself with the other family members, to confirm information given by my client about the family and their home environment and to find out their health needs and assist towards effective solutions to any health problems that may be identified.

At 6pm, client's vital signs were checked and recorded. Patient was made comfortable in bed after evening medications were served.

Patient vomiting was assessed by asking the patient number of times he has vomited and he verbalized that, he vomited once. Patient was well hydrated when skin turgor was assessed. Patient was served with Banku and Okro stew as his supper but was able to eat one ball. Patient slept around 10:30pm.

Fourth Day of Admission (3rd February, 2022)

On this day of admission, patient woke up at around 5:30am and reported to have had a sound night. Patient had really improved because he looked very cheerful. He observed his personal hygiene needs and vital signs checked and recorded at 6am read as in appendix;

At 8:00am during ward rounds, patient made no complains. He was requested to check his hemoglobin level.

At 11:00am, I evaluated the objective that was set on 1st February, 2022 to restore patients sleep pattern to normal within 48 hours and goal was fully met as patient slept at least 8 hours during night and 3 hours in the day time and also patient verbalized that he slept soundly during his hours of sleep.

At 11:40am, I evaluated the objective that was set on 1st February, 2022 that patient will be relieved of fatigue within 48 hours and goal was fully met as nurse observed that patient can perform minor activities and patient verbalized that he can perform activities of daily living.

At 2pm, afternoon vital signs were checked and recorded as shown in the appendix. Rice and stew were served as lunch.

At 6pm, evening vital signs were checked and recorded as shown in the appendix. All routine nursing actions were carried out and documented for references and to ensure quality care as well. After all these, patient and relative were informed about possible discharge the next day

as said by the doctor and they were very happy about that. We later had conversation regarding work and activities that will promote their health. Master N. R. was made comfortable in bed after he took his bath. Evening medications were served and he slept around 10:00pm.

Day of Discharge/Fifth Day of Admission (4th February, 2022).

Patient woke up feeling strong and better. Message from night nurses indicated that Master N. R. was able to sleep well. I greeted Master N. R. and his relative and they responded with a cheerful facial expression. His morning vitals had already been checked and recorded at 6:00am as follows:

Temperature	-	36.2^{o}C
Pulse	-	94bpm
Respiration	-	22cpm
BP	-	110/70mmHg

At 8:30am, I evaluated the objective that was set on 31st February, 2022 that Patient's would maintain his normal fluid and electrolyte status during hospitalization and goal was fully met as nurse observed patient been well hydrated and patient verbalized that vomiting have subsided.

At 9:00am during routine ward rounds, Master N. R. was discharged since his condition was stable and he had no complains. His relative was informed and the bill was assessed to be paid. An amount of 34 Ghana Cedi's (GHC 34.00) for medications which was not covered by National Health Insurance Scheme was paid. Master N. R. and relative was educated on the need to use insecticide-treated nets, indoor residual spraying, and larval and adult vector control.

He was informed to come for review on 11th February, 2022 at the Out Patient Department. The need to continue with medications was emphasized and review date was stretched on. Client and family bid the ward inmates and staffs goodbye. They were seen off. The bed linen used was removed and the bed and locker were disinfected.

4.2 Preparation of Patient/Family for Discharge and Rehabilitation

Preparation for discharge commenced from the time of admission at the hospital, at 3:00pm on 31st February. 2022 till the last day of visit. The patient and family were informed that staying in the hospital was for a temporal period of time. Education of patient and family on the causes, clinical features, treatment and management of severe malaria were reemphasized. This was aimed at helping the patient and relatives in the provision of adequate care. Prior to patient discharge, health education was given to the patient and relative on the need to use insecticide-treated nets, indoor residual spraying, and larval and adult vector control as well as maintaining good personal hygiene.

Patient was encouraged to take in food rich in the essential food nutrients especially iron such as ‘kontomire’, garden eggs, plantain and others. Patient and his family were also educated on the need to maintain personal and environmental hygiene to help improve immunity. A great emphasis was made on the need to continue with medication and to report to the hospital if any problem does occur. I educated patient about the effects of the use of over the counter drugs and urged him to seek medical care from any health centre. Patient was informed to come for review on Friday, 11th February, 2022. Necessary documents were recorded into the admission and discharge book as well as the ward state. Assessment of patient bills were made with the help of National health insurance scheme and paid GH¢34.00 for medications that were not covered by the NHIS. Patient belongings were packed and I accompanied them to the hospital gate.

4.2 Follow Up/ Home Visit/ Continuity of Care

Home visit is a visit made by a health professional to a patient's home, usually with face to face contact between the health professional and the patient, less commonly between health professional and the patient's family.

Home visits were done before and after client's discharge. It is friendly but a purposeful visit to client home. Health education was given and the need for the prevention of complication was reemphasized. It provided a good account on the causes and predisposing factors of client's illness.

First Home Visit (2nd February, 2022).

My first home visit was made on 2nd February, 2022 thus; the 3rd day of admission to Nyame Nnae, a 30km journey from Holy Family Hospital, Berekum. It was agreed to visit their home on this day, while patient was on admission. On the day of admission, I explained to him that it is a requirement and part of the care. The purpose of this visit was to assess the home environment of my patient and to give appropriate health educations to his family before his discharge on general cleanliness and safeguard methods to prevent themselves from injury. I left Holy Family Hospital, Berekum around 2:30pm and safely arrived at my patient's house at around 2:52pm with patient's eldest sister, where I was warmly welcomed by mother who gave me a comfortable seat and offered me water as tradition demands. I was asked of my mission so I introduced myself to them as a final year nursing student as said above and the need for the visit. My patient lives in a six bed room self-contained house built with bricks and roofed with aluminium sheets with kitchen. Their house is source with electricity from the Volta River Authority.

During my interactions with patient's mother, she revealed to me that their place of convenience was not a problem because there was a toilet in the house. Refuse disposal site is

about 150 meters away from the house and source of water from a tap at the house. I also realised that water containers were covered. No health facility was identified nearby.

Patient and family lives in the house alone. There is no vulnerable person such as an elderly or a child in the house.

Based on the above findings, I reinforced on the need to continue to cover water containers and also food to prevent contamination. The need to ensure proper ventilation was also stressed on. Hand washing with soap before eating and after visiting toilet and their importance were stressed and the need to use insecticide-treated nets, indoor residual spraying, and larval and adult vector control as well as maintaining good personal hygiene. Master N. R.'s condition; the causes, signs and symptoms, management and prevention were explained to them. They were also encouraged to continue good refuse disposal to prevent environmental pollution and breeding of mosquitoes. They were therefore reassured that Master N. R. will soon get well and be discharged home.

Finally, they were encouraged to ask questions and answers were provided in simple terms to enhance their understanding. I thanked them for their hospitality and they thanked me too. I left the house around 3:20pm.

Second Home Visit (8th February, 2022).

This visit was made on 8th February, 2022 at 4pm, as it was scheduled with Master N.R. and family to pay them a second visit. The purpose of this visit was to ascertain whether the education given to them during the period of hospitalization and first home visit had been adhered to and also to remind them of the review date which was on 11th February, 2022. On arrival, client, his mother and elder sister were all waiting to receive and welcome me. I made enquiries about their health which they responded positively. On assessment the environment was neat and they were commended for that.

Education on good nutrition was stressed on to help protect client and family from any diseases. I reminded them of the review date and the need for the review. I educated them on need to comply with medication and the need to seek for health care when he is not feeling well. Client and family were thanked for their cooperation and permission was sought to leave. I promised them of another visit which will be my last. Patient's eldest sister escorted me to a place where I took a tricycle from Nyame Nnae back campus at around 5:20pm.

Day of Review (11th February, 2022).

On Friday, 11th February, 2022 Master N. R. and Mrs. A. P. were met at the Out-Patient Department of Holy Family Hospital, Berekum at 9:10am looking cheerful and lovely as noted from facial expression. The vital signs checked and recorded as follows;

Temperature	36.0ºC
Pulse	90bpm
Respiration	23cpm
BP	110/70mmHg

Upon assessment by the doctor, Master N. R. was healthy. Master N.R. did not make any complains. He was told not to hesitate to report to the hospital if he should encounter any health problem. He was also encouraged to practice personal and environmental hygiene to protect himself from getting diseases and injuries. Master N. R. was assured of a third home visit. I then accompanied them to the hospital gate where they boarded taxi home.

Third Home Visit (27th February, 2022).

The main aim for conducting the third home visit was to find out how client and his family members were doing and to terminate the care by handing over my patient to his family to continue with the care.

On Sunday 27th February, 2022 at around 1:30pm I made my last home visit for assessment and evaluation of care. 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 was warmly welcomed and offered seat. After series of conversation, I handed over patient to the family to continue with care since there was no health facility around, I educated them on the need to live healthy life and visit a health facility often and any time need arises. They commended me for good work done and accepted to continue the care of Master N. R. 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. After interacting with patient and family for a while, I re-emphasized on health educations that had been given to them already. I also educated them again on the preventions of malaria by sleeping in impregnated insecticide mosquito net, weeding their environment to prevent breeding places for mosquitos. 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. Family members 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 a taxi back home at around 3:20pm.

CHAPTER FIVE

EVALUATION OF CARE RENDERED TO PATIENT AND FAMILY

5.0 Introduction

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

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. Patient was relieved of hyperthermia (1st February, 2022)

On 31st January, 2022 at 3:20pm, a nursing diagnosis, Hyperthermia (38.2^{o}C) related to invasion of plasmodium parasite was formulated and the objective that; patient's body temperature will fall within normal range (36.2^{o}C – 37.2^{o}C) in 24 hours as evidenced by nurse recording a temperature of 36.2-37.2^{0}C and also nurse observing that patient's body was not warm to touch.

The following interventions were carried out to ensure a reduction in her temperature;

Client's temperature was checked and read as 38.9^{o}C, nearby windows were opened to ensure adequate room ventilation, patient was hot foot bathed every 30 minutes, patient was served cold water to reduce body temperature, Intravenous Normal Saline was started as indicated to replenish fluid losses to regulate body temperature, tablet Paracetamol 500mg was administered.

On 1st February. 2022 at 3:20pm, the objective that was set on 31st January, 2022 to reduce patient's body temperature was evaluated and goal was fully met as nurse recorded a temperature of 36.5ºC and relative verblized that patient's body was not warm to touch.

2. Patient was relieved of headache (1st February, 2022)

On 31st January, 2022 at 3:30pm, a nursing diagnosis, Headache related to inflammatory response to presence of plasmodium parasite in the blood was formulated and the objective that; Patient headache will subside within 24 hours as evidenced by the patient verbalizing relief of pain and the nurse observing patient has relaxed facial expression and increased participation in activities.

The following interventions were carried out to achieve the said objective;

Patient and family was reassured that measures were been put in place to relieve pain and also to improve his health, patient's verbal complaints of discomfort were assessed by asking him, pain assessment was done using the numerical rating scale and Master N.R. chose 6 to note his pain intensity, all forms of noise were reduced by restricting visitors, reducing volume of radio and television, patient's vital signs were monitored regularly to know if there is increased in patients BP and Pulse, prescribed analgesics such as Tablet paracetamol 500mg was administered

On 1st February, 2022 at 3:30pm, evaluation on the goal set on 31st January, 2022 to relieve patient's headache was done. Goal was fully met as patient verbalized that he does not feel any pain and nurse observed patient has a relaxed facial expression and increased participation in activity.

3. Patient's fluid and electrolyte balance was maintained (4th February, 2022)

On 31st January, 2022 at 4:00pm, patient vomited and relative also admitted that patient had been vomiting before his admission and hence the nursing diagnosis; risk for deficient fluid

and electrolyte volume related to vomiting was formulated and the objective that; patient's normal fluid and electrolyte status will be maintained during hospitalization as evidenced by nurses observing patient has normal intake and output chart and patient relative verbalizing that patient can tolerate liquids without vomiting.

The following interventions were carried out to achieve the said objective;

Patient's weight was monitored every morning with the same scale to know the patients weight, patient's skin turgor and mucous membrane were assessed to assess for signs of dehydration by pinching the him, vitals signs were monitored and recorded to know changes in BP, 2 litres of Intravenous Normal Saline were administered, patient's fluid rate was monitored and maintained to prevent cardiac overload, small amount of water was given to support hydration, intake and output was checked and recorded to help know amount.

On 4st February, 2022 at 8:30am, I evaluated the objective that was set on 31st January, 2022 that patient's normal fluid and electrolyte status would be maintained during hospitalization and goal was fully met as nurse observed patient been well hydrated and patient verbalized that vomiting have subsided.

4. Patient normal sleep pattern was restored (3rd February, 2022)

On 1st February, 2022 at 11:00am, Information from the night nurses and patient indicated that patient was unable to have adequate sleep throughout the night. I interacted with Master N.R. and he confirmed it to be true and hence, the nursing diagnosis, Insomnia related to headache was formulated and the objective that; patient would regain normal sleep pattern within 48 hours as evidence by; patient sleeping at least 8 hours during night and 3 hours in the day time and patient verbalizing that he slept soundly.

The following interventions were carried out to achieve the said objective;

Patient was nursed in a bed free from creases and crumps to promote comfort and enhance sleeping, Lights on the ward were dimmed in the evening to enable patient sleep, Client was given a warm water to bath to relax him and induce sleep, Noise was avoided by restricting visitors and keeping volume of nearby television set low, All nursing activities were organized to avoid interruption of patient sleep, Nearby windows were opened during the day time to provide good ventilation.

On 3rd February, 2022 at 11:00am, I evaluated the objective that was set on 1st February, 2022 to restore patients sleep pattern to normal within 48 hours and goal was fully met as patient slept at least 8hours during night and 3 hours in the day time and also patient verbalized that he slept soundly during his hours of sleep.

5. Patient was relieved of fatigue (3rd February, 2022)

On 1st February, 2022 at 11:40am, patient showed signs of fatigue and activity intolerance and hence, the nursing diagnosis; self care deficit related to fatigue was formulated and the objective that; patient fatigue will subside within 48 hours as evidence by; nurse observing that patient can perform minor activities and patient verbalizing that he can perform activities of daily living.

The following interventions were carried out to achieve the said objective;

Patient and family were reassured of competent healthcare to help patient cooperate during nursing care, Patient's bed was free from creases and cramps and given warm bath to ensure rest and sleep, Patient's hemoglobin level was checked to know changes in its level, Patient was served with tomato stew with rice and fish to improve energy, Patient was served with tomato stew with rice and fish to improve energy, Syrup Zincofer 5mls was served.

On 3rd February, 2022 at 11:40am, I evaluated the objective that was set on 1st February, 2022 that patient will be relieved of fatigue within 48 hours and goal was fully met as nurse observed

that patient can perform minor activities and patient verbalized that he can perform activities of daily living.

6. Patient/family gained adequate knowledge on malaria (2nd February, 2022)

On 1st February, 2022 At 1:00pm, my interaction with Master N.R. and family revealed that they had less knowledge on condition and hence the nursing diagnosis, deficient knowledge related to inadequate information about the disease process, its treatment, and prevention was formulated and objective that, patient would have adequate information about disease condition, treatment and prevention within 24 hours as evidenced by patient verbalising basic understanding about the disease process, its treatment, and prevention and patient giving feedback information on knowledge acquired to the nurse.

The following interventions were carried out to achieve the said objective;

Patient's knowledge on malaria was assessed by asking questions on signs and symptoms of malaria, Nearby TV set was turned off to provide a quiet atmosphere for learning, Patient was allowed to ask questions for clarification, Master N.R.'s questions were answered in simple understandable language (Twi) without using professional jargons, Patient was educated on medication and its side effects, Patient was asked to summarize what he heard to ascertain if learning have taken place.

On 2nd February, 2022 at 1:00pm, the objective that was set on 1st February, 2022 to help patient have adequate knowledge about disease condition was evaluated and was goal fully met as patient verbalised basic understanding about the disease process, its treatment, and prognosis and patient giving feedback information on knowledge acquired to the nurse.

5.2 Amendment of the Nursing Care Plan

Despite the numerous problems identified, with the individualized comprehensive nursing care and support from other members of the health team and co-operation of Master N. R. and

family, all of the goals set were fully met on the allocated time. The care plan was therefore not amended.

5.3 Termination of Care

Care of patient and family ended on the 27th February, 2022 which was my last home visit. This ended the interaction between the health team and Master N. R. and his family. The preparation for termination started on day of admission through discharge, review to the third home visit. During these periods, Master N.R. and family were educated on various topics. I congratulated the family for the care they had rendered to Master N. R. Since there was no hospital and clinic facility available around their area I then handed over to the family to continue with care at home and educated them on importance to sleep under treated mosquito net, wear long-sleeved clothing and pants if he is outdoors at night and use a mosquito insecticide spray in to prevent mosquito bite. Education on personal hygiene and the need to visit the hospital when they feel sick was made. I then thank them for their co-operation. They were entreated to report to the nearest hospital whenever any ailment or disorder occurs. They were told that now that Master N.R. health had been restored, the care for him has officially ended. I informed them of my desire to visit them unofficially whenever I had the opportunity. They were happy and noted that they would miss my care and would strictly adhere to all instructions given to them. It was a moment to remember when I told them of my intention to leave. There was no separation anxiety as patient and the relatives had enough psychological preparations from the day of admission till discharge but it was still difficulty bidding them farewell.

CHAPTER SIX

SUMMARY AND CONCLUSION

6.0 Introduction

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

6.1 Summary

Master N.R. a sixteen years was admitted through OPD to the male's medical ward of Holy Family Hospital, Berekum on 31st January, 2022 at 3:00pm. According to Master N. R., he was in his usual state of health until 30th January, 2022 when he started having high body temperature and severe headache. He took some paracetamol and the fever and headache subsided after some time. According to him, his condition got worse in the evening and his parents decided to take him to the Holy Family Hospital, Berekum the next day for medical attention. He was admitted to the Male's Medical Ward through O.P.D of Holy Family Hospital, Berekum per ambulation accompanied by one student nurse and a relative. Patient was admitted with a diagnosis of Severe Malaria. Patient spent five days on the ward and six nursing problems were identified. These were; Patient had fever (38.2^{o}C), patient complained of severe headache, patient experienced vomiting, patient could not sleep continuously for four hours, patient had fatigue/general weakness and patient had less knowledge on Malaria. Nursing diagnosis were formulated for each of the problems and in order to solve these problems, objectives were set, nursing orders were implemented and goals were fully met.

Laboratory investigations requested were;

4. Blood film for malaria parasites

5. Blood for full blood count
6. Blood for grouping and cross-matching

Master N. R. was managed on the following medications;

8. IV Artesunate 96mg at 0hour, 12hours and 24hours respectively
9. Tablet Paracetamol 500mg tid x 5days
10. Syrup Zincofer 5mls daily x 14days
11. Intravenous Normal Saline 2 litres within 48 hours
12. Tablet Folic acid 5mg daily x 30days
13. One unit of blood (B^+ packed cells)
14. Tablet Arthemether/ Lumifanthrine – 60/ 360mg bd x 72hours

Patient was also assisted in maintaining his personal hygiene, rest and sleep, nutrition, and exercises were also ensured. Patient was discharged on 4th February, 2022. On the 14th February, 2022 patient reported for review as scheduled. It was to find out if patient/family was adhering to the advice and all the education given to improve their health and standard of living. Three home visits were embarked on. The first home visit was done while patient was still on admission on 2nd February, 2022, the main aim of the visit was to acquaint myself with the client's home environment, to familiarize myself with the other family members, to confirm information given by my client about the family and their home environment and to find out their health needs and assist towards effective solutions to any health problems that may be identified. Second home visit was on the 12th February, 2022 the purpose of this visit was to ascertain whether the education given to him and his family during the period of hospitalization and the first home visit had been adhered to and also to remind them of the review date and third home visit was on the 27th February, 2022 the main aim was to find out how client and his family members were doing and to terminate the care by handing over patient to the family

to continue with the care. The care of Master N.R. and his family were terminated on the 27th February, 2022 during the third home visit when patient had fully recovered.

6.2 Conclusion

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

It is my recommendation that all students are given the opportunity to embark on the patient/family care study to implement the nursing process in order to render individualized comprehensive care to patients/families. It also help the patient and family to gain adequate knowledge about Malaria, its causes, treatment and preventions. In brief, I really enjoyed every bit of writing this script despite the challenges encountered.

APPENDIX

Table 9: Vital Signs of Master N.R. throughout the period of hospitalization

Date	Time	Temperature (°C)	Pulse (bpm)	Respiration (cpm)	Blood pressure (mmHg)
31/01/22	3:00pm	38.2	112	25	110/70
	6:00pm	37.4	98	24	120/60
	10:00pm	36.0	101	22	110/70
01/02/22	6:00am	37.1	99	23	110/80
	10:00 am	36.8	98	24	120/80
	2:00pm	36.6	99	22	110/80
	6:00pm	36.8	102	25	110/70
	10:00pm	36.7	104	24	120/70
02/02/22	6:00am	36.3	99	23	110/80
	10:00am	36.5	103	22	120/80
	2:00pm	36.8	104	25	110/60
	6:00pm	36.5	98	22	120/80
	10:00pm	36.9	106	24	120/80
03/02/22	6:00am	36.4	99	21	120/60
	10:00pm	36.6	101	24	120/70

	6:00pm	36.6	102	24	110/70
	10:00pm	36.7	98	22	120/80
04/02/22	6:00am	36.2	94	22	110/70
11/02/22	9:20am	36.0	90	23	110/70

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