



**NUTRITIONAL MANAGEMENT OF CANCER PATIENTS AT
AHSANIA MISSION CANCER AND GENERAL HOSPITAL**

BY

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**Submitted to the Department of Nutrition and Food Engineering in the partial
Fulfillment of B.Sc. in Nutrition and Food Engineering**

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APPROVAL

This internship titled “Nutritional Management of Cancer Patients at Ahsania Mission Cancer and General Hospital” has been prepared by **Serazum Monira** to the Department of Nutrition and Food Engineering at Daffodil International University. It has been acknowledged as good enough for the partial accomplishment of the requirements for the degree of B.Sc. in Nutrition and Food Engineering, and its format and content have been approved. The presentation will take place in July, 2023.

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DECLARATION

We therefore declare that we fulfilled this intern under the supervision of **Ms. Tasmia Tasnim, Assistant Professor**, Department of Nutrition and Food Engineering, Daffodil International University. We in addition declare that neither this intern nor any part of the content of this intern has been submitted to any institution or university for the granting of a degree or certificate.

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We would like to begin by expressing our thankfulness to God for providing us with the opportunity to successfully complete the capstone project and internship for the academic year. **Ms. Tasmia Tasnim**, Assistant Professor in the Department of NFE at Daffodil International University, is a person who we owe a significant amount of thanks to and someone to whom we are incredibly grateful. The fact that our project supervisor had such a rich history in the field and was so enthusiastic about the topic of "*Clinical Nutrition and Dietetics*" gave us confidence. Because to his unending perseverance, academic direction, unending praise, frequent and continuous assessment, favorable feedback, helpful advice and corrections at every step, this intern was successfully accomplished.

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During the time that we spent at Daffodil International University, we have developed a deep respect for everyone who contributed to the formation of the subject matter.

I am indebted to **Farjana Islam Shampa**, a senior nutritionist at Ahsania Mission Cancer and General Hospital (AMCGH), who served as my internship supervisor. I am grateful to her for all of the useful advice she provided on the subject.

In conclusion, we need to be grateful for the endless love and compassion that came from our parents.

EXECUTIVE SUMMARY

Regarding the patient's various nutritional requirements, providing the right kind of food in a healthcare facility is a particularly challenging task. Food must not only meet individual nutritive needs, but it must also be suitable for various group of age, religious, artistic and social contexts, as well as also various clinical conditions. This internship was truly brief and selected for a short period of time. This is a sixty day internship program at the Ahsania Mission Cancer and General Hospital (AMCGH). I'm satisfied and feel that I've learned more knowledge and gained new knowledge, ideas, and skills and I've accomplished several of my knowledge goals. Dietitian assigned morning shift duties were performed by me. Patients are closely watch during their admission time in the indoor clinic to ensure that their diets are balanced. Wellness and prevention measures, such as counseling and weight-loss programs, diets for cancer patients with diabetes or chronic renal disease, and patients of various types. Skilled nurse station to create the patient's medical record. Chemotherapy, surgery, radiotherapy, palliative care and conservative treatment. I have gained a great deal of knowledge from observing patients. This internship was also very helpful and beneficial for determining my objectives, my strengths, and my weaknesses. This opportunity helps me discover what internship and activities to accomplish practically and learn the knowledge I have gained and enrich myself in the coming time.

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ACRONYMS

AMCGH - Ahsania Mission Cancer and General Hospital

NFE – Nutrition and Food Engineering

CKD -Chronic Kidney Disease

CVD – Cardiovascular Disease

DM – Diabetes Mellitus

CHAPTER 1

Introduction

1.1 Introduction

The term cancer refers to malignant neoplasms or tumors. Cancer is caused by mutations or aberrant activation of genes that regulate cell proliferation and mitosis. Foods may cause cancer by being a direct carcinogen or by producing carcinogens during cooking. Sometimes, microorganisms in hoarded foods may produce carcinogens. Food stuff may also serve as a substrate for the formation of carcinogen in the body, or it may modify the bacterial flora of the intestine, resulting in carcinogen production. Men and women with inactivity, a high energy intake, and a large body mass have an increased risk of developing cancer. Taste, scent, appetite, capacity to consume enough food may be affected by cancer and cancer treatment. This can result in malnutrition, which is a deficiency of essential nutrients. Alcohol intake and obesity may both increase the risk of malnutrition. Malnutrition can result in weakness, fatigue, and an inability to combat infection or complete cancer treatment. As a result, malnutrition can diminish an individual's quality of life and become fatal. If the disease develops or spreads, malnutrition may become worse. Multiple forms of complications are developed in cancer patients as a result of diabetes mellitus. Those with uncontrolled blood sugar or long-term diabetes may be at a greater risk for developing complications. Diabetes may cause kidney damage, nerve damage, eye, skin, and foot damage, as well as despondency. Therefore, appropriate medication, diet, exercise, and glucose control may help to reduce the risk of these complications.

1.2 Objective

Daffodil International University has a required internship program for Nutrition and Food Engineering students. It represents the culmination of a student's educational pursuits. This internship program represents the culmination of our bachelor's degree and the beginning of a prosperous future. As a result, as students of Nutrition and Food Engineering, we must select a reputable hospital or industry-related organization for the training necessary to fully comprehend a topic covered in our formal qualifications. Ahsania Mission Cancer and General Hospital (AMCGH) is my internship program choice because I am interested in the hospital industry. In the realm of contemporary nourishing well-being, there is a substantial gap between academic training and the application of theoretical study. Therefore, this practical labor can assist me in making up for my knowledge gaps.

This report concentrates on a prerequisite of the B.Sc. in Nutrition and Food Engineering program. The title of my report topic is "Nutritional Management of Cancer Patients at Ahsania Mission Cancer and General Hospital," and its primary goal is to observe their management system, patient care, and nutritional problem-solving in order to benefit me in the future.

1.3 General Objective

This internship report was prepared particularly to fulfill the Bachelor of Nutrition and Food Engineering (NFE) degree requirement for the faculty of daffodil International University.

1.4 Specific Objective

To learn about the hospital diet, which is given to hospitalized patients with numerous cancer diseases that cause complications. Patients afflicted with various types of cancer are provided with specialized nutrition. This study's primary objective is to investigate the complete inpatient diet and to evaluate the strategy on a patient.

- Determine the alteration of a specific cancer illness diet.
- To learn about a specific cancer diet alteration from a standard diet.

CHAPTER 2

Overview

2.1 Ahsania Mission Cancer and General Hospital

AMCGH is a private hospital in Bangladesh that provides cancer treatment. Dhaka Ahsania Mission (DAM), which has been assisting people for many years, took the brave action of establishing a 500-bed cancer hospital of world-class quality in Sector-10, Uttara, in the city of Dhaka, Bangladesh. This was part of their ongoing efforts to assist individuals. A U.S.-based architectural firm named "Design Alliance" created a stunning, compatible design for the "Dream" Hospital. The long-awaited journey of Ahsania Mission Cancer and General Hospital, Uttara began on April 9, 2014, when the Prime Minister of the People's Republic of Bangladesh inaugurated it. This hospital was intended to be a "State of the Art" 500-bed facility with outstanding architectural splendor on the Turag River bank in the northern portion of Dhaka Metropolitan City., following a comprehensive analysis of the Cancer situation in Bangladesh. This structure has thirteen floors and two cellars. It contains instruments for treating both cancer patients and other patients, but cancer treatment is its primary focus.

Efforts have been made to provide individuals in Bangladesh with access to a cancer treatment and research facility of international caliber. Ahsania Mission Cancer and General (AMCGH) was planned to be a "Center of Excellence" for cancer control in the country, utilizing "State of the art" techniques, continuing to operate on a "NO PROFIT-NO LOSS" basis, and providing 30 percent of its services at no cost or at a reduced cost to poor and indigent patients. According to the data, the average cost of cancer treatment and related services at this hospital is significantly lower than that of any private or NGO hospital in Bangladesh or South Asia. It has also begun to prevent cancer patients in Bangladesh from traveling abroad for treatment, thereby conserving valuable foreign currency.



Figure 1.1: Ahsania Mission Cancer and General Hospital

2.2 Vision and mission

- Establish a large opportunity for the most modern clinical and health care services, with a focus on cancer treatment, at an affordable price.
- Thirty percent of the treatment's facilities will be allocated for impoverished and indigent patients at no cost.
- Develop health care leadership through a committed and transparent management system, as well as high-quality medications and health-care products.
- Develop high-caliber specialized personnel (researchers, scientists, physicians, nutritionists, technicians, and other personnel) and extend these services to provide Bangladeshis with affordable AMCGH Health care.

2.3 Services and Facilities

There are numerous services and facilities for patients at AMCGH. These are:

<ul style="list-style-type: none"> • Diagnostic Services • In Patient Services • Day Care • Dental and eye care services • Pharmacy 	<ul style="list-style-type: none"> • Medical Oncology • Radiology • Surgical Oncology • General Medicine • Nuclear Medicine
<ul style="list-style-type: none"> • Accident and Emergency • Limited Emergency Service 	<ul style="list-style-type: none"> • Hematology & palliative care
<ul style="list-style-type: none"> • OT Service (Limited Scale) • OPD • General Surgery 	<ul style="list-style-type: none"> • Chemotherapy • Radiotherapy-LINAC • Radiotherapy-Brachy Therapy
<ul style="list-style-type: none"> • Cancer Screening & Early Detection • Mamography • Ultrasonography • General Lab • Histopathology Lab • CT Scan • Echo Cardiography • Endoscopy • MRI • Physiotherpay 	<ul style="list-style-type: none"> • ICU • CCU • General Ward • VIP and general cabin

2.4 Joining process for Internship

I contacted my supervisor Ms. Tasmia Tasnim Ma'am prior to beginning my internship as a nutritionist at Ahsania Mission Cancer and General Hospital. On her recommendation, I went to the AMCGH Hospital to learn about the joining procedure. After that, I spoke with the assistant director of medical services, Dr. Farhana Afrin Ferdousi, who informed me that I must submit an internship application letter to the director, sir. I went to the institution the following day to deliver the letter to MD Sayed, Executive, and Admin & Medical Services. Then, a few days later, I went to the hospital to receive my acceptance letter from MD Sayed, Executive, and Admin & Medical Services, who had confirmed my application letter. Completed a 60-day internship program (21 March 2022 to 30 July 2022). I worked in an indoor sector where I encountered patients with all types of illness. Farjana Islam Shampa, Senior Dietitian, is a highly qualified nutritionist as well. She was extremely helpful and welcoming throughout my internship.

2.5 Activities

As part of my internship, I worked in the indoor section. I met all types of patients in the indoor section. My internship supervisor Farjana Islam Shampa Ma'am always instructed me on how to manage cancer patients and their challenges, requirements, etc. As my topic is Nutritional Management of Cancer Patients at Ahsania Mission Cancer and General Hospital. I therefore met the majority of these patient types.

2.6 Daily ward round and observation

From 9 a.m. to 5 p.m., I began my regular ward round, covering the entire unit. Every intern on the morning shift is required to visit each facility. I met the patients while rounding the wards and engaged with them to learn about their present conditions, nutritional requirements, and challenges. I then took those data. In addition, observe their diet chart within their files. The patient is promptly sent to an emergency department and given the required care to stabilize their condition, however, if their condition is serious. Following stabilization of the patient's condition, registration is finished and the patient is admitted to the ward in accordance with their condition. After having their height and weight measured and weighed, cancer patients are admitted. I took note of the issues to discuss with my supervisor after observing their diet conversation and current condition.

2.7 Management of the patients

Every category of patient is welcome to visit Ahsania Mission Cancer and General Hospital for treatment. When I visited the wards, all of the nurses were extremely cooperative and willing to give their support to the patients. I observed cancer patients suffering from chronic conditions such as CKD, CVD, and DM. So, according to their complications, nutritionists give them a proper diet chart and nutritional advice. Every few hours, they monitor their patients and give them the proper medication. The foods are always given on time, and nurses give them foods based on their diet charts. Every two hours, physicians and nutritionists visit and follow up with their patients.

2.8 Particular objectives

- To understand the operational activities of the health industry.
- To increase the limited understanding of the health care system.
- To gain a deeper understanding of the cancer and its chronic complications.
- To gain a deeper understanding of the nutritional diet chart based on their compilations.
- To learn about patient management, counseling, and patient observation techniques as an intern nutritionist.

In the Internship program I have learned the following topic:

- Cancer
- Cancer with Diabetes Mellitus
- Cancer with Chronic Kidney Disease (CKD)
- Obesity
- Outdoor and indoor patients
- Briefly gain knowledge about different types of feeding

CHAPTER 3

Cancer and Chronic Diseases

3.1 Cancer

Cancer refers to uncontrolled cell growth, it may spread to patient's body and long term illness. Due to the combined effects of the disease and its treatment, cancer patients are particularly susceptible to nutritional deficiency. The general health of patients can be enhanced by nutrition. Malnutrition, on the other hand, adversely affects every part of a patient's life by raising the risk of infection, delaying the healing of wounds, increasing the toxicity of treatments, lengthening hospital stays, and raising healthcare expenditures. Cancer and its treatment affect nutritional status through modifying the metabolic system, altering food taste, and limiting food intake. It alters physiological and psychological functioning, potentially affecting quality of life. Indeed, both acute and chronic symptoms associated with chemotherapy typically have a deleterious influence on patients' nutritional condition. According to my intern topic, here are some complications.

3.2 Causes of cancer

Cancer is caused by the transformation of normal cells into tumor cells in a multistage process that progresses from precancerous lesions to malignant tumors. These changes are the result of the interaction between a person's genetic factors and three types of external agents : physical carcinogens, such as ultraviolet and ionizing radiation, chemical carcinogens, such as asbestos, tobacco smoke components, alcohol, aflatoxin (a food contaminant), and arsenic (a drinking water contaminant), and biological carcinogens, such as infections from certain viruses or bacteria.

3.3 Classification of cancer

Cancer is classified into five kinds. These are some examples:

- **Carcinoma:** Organs and glands, these are lungs, breasts, pancreas and skin are affected by carcinoma. The most common type of cancer is carcinoma.
- **Sarcoma:** A cancer of soft or connective tissue affecting muscle, fat, bone, cartilage or blood vessels.
- **Melanoma:** Cancer can sometimes develop in the pigment-producing cells of our skin. Melanoma is the given to these cancers.
- **Lymphoma** is a cancer that affects lymphocytes, also known as white blood cells.
- **Leukemia** is a type of blood cancer.

3.4 Sign and symptoms

Anorexia is characterized by a loss of appetite and desire for food. It is a characteristic symptom of cancer patients. If the cancer develops or spreads, anorexia may manifest early on or later in the course of the illness. When given a cancer diagnosis, some people already struggle with anorexia. Anorexia affects the majority of cancer patients with advanced disease. The most frequent reason for malnutrition in cancer patients is anorexia. Weakness, weight loss, as well as the loss of both fat and muscle, are symptoms of cachexia. Patients with malignancies that interfere with eating and digesting frequently experience it. It may occur in cancer patients who consume well but do not retain fat and muscle owing to tumor development.

- Loss of appetite
- Difficulty swallowing
- Fatigue
- Skin changes
- Weight changes

Complications:

- Body pain
- Nausea or vomiting
- Brain and nervous system problems
- Respiratory distress

3.5 Cancer diagnosis and stages

Early cancer identification can significantly increase the chances of effective treatment and recovery of patient's. Doctors use a variety of various techniques and information from symptoms to diagnose cancer. Frequently, imaging techniques such as X-rays, CT scans, MRI scans, PET scans, and ultrasound scans are used to determine the location of a tumor and the organs it may affect. Endoscopy is a treatment which may use a narrow tube with a camera and illumination at one end to investigate the body for changes. It may also be performed by doctors.

When cancer is identified, tests are performed to determine the tumor's extent and whether it has migrated from its original location. This is known as the cancer-stage.

- Early stage (stage one or two) indicates that the cancer not yet progressed far.
- Advanced stage (stage three or four) indicates that it has spread farther.
- The most advanced stage is stage four.

3.6 Different Types of Cancer (As per Body Location)

Types of Cancers By Body Location	Types of Cancers By Body Location
Respiratory/Thoracic <ul style="list-style-type: none"> • Lung Cancer 	Breast : <ul style="list-style-type: none"> • Breast Cancer –Female & Men
Digestive/Gastrointestinal: <ul style="list-style-type: none"> • Bile Duct Cancer • Colon Cancer • Esophageal Cancer • Gallbladder Cancer • Liver Cancer • Pancreatic Cancer • Rectal Cancer • Small Intestine Cancer • Stomach (Gastric) Cancer 	Genitourinary: <ul style="list-style-type: none"> • Prostate Cancer • Kidney (Renal Cell) Cancer • Testicular Cancer • Bladder Cancer • Urethral Cancer Germ Cell : <ul style="list-style-type: none"> • Ovarian Germ cell Tumor
Gynecologic: <ul style="list-style-type: none"> • Cervical Cancer • Primary Peritoneal Cancer • Uterine Sarcoma • Vulvar Cancer • Vaginal Cancer 	Endocrine and Neuroendocrine: <ul style="list-style-type: none"> • Parathyroid Cancer • Pituitary and Thyroid Cancer Eye <ul style="list-style-type: none"> • Melanoma, Intraocular Retinoblastoma
Head and Neck : <ul style="list-style-type: none"> • Parathyroid Cancer • Lip and Oral Cavity Cancer • Nasopharyngeal Cancer • Hypo-pharyngeal Cancer • Laryngeal Cancer • Throat Cancer • Thyroid Cancer • Salivary Gland Cancer 	Musculoskeletal: <ul style="list-style-type: none"> • Bone Cancer • Ewing Sarcoma • Rhabdomyosarcoma, Childhood • Soft Tissue Sarcoma Unknown Primary: <ul style="list-style-type: none"> • CUP–Carcinoma of Unknown Primary
Hematologic/Blood: <ul style="list-style-type: none"> • Acute Myeloid Leukemia, Adult (AML) • Acute Lymphoblastic Leukemia(ALL) • Chronic Lymphocytic Leukemia (CLL) 	Skin: <ul style="list-style-type: none"> • Skin Cancer • T-Cell Lymphoma

- | | |
|--|--|
| <ul style="list-style-type: none">• Multiple Myeloma (MM) & Non-Hodgkin Lymphoma | |
|--|--|

3.7 Treatments

The form of cancer depends on the treatment of cancer, its stage, age, and status of health or any new characteristics of patient's. There is other option for treatment of cancer and most cases require both curative and palliative care. Cancer cells will keep growing until one of the following may occurs: (1) the malignant mass can be removed surgically ;(2) chemotherapy or another kind of cancer-specific medication, like hormone treatment ;(3) radiation therapy is given or (4) the cancer cells shrink and die or their own. Treatments were generally classified as one of the following:

- Chemotherapy
- Surgery
- Radiation
- Immunotherapy

3.8 Prevention

- Don't smoke
- Don't overexpose yourself to the sun
- Don't neglect your nutrition.
- Exercise regularly
- Keep weight in check
- Get checked for cancer regularly
- Certain contagions increase your threat of cancer Immunizations may help those contagions, including hepatitis B, which increases the threat of liver cancer, and mortal papillomavirus(HPV), which increases the threat of cervical cancer and other cancers.

3.9 Different types of chronic diseases

3.9.1 Diabetes

Diabetes is a condition characterized by elevated blood glucose, that also known as blood sugar level when high. We know that, our primary source of energy, blood sugar or glucose, is derived from food. Insulin refers, a hormone produced by the pancreas and facilitates the assimilation of glucose into our cells for energy use. Our bodies do not always produce or utilize insulin efficiently. The glucose in our bloodstream never reaches our cell.

Diabetes is three types that shown below:

- Type I Diabetes
- Type II Diabetes
- Gestational Diabetes

3.9.2 Type -I Diabetes

Type 1 diabetes is also called insulin-dependent diabetes. It was formerly known as juvenile-onset diabetes because it commonly begins in minors. Diabetes type 1 is an autoimmune disorder. It occurs when the pancreas is targeted by antibodies in the body. Due to damage, the organ is unable to produce insulin. This form of diabetes may be genetically determined. It may also result from problems with the insulin-producing cells in the pancreas. Diabetes may cause damage to small blood vessels in the eyes, the nerves and kidney, which can result in a variety of health complications. Patients with type I diabetes could be an increased risk of heart disease and stroke.

3.9.3 Type - II Diabetes

Type 2 diabetes was previously known as non-insulin-dependent diabetes or diabetes of adult onset. However, its prevalence among children and adolescents has increased, in part because more young people are overweight or obese. Patients with type 2 diabetes typically produce some insulin. However, it is either insufficient or the patient's body is not utilizing it effectively. Insulin resistance typically affects fat, liver, and muscle cells. Insulin resistance occurs when cells do not respond to insulin. Type 2 diabetes is frequently easier to manage than type 1 diabetes. Nonetheless, it has the potential to cause severe damage to your health, particularly to the delicate blood vessels in the kidneys, nerves, and eyes of patients. Diabetes type 2 also increases the risk of cardiovascular disease and stroke.

3.9.4 Gestational Diabetes

Insulin resistance is prevalent throughout pregnancy. If this condition develops into diabetes, it is known as gestational diabetes. Frequently, it is diagnosed in the middle or later phases of pregnancy. Gestational diabetes must be managed to protect the baby's growth and development, as the mother's blood glucose travel through the placenta to the embryo. Gestational diabetes poses a greater threat to the fetus than to the mother. A infant may gain an abnormal amount of weight prior to birth, experience difficulty inhaling after birth, and have an increased risk of obesity and diabetes later in life. Due to an unusually large infant, the mother may require a cesarean section or develop heart, kidney, nerve, or ocular problems.

Firstly, reviewing several report forms for a diabetic patient. These reports include:

- HbA1C
- Blood sugar
- Kidney disease
- Lipid profile
- Blood pressure
- Creatinine test.
- Height & weight

Complications of diabetes:

- Changing fluid levels, tissue edema, and blood vessel injury in the eyes all contribute to eye disease.
- Foot problems caused by nerve injury and diminished blood supply to the foot
- High blood sugar levels in saliva can cause gum disease and other dental problems because they promote the growth of harmful microorganisms in the mouth. Plaque is formed when microorganisms and food combine to form a porous, viscous layer. Plaque can also be caused by consuming sugary or carbohydrate-rich foods. Some types of plaque are associated with bad breath and periodontal disease. Causes of cavities and tooth degeneration are of a different nature.
- Heart disease and stroke can result from damage to a patient's blood vessels and nerves that regulate the heart and blood vessels.
- Kidney disease caused by damaged blood vessels in the kidneys. Diabetics frequently suffer from hypertension. This may also damage the kidneys.
- Damage to the nerves and the microscopic blood vessels that supply oxygen and nutrients to the nerves leads to nerve problems (diabetic neuropathy).
- Sexual and urinary dysfunction caused by nerve injury and diminished blood supply to the genitalia and bladder.
- Skin issues, including some that are brought on by decreased circulation and alterations to the microcirculation. Additionally, diabetics are more susceptible to infections, particularly cutaneous infections.

Treatment:

Diabetes treatment consists primarily of the following components:

- Diet (if possible, along with exercise)
- Hypoglycemic oral treatment
- Insulin therapy

Dietary Recommendation

- Every day, you must walk 40 to 45 minutes
- Diabetes should be monitored two to four times each week.
- The amount of habit and roti should be reduced, while the number of veggies should be increased.
- All kind of high fat dairy products, high fat animal proteins, egg yolk, liver, and other organ meats that all contain cholesterol. Patient's should not exceed 200mg of cholesterol per day.
- Reduce the quantity of heating oil by 5 milligrams.
- Your daily sodium intake should not exceed 2,300 milligrams. If you have excessive blood pressure, your physician may recommend lowering it.

3.9.5 Chronic kidney disease (CKD)

Chronic kidney disease (CKD) is a degenerative disorder that gradually reduces kidney function. Chronic renal disease refers to conditions which may damage a patient's kidneys and reduce their capacity to keep body healthy by filtering toxins from the circulation of blood. If renal disease progresses, blood wastes can accumulate to dangerous levels and cause illness.

When the kidneys begin to fail, one or more of the following symptoms may appear:

- Itching
- Cramps of muscle
- A lack of urine
- Nausea
- Trouble breathing

Diagnosis

- Albumin to creatinine ratio urine test
- Blood test for creatinine
- Glomerular Filtration Rate (GFR)

The following symptoms may appear if the kidneys cease functioning suddenly:

- Vomiting
- Fever rash
- Abdominal discomfort (belly)
- Back discomfort
- The two most frequent risk factors for CKD, or chronic kidney disease these are diabetes and blood pressure.

Treatment

Although there is no cure for CKD, medication can improve your symptoms and prevent the condition from getting worse. Treatment for chronic kidney disease often include medicines to prevent kidney damage as well as the management of any underlying diseases.

These remedies consist of:

- Medicine to lower blood pressure
- Medicine for decreasing cholesterol
- Medicines for diabetes
- Dialysis, a procedure that helps your kidneys with part of its filtering function
- Kidney transplantation is a procedure to replace failing kidneys with donor organs.

Dietary Recommendation

A rigorous diet can help to reduce this accumulation and its consequences. Hemodialysis Patients should keep track of and limit their intake of the following substances:

- Potassium
- Phosphate
- Sodium
- Fluids

3.9.6 Obesity

Obesity is a medical condition that develops when a person weighs excessively or has excessive body fat, both of which are risk factors for developing health problems. Frequently, dehydration contributes to obesity. If a person is obese or overweight, their risk of developing a variety of health conditions, such as metabolic syndrome, certain types of cancer, arthritis, and others, may increase. Consequently, metabolic syndrome is associated with hypertension, type 2 diabetes, and cardiovascular disease. Frequently, dehydration contributes to obesity.

- **Obesity Hormones:** There are two types of obesity hormones.
- **Leptin hormone:** Leptin is a long-term safety hormone that regulates energy balance and is secreted by fat cells in adipose tissue.
- **Ghrelin hormone:** Increased hunger secreted by stomach lining.

Main Causes: Obesity is caused by

- High intake of calorie-rich meals, as well as an intake of food that exceeds output.
- High intake of fat-rich and fatty foods;
- Abrupt cessation of exercise, running, dancing, and outdoor games
- Family background

Dietary Recommendation:

Carbohydrate

- Carbohydrates, fruits, and vegetables are examples of low GI foods, while high food include fish, oil, meat, green leafy vegetables, lentils and milk.
- Include whole grain bread, complex carbs, and brown rice, enriched in fiber meals, fruits and potatoes.
- Sugar, refined carb, flour, and rice should be avoided.

Protein

- Low fat milk and also yogurt, fish, white meat, egg white, soybeans, soymilk should be taken instead of full fat milk

Fat

- Olive oil, soybean oil, sunflower oil and margarine must be consumed
- Healthy fats should be consumed, whereas bad fats must be avoided.
- Ghee, butter and mayonnaise must not be consumed.

CHAPTER 4

Nutritional Management

4.1 Nutritional Management of Cancer with Chronic Disease

Good nutrition is especially essential after a cancer diagnosis because both the disease and its treatments can alter a person's eating habits. In addition, they can affect how the body tolerates certain substances and uses nutrients. During cancer treatment, patients may need to alter their diet in order to regain vigor and resist the effects of the disease and its treatment. The nutritional needs of cancer patients differ from person to person. The cancer care unit can assist in identifying a patient's nutritional goals and developing a plan to achieve them. Eating well involves consuming a diversity of foods to provide the body with the nutrients it needs to fight cancer. These nutrients consist of proteins, lipids, carbs, water, vitamins, and minerals.

4.2 Nutritional Management Tool for Cancer with Chronic Disease:

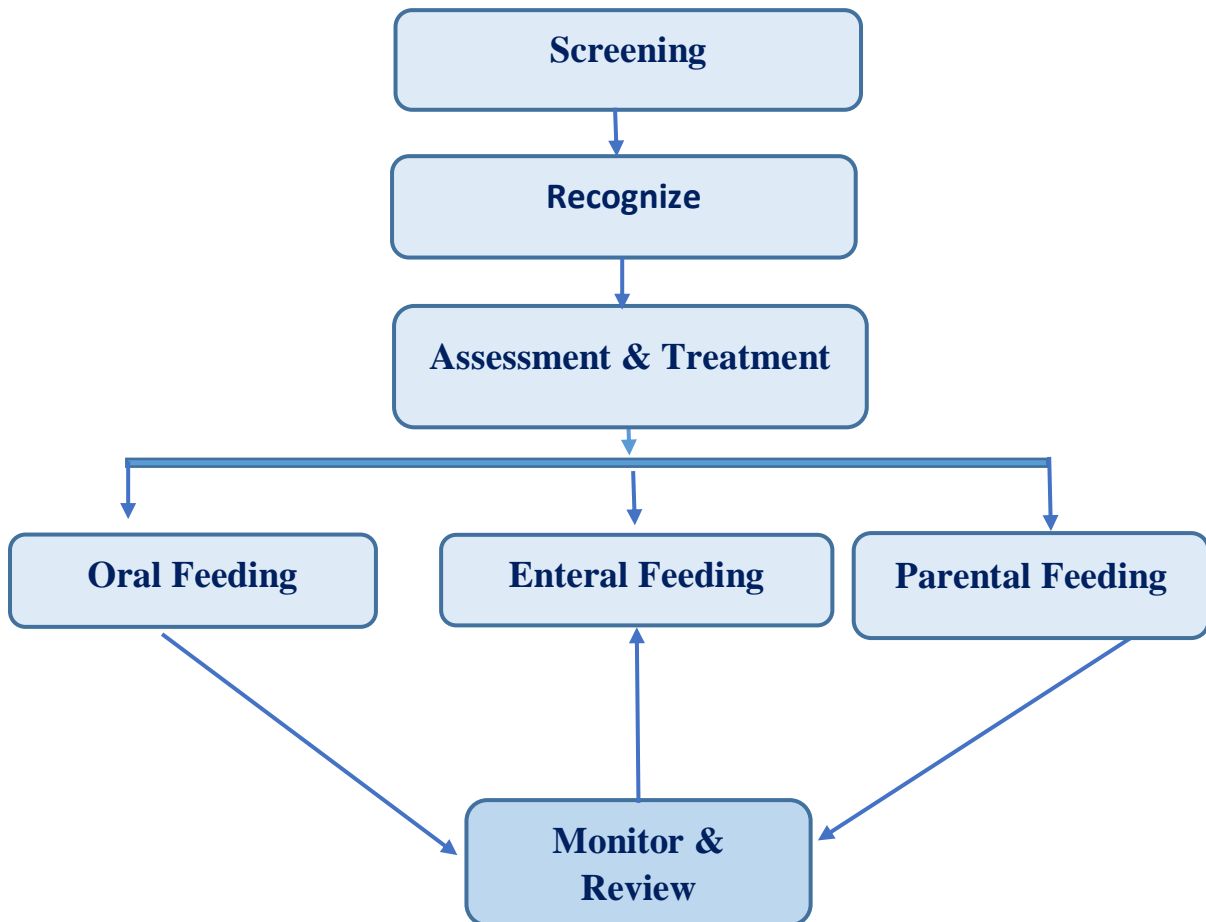


Figure 4.1: Nutritional Management Tool

4.3 Hospital Diet

Diets in hospitals must meet the dietary requirements of a variety of patient populations. Recognize the extremes of nutritional needs within a hospital setting. One set of requirements is for 'nutritionally fragile' individuals, who have poor appetites, eat little, and are malnourished. The other set of nutrient standards corresponds to the nutritional needs of patients who are considered "nutritionally well." A meal that can be satisfied the nutritional requirements of hospitalized patients must also include foods, patients will appreciate and find appealing.

4.3.1 Hospital patient's nutritional diet requirements: The essential hospital cuisine can meet the dietary standards outlined in:

- Daily energy intake
- Daily protein intake
- Weekly RNI for micronutrients (vitamins and minerals)

Hospital inpatient diets are prepared based on diagnostic findings obtained from each patient's file. Secondary data is used for patients who are afflicted with a sickness. Individual dietary guidance for patients should be standard practice since else the patient will be unable to follow the proper diet.

4.3.2 Solid or Normal Diet

- The regular diet is also referred to as the normal diet. It aims to give patients a well-balanced diet while also ensuring appropriate intake for individuals who do not require dietary changes.
- It requires a broad range of foods and an adequate calorie intake, as recommended by the Dietary Guidelines and the Food Guide Pyramid.

4.3.3 Clear Liquid Diet

- Includes transparent liquids with minimal residue, such as juices without sediment and bouillon.
- Often used as the initial stage in resuming oral nutrition after the surgery of patients or abdominal procedures.
- It can also be used to restore fluids and electrolytes in hospitalized patients suffering from severe diarrhea; however, because it lacks adequate calories and minerals, it should not be consumed for a lengthy period of time.

4.3.4 Soft Diet

- Soft diet is used when swallowing and chewing complications occur.
- Softens the diet's normal consistency.
- Specific raw fruits and green vegetables, and additionally chopped or ground meats are included.
- Soft diet is targeted for patients with oral health issues, loss of teeth or who have dysphasia.

4.3.5 Diabetes or calorie-restricted diet

- These diets limit the quantity of calories, carbs, protein, and fat consumed in order to satisfy nutritional demands, manage blood sugar levels, and lose weight.
- The most popular calorie amounts are: 1,200, 1,500, 1,800, and 2,000.

4.3.6 Tube feedings (NG Feed)

A nasogastric tube (NG tube) is a unique conduit that delivers sustenance and medications through the airway to the stomach. It can be used for all feedings or to supplement a person's caloric intake.

- Tube feedings are administered to patients who cannot ingest adequate food or fluids orally.
- Daily, 6 to 8 feedings every 2 to 3 hours. Calorie not more 1000-1200 kcal.
- Nutritional requirements are met in whole or in part through tube feedings.
- Some individuals may be able to consume food orally if they can securely ingest and are undergoing weaning from tube nutrition.

4.4 Recommended Food Menu at AMCGH:



Figure 4.2: Breakfast



Figure 4.3: Lunch



Figure 4.4: Dinner

CHAPTER 5

Case study

5.1 Case Study 01

Case Study: 01

Name of the Hospital: Ahsania Mission
Cancer General Hospital
Cabin No: 710/C
Name: Md Moukbul Hossain
Gender: Male
Age: 60 yrs.
Weight 73 kg, Height: 178 cm,
BMI: 23.0 kg/m²
Address: Dhaka
Admission Date: 26.02.2023
Reason of Admission:
Abdominal pain in perianal region
Constipation
Diagnosis: Ca left lung e- Lt sided
Diet: Normal

Biochemical Report:
Calcium: 8.80 mg/dl
SGPT: 16 U/L

Electrolyte:
Sodium: 134 mmol/L
Potassium: 3.9 mmol/L
Cl⁻ : 101 mmol/L
HCO₃: 27 mmol/L

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হাসপাতালে ভর্তি রোগীর খাদ্য তালিকা

রোগীর নাম : মোঃ মুকবুল হোসেন
 বয়স : ৬০ বছর
 উচ্চতা : সে.মি.
 খাদ্যের পরিবর্তন :

লিঙ্গ : ♂
 খাদ্য ক্যালরি :
 অন্যান্য :
 আধিকার : Ca left lung
Shuns

সকালের নাম	১. আটার কটি/ পাউরুটি/ মুড়ি	২. চা + বিস্কুট	৩. বিস্কুট	৪. সাত/ সুপ	৫. ডাল	৬. মাছ/ মাছ/ ডিম	৭. সবজি/ শাক/ ভর্তা	৮. ফল	৯. গরু
Breakfast	১. আটার কটি/ পাউরুটি/ মুড়ি	২. চা + বিস্কুট	৩. বিস্কুট	৪. সাত/ সুপ	৫. ডাল	৬. মাছ/ মাছ/ ডিম	৭. সবজি/ শাক/ ভর্তা	৮. ফল	৯. গরু
সকাল ১১ টার নাম	১. আটার কটি/ পাউরুটি/ মুড়ি	২. চা + বিস্কুট	৩. বিস্কুট	৪. সাত/ সুপ	৫. ডাল	৬. মাছ/ মাছ/ ডিম	৭. সবজি/ শাক/ ভর্তা	৮. ফল	৯. গরু
Lunch	১. আটার কটি/ পাউরুটি/ মুড়ি	২. চা + বিস্কুট	৩. বিস্কুট	৪. সাত/ সুপ	৫. ডাল	৬. মাছ/ মাছ/ ডিম	৭. সবজি/ শাক/ ভর্তা	৮. ফল	৯. গরু
বিকাল ৫ টার নাম	১. আটার কটি/ পাউরুটি/ মুড়ি	২. চা + বিস্কুট	৩. বিস্কুট	৪. সাত/ সুপ	৫. ডাল	৬. মাছ/ মাছ/ ডিম	৭. সবজি/ শাক/ ভর্তা	৮. ফল	৯. গরু
Dinner	১. আটার কটি/ পাউরুটি/ মুড়ি	২. চা + বিস্কুট	৩. বিস্কুট	৪. সাত/ সুপ	৫. ডাল	৬. মাছ/ মাছ/ ডিম	৭. সবজি/ শাক/ ভর্তা	৮. ফল	৯. গরু

বিশেষ নির্দেশনা :

১) ডিফারেন্সিয়াল - ২০০ মিলি + ২০০ মিলি
 ২) - ২০০ মিলি + ২০০ মিলি + ২০০ মিলি
 SHOT-ON REDMISSION + ২০০ মিলি

২৭.০২.২৩
 ফারজানা ইসলাম শাম্পা
 Nutritionist / Dietician
 Farjana Islam Shampa
 B.Sc & M.Sc (Food & Nutrition)

Figure 5.1: Diet chart

5.2 Case Study 02

Case Study: 02

Name of the Hospital: Ahsania Mission
Cancer General Hospital
Cabin No: 715/C

Name: Md Sultan Uddin Raj
Gender: Male

Age: 58 yrs.
Weight 77 kg, Height: 159 cm,
BMI: 30.0 kg/m²

Address: Dhaka
Admission Date: 12.03.2023

Reason of Admission:
Restless, respiratory distress, abdominal pain,
oral ulcer

Diagnosis: Ca Gall bladder (Post OP, CT)

Diet: Soft diet e Egg white 3-4/day

Restricted: Total fluid not more than 1L/day

Biochemical Report:

Electrolyte:

Sodium: 122 mmol/L
Potassium: 4.2 mmol/L
Cl⁻: 90 mmol/L
HCO₃⁻: 21.0 mmol/L

375

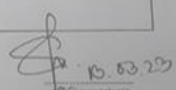
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হাসপাতালে ভর্তি রোগীর খাদ্য তালিকা

রোগীর নাম : সুলতান উদ্দিন পিতা : সুলতান
বয়স : ৫৮ বান্ধা কাগজের নং :
লিঙ্গ : মহিলা অধ্যয়ন : ৩০
কক্ষ : ৩৩৩ ডাক্তারের নাম : ডা. গা. গা.
খাদ্যের পরিকল্পনা : soft diet

ভোজন	খাদ্য	পরিমাণ	সিদ্ধি
Breakfast সকালের খাদ্য <u>৯:৩০</u>	১. মাছের মাটি/পনির/ডিম ২. আলু/শিম/সেবে ৩. আলু/শিম/সেবে ৪. আলু/শিম/সেবে ৫. আলু/শিম/সেবে	<u>১০০</u>	সিদ্ধ সিদ্ধ সিদ্ধ সিদ্ধ সিদ্ধ
সকাল ১১ টার খাদ্য	১. দুধ + ফ্রুট ২. আলু/শিম/সেবে ৩. আলু/শিম/সেবে ৪. আলু/শিম/সেবে	<u>১০০</u>	সিদ্ধ সিদ্ধ সিদ্ধ সিদ্ধ
Lunch দুপুরের খাদ্য <u>১:৩০</u>	১. মাছের মাটি/পনির/ডিম ২. আলু/শিম/সেবে ৩. আলু/শিম/সেবে ৪. আলু/শিম/সেবে ৫. আলু/শিম/সেবে	<u>১০০</u>	সিদ্ধ সিদ্ধ সিদ্ধ সিদ্ধ সিদ্ধ
সন্ধ্যা ৫ টার খাদ্য	১. দুধ/আম/সেবে ২. আলু/শিম/সেবে ৩. আলু/শিম/সেবে	<u>১০০</u>	সিদ্ধ সিদ্ধ সিদ্ধ
Dinner রাতের খাদ্য <u>৮:৩০</u>	১. মাছের মাটি ২. আলু/শিম/সেবে ৩. আলু/শিম/সেবে ৪. আলু/শিম/সেবে	<u>১০০</u>	সিদ্ধ সিদ্ধ সিদ্ধ সিদ্ধ

সিদ্ধি পরিমাণ :


 Nutritionalist / Dietician
 Farjana Islam Champa
 B.Sc & M.Sc (Food & Nutrition)
 Sr. Dietitian

SHOT ON REDMI 7
AI DUAL CAMERA

Figure 5.2: Diet chart

5.3 Case Study 03

Case Study: 03

Name of the Hospital: Ahsania Mission Cancer General Hospital

Cabin No: 711/C

Name: Md Moksed Ali

Gender: Male

Age: 66 yrs.

Weight 68 kg, Height: 164 cm,

BMI: 25.0 kg/m²

Address: Naogaon

Admission Date: 11.03.2023

Reason of Admission:

Restlessness since morning, loose motion, abdominal fullness, anorexia

Diagnosis: Ca Pancrease with DM, HTN

Diet: Diabetic Diet (NG feeding 150 ML +50 ml water every 3 hourly starting from 6 AM to 12 AM)

Biochemical Report:

Bilirubin (Total): 1.00 mg/dl

S.Magnesium: 1.80 mg/dl

Alkaline phos: 70 u/L

Uric Acid: 2.0 mg/dl

Calcium: 7.50 mg/dl

SGPT: 43 U/L

Albumin: 2.70 g/dl

Creatinine: 0.88 mg/dl

Electrolyte:

Sodium: 132 mmol/L

Potassium: 2.7 mmol/L

Cl⁻: 99.0 mmol/L

HCO₃⁻: 23.0 mmol/L

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হাসপাতালে ভর্তি রোগীর এনজি টিউবের খাদ্য তালিকা

রোগী নং: তারিখ: 13.03.23
রোগীর নাম: মোকসেদ আলি বেচ নং:
বয়স: পিঙ্গ:
ওজন: কেজি উচ্চতা: ডি.এম.ই.এ. সুলতান
খাদ্যের পরিবর্তন: NG Feeding (150ml food + 50ml water) 3hourly জটিলতা: DM, HTN, others.

সময়	খাবার	নির্দেশনা
৬-৬-৩০	পেন্টানসি DM ৩ স্পোন + 150ml অর্ডার	
৯-৯-৩০	১/২ - ১/২ - ১/২ সিদ্ধি - ১/২ সিদ্ধি - ১/২	150ml food + 50ml water
১২-১২-৩০	১/২	150ml
৩-৩-৩০	১/২ - ১/২ - ১/২ সিদ্ধি - ১/২ সিদ্ধি - ১/২	150ml food + 50 ml water
৬-৬-৩০	১/২	150ml
৯-৯-৩০	১/২ - ১/২ - ১/২ সিদ্ধি - ১/২ সিদ্ধি - ১/২	150 ml food + 50ml water
১২-১২-৩০	পেন্টানসি DM ৩ স্পোন + 150 ml অর্ডার	

বিশেষ নির্দেশনা:
স্বাদ - ১/২ - ১/২ - ১/২
সিদ্ধি - ১/২
স্বাদ - ১/২ - ১/২ - ১/২
সিদ্ধি - ১/২

Fahana Islam Shampa
B.Sc & M.Phil (Food & Nutrition)
Sr. Lecturer
Ahsania Mission Cancer & General Hospital
13.03.23
সুইকেনার স্বাক্ষর
Nutritionist / Dietician

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Figure 5.3: Diet chart

CHAPTER 6

Conclusion

6.1 Conclusion

During my internship at AMCGH General Hospital, I learnt about many diseases, their management, and dietary information. Cancer with diabetes, CKD, obesity, enteral and parenteral nutrition, carbohydrate, protein, nutrition, and health are the illnesses. Food choices have an essential influence in the prevention and treatment of many disorders. As a result, in addition to their prescription, patients must follow basic dietary guidelines in order to avoid and control these disorders. However this is not an indication that people are required to consume the same things every day. By identifying a substitute food item from their usual healthy food, individuals may add variety to their eating habits or nutritional intake.

My internship program at Ahsania Mission Cancer and General facility (AMCGH) lasted four months (60 days), and I learned a lot about this facility. This training will assist me in broadening my knowledge as well as learning observation strategies for indoor patients.

I had a fantastic internship experience and can now firmly say that my grasp of this nutrition sector has substantially increased.