CHAPTER 1

INTRODUCTION

1.1 Background

Diabetes Mellitus (DM) is a group of metabolic diseases characterized by elevated levels of glucose in the blood or hyperglycemia due to defects in insulin secretion and inadequate insulin action resulting in death or disability, which greatly affects the life quality of DM patients (Rizki, 2020). DM is divided into 2 types they are type I and II. Individuals who suffer from type I diabetes require an external supply of insulin (exogenous insulin) like injection to sustain life. Whereas individuals with type II diabetes are insulin resistant, the condition in which the body or body tissues do not respond to the action of insulin (Umar, V. Rottie and Lolong, 2017).

One of the DM complications is gangrene. Gangrene is death tissue caused by blood vessels (ischemic necrosis) due to *atherothrombotic microemboli*, peripheral vascular disease that accompanies DM patients. Gangrene most commonly affects the upper and lower extremities including the fingers and toes, but it can also affect muscles and internal organs. It is also caused by a condition that begun with tissue hypoxia where oxygen in the tissue reduced, this will affect the vascular and cellular activity of the tissue which resulting in damage tissue (Wahyuni, Hasneli, and Ernawaty, 2018).

People with gangrene can cause a rejection sense of body changes, do not accept the changes occur, negative perceptions arise in their bodies

and express fear, make patients feel physically and psychologically stressed with their condition so that negative body image disorders appear (Muammar, 2018).

According to Pranita (2021), The International Diabetes Federation (IDF) reported that 463 million adults in the world have diabetes with a global prevalence of 9.3%. According to Indonesia Health Ministry (2020), Indonesia is the 7th rank among 10 countries with 10.7 million sufferers. Indonesia is the only Southeast Asian country on the list. The World Health Organization (WHO) predicted an increase in the number of people with DM in Indonesia by around 21.3 million in 2030, it makes Indonesia in the 4th rank. The prevalence of diabetes mellitus in Indonesia in 2018 was 8.5%. In East Java the prevalence of people with DM is 6.8% (Suwinawati Eni, Ardiani Hanifah, 2020). In 2019 people with DM reached 41,964 people in Banyuwangi regency (Dinas Kesehatan Kabupaten Banyuwangi, 2020). The number of DM patients at the Blambangan Regional Public Hospital in Banyuwangi is still high, in 2020 DM patients reached 162, the prevalence of DM patients with gangrene was 76 people. In 2021 (January – September) there were 61 sufferers (Internal medicine room at Blambangan Hospital, Banyuwangi).

DM is a disease caused by a relative or absolute excess of insulin. Insulin deficiency can occur in 3 ways including the destruction of pancreatic B cells due to external influences (viruses, chemicals, etc.). Decreased glucose receptors in the pancreas gland causes damage to insulin receptors in peripheral tissues (Noor Fatimah, 2017). The function

of insulin hormone is to regulate glucose levels in the blood. Disruption of insulin production and function causes in an increase in blood sugar levels (hyperglycemia) so that it will increase blood pressure. Prolonged hyperglycemia will cause arteriosclerosis, namely the accumulation of fat, cholesterol, and other substances in the arteries, thickening of the basement membrane, and changes in peripheral nerves that block blood flow. This will facilitate the occurrence of gangrene (Rizki, 2020).

DM is also called the silent killer because it can affect all organs of the body and cause various kinds of complaints. Diseases that are often caused include impaired eye vision, cataracts, heart disease, kidney disease, sexual impotence, wounds that are difficult to heal and develop or commonly called gangrene, lung infections, blood vessel disorders, stroke, and so on. In DM patients who have undergone limb amputation due to rot. The most common symptoms of DM are polyphagia (a lot of eating), polydipsia (a lot of drinking), polyuria (frequent urination at night), increased appetite but weight loss rapidly up to 5-10 kg within 2-4 weeks, and tired easily (Noor Fatimah, 2017). Gangrene is caused by the narrowing of the blood vessels in the legs and feet (Peripheral Artery Disease) which gives symptoms of thick feet, wounds that are difficult to heal, blackish-red, and smells bad, it could even end up being amputated so that the patient has body image disorders (Muammar, 2018). One of the problems often arise in people with DM is the image of the patient associated (PPNI, 2017).

Efforts to manage body image disorders in gangrenous DM patients as nurses by promotes provide information about diabetes mellitus experienced and do prevention by controlling sugar levels, eating patterns according to patient needs, exercising regularly. Preventive is doing self-care to keep the body clean to avoid injury. Curative is guiding to prepare patients related to body image changes that have been predicted, helping patients in improving their appearance. Rehabilitation is by checking blood sugar levels, dieting according to needs, and exercising regularly (Ambarwati, 2017).

According to Pokja SIKI DPP PPNI Team (2018) the treatment for patients with body image disorders are by identifying body image expectations by developmental stage, identification of culture, religion, gender, and age body image disorders, identifying changes in body image result in social isolation, monitoring the frequency of self-critical statements, monitoring whether the patient can see the changed body parts, discussing body changes and functions, the difference between physical appearance and self-esteem, the changes due to puberty, pregnancy, and aging, stressful conditions that affect body image (e.g. wounds, illness, surgery), how to develop realistic body image expectations, the patient's and family's perception of changes in body image, explaining to family about body image change treatment, suggesting self-image of body image, the use of assistive devices (e.g. clothing, wigs, cosmetics), the participation in support groups (e.g. peer groups), training your body

functions, practicing improving your appearance (e.g. dressing up), and expressing self-ability to other people and groups.

Dry gangrene can be treated with bed rest and controlling blood glucose levels with diet, insulin, or anti-diabetic drugs. Amputation is also performed to prevent the spread of gangrene but it must be with very clear indications. Improve circulation to treat or prevent angiopathy by administering antiplatelet aggregation drugs such as aspirin, dipyridamole, or pentoxyvillin. Treatment of wet gangrene can also be done using bed rest and control of blood glucose levels with diet, insulin, or oral anti-diabetics, debridement is carried out, compress with warm water, not hot or cold water, give “topical antibiotics” and culture-appropriate systemic antibiotics or with broad-spectrum antibiotics, for neuropathy give pyridoxine (B6 vitamine) or other neurotrophic. Diabetics must prevent angiopathy, antiplatelet aggregation drugs such as aspirin, dipyridamole or pentoxyvillin can be given to prevent angiopathy, surgical action, namely immediate amputation, debridement and drainage (Erin, 2017).

From the description above, the researcher is interested in conducting a study entitled The Nursing Care for Diabetes Mellitus (Gangrene) Patients with Body Image Disorders Nursing Problems at Blambangan Regional Public Hospital Banyuwangi 2021.

1.2 Limitation of Problem

The problem in this case study was limited to nursing care in diabetes mellitus (gangrene) patients with body image disorders nursing problem in Blambangan Regional Public Hospital Banyuwangi 2021.

1.3 Formulation of the Problem

How is the Nursing Care for Diabetes Mellitus (Gangrene) Patients with Body Image Disorders Nursing Problem at Blambangan Regional Public Hospital Banyuwangi 2021?

1.4 The Objective of the Study

1.4.1 General-purpose

To implementat the Nursing Care for Diabetes Mellitus (Gangrene) Patients with Body Image Disorders Nursing Problems at Blambangan Regional Public Hospital Banyuwangi 2021.

1.4.2 Specific Purpose

1. To assess the Implementation of Nursing Care in Diabetes Mellitus (Gangrene) Patients with Body Image Disorders Nursing Problems at Blambangan Regional Public Hospital Banyuwangi 2021.
2. To identify the Nursing Diagnosis in Diabetes Mellitus (Gangrene) Patients with Body Image Disorders Nursing Problem at Blambangan Regional Public Hospital Banyuwangi 2021.
3. To compile Nursing Planning for Diabetes Mellitus (Gangrene) Patients with Body Image Disorders Nursing Problem at Blambangan Regional Public Hospital Banyuwangi 2021.
4. To implement the Nursing Actions in Diabetes Mellitus (Gangrene) Patients with Body Image Disorders Nursing

Problem at Blambangan Regional Public Hospital Banyuwangi 2021.

5. To evaluate the Implementation of nursing care for Diabetes Mellitus (Gangrene) Patients with Body Image Disorders Nursing Problem at Blambangan Regional Public Hospital Banyuwangi 2021.

1.5 Expected Result

1.5.1 Theoretical

This case study was expected to provide information about diabetes mellitus (gangrene) patients with body image disorders nursing problem so that they can be developed and used as the basis of knowledge in carrying out nursing care.

1.5.2 Practical

1. For Nurses

   This case study was expected to provide additional knowledge for the nursing profession in terms of assessing diabetes mellitus (gangrene) patients with body image disorders nursing problem and determining appropriate nursing care.

2. For Hospitals

   This case study can be used as reference material for Blambangan Regional Public Hospital in carrying out nursing actions and establishing SOP for diabetes mellitus (gangrene) patients with body image disorders nursing problem.

3. For Educational Institutions

   Improving the quality of teaching and learning process, especially Medical-Surgical Care II courses to produce professional nurses.

4. For Clients and Clients' Families

   The results of this study were expected that patients receive professional nursing care so that diabetics get optimal health and families can care for them to prevent complications caused by diabetes mellitus.

CHAPTER 2

LITERATURE REVIEW

2.1 Diabetes Mellitus Concept

2.1.1 Definition of Diabetes Mellitus

DM comes from the Greek diabaínein, "translucent" or "shower", and from the Latin Mellitus, "sweet taste" generally known as diabetes. Diabetes is a disease marked with hyperglycemia or an increase in blood sugar levels that is continuous and variable, especially after eating. The Greek and Latin describe diabetes correctly because water passes through the body of a diabetic as if it were flowing from the mouth through the urinary tract and straight out of the body. The urine of diabetics tastes sweet because it contains sugar. One of the tests for diabetes is to pour the patient's urine near the anthill, if the insects swarm the urine, this indicates the presence of sugar (Nugroho, 2015).

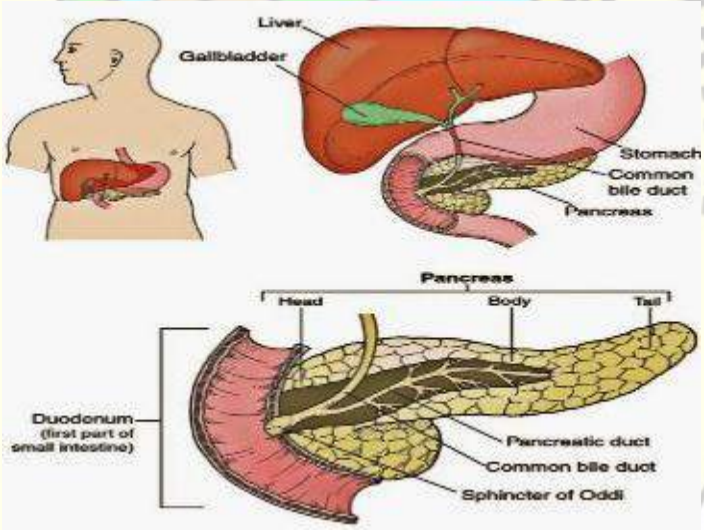
Diabetes Mellitus (DM) is a metabolic disease characterized by an increase in a person's blood sugar (glucose) levels in the body that exceeds normal limits or is called hyperglycemia. High glucose levels are excreted through urine, so urine contains sugar or sweet so that people often call it diabetes. Diabetes can eventually lead to complications both acute and chronic (Alfarobi, 2019).

Diabetes Mellitus (DM) is a disease characterized by blood glucose levels exceeding normal limits equal to or more than 200 mg/dl, and fasting blood sugar levels above or equal to 126 mg/dl

(Hestiana, 2017). Diabetes Mellitus (DM) is a group of diseases characterized by an increase in blood glucose levels due to abnormalities in insulin function and action that result in death or a very important disturbance to the life quality of diabetics (Rizki, 2020).

From some of the definitions above, it can be concluded that Diabetes Mellitus is a metabolic disease characterized by high glucose levels in the blood or called hyperglycemia. This disease occurs due to abnormalities in insulin secretion and inadequate insulin action.

2.1.2 Anatomy Physiology



Picture 1 Anatomy of Pancreas (Evelyn and Pearce, 2013)

The pancreas (Picture 2.1) is a clustered compound gland; its structure is very similar to the salivary glands. The lenghth is about 15 cm from the duodenum to the spleen, and the pancreas consists of three parts:

1. Head of Pancreas

The head is the largest located on the right side of the abdominal cavity in the groove of the duodenum and practically encircles it.

2. Pancreatic Body

It is the main part of the organ which is located behind the stomach and in front of the first lumbar vertebra.

3. Tail Pancreas

It is the pointed part on the left which touches the spleen. Pancreatic tissue consists of lobules of secretory which are arranged around the small ducts. This duct starts from the junction of the small ducts of the lobules located in the pancreas tail and runs through the body from left to right. These small ducts receive ducts from other lobules and then join to form the main duct, the *ductus of wirsung*.

The function of the pancreas can be called a dual organ which has two functions. The exocrine function is carried out by the secretory cells of the lobules, which form pancreatic juice and contain enzymes and electrolytes. A digestive fluid that passes through the small excretory tract and finally collects two ducts, namely the main duct of Wirsungi and another namely the Santorini duct which enters the duodenum. The main tract joins the bile duct at the ampulla of Vater.

The content of enzymes in pancreas contains three types of digestive enzymes that work on three types of food:

1. Amylase digests carbon hydrate: it is stronger than ptyalin, acts on raw and cooked starch, and changed it into disaccharides.
2. Lipase is an enzyme that breaks down fat into glycerin and fatty acids. It is most powerful when working with bile.
3. Trypsin digests protein. Trypsin is produced by the trypsinogen enzyme which is found in pancreatic juice and changed into the digestive enzyme trypsin by one of the enteric enzymes, namely enter kinase. The work of tips is stronger than the enzyme pepsin which is derived from gastric juice. Trypsin degrades proteins and peptones into polypeptides.

The pancreas is crossed by the vaguest and a few minutes after receiving food, pancreatic juice flow increases. Then, after gastric contents enter the duodenum, two hormones, serum, and pancreozymins are formed in the duodenal mucosa and trigger pancreatic outflow.

Endocrine function scattered between the alveoli of the pancreas are small clusters of epithelial cells which are clear and real. These groups are the islets or Island of Langerhans which together shape the endocrine organs, these endocrine tissues produce hormones such as insulin, glucagon, and somatostatin (Evelyn and Pearce, 2013).

2.1.3 Classification of Diabetes Mellitus

According to Kurniawaty (2017), Diabetes mellitus is classified into the following:

1. Diabetes Mellitus Type 1

   Diabetes type 1 occurs due to the destruction of pancreatic β cells, generally leading to absolute insulin deficiency due to an immunologic or idiopathic process.

2. Diabetes Mellitus Type 2

   The specific cause of this diabetes type is still unknown, but it occurs due to impaired insulin action and insulin secretion which can be predominantly impaired insulin secretion or predominantly insulin resistance.

3. Other Types of Diabetes Mellitus

   Other types of diabetes mellitus are caused by genetic defects in beta cell function, in insulin action, diseases of the exocrine pancreas, endocrinopathy, due to drugs or chemicals, infections, rare immunologic causes, and other genetic syndromes associated with DM.

4. Gestational Diabetes Mellitus

   Gestational diabetes mellitus is diabetes that occurs in pregnancy caused by insulin resistance due to hormones such as prolactin, progesterone, estradiol, and placental hormones.

2.1.4 Etiology of Diabetes Mellitus

The human body converts food into glucose which is the main energy supply for the body. Insulin from the beta cells of the pancreas is necessary to bring glucose into the body cells where the glucose is used for cellular metabolism. Diabetes Mellitus occurs when beta cells cannot produce insulin (Type 1 Diabetes Mellitus) or produce insufficient insulin (Type 2 Diabetes Mellitus). As a result, glucose is not able to enter the cells but remains in the blood. High levels of glucose in the blood are a signal for the patient to increase fluid intake to push glucose out of the body in the urine (polyuria). The patient becomes thirsty and urination increases or commonly called (polydipsia). Cells in the body become deficient in energy due to deficiency of glucose and give to signal the patient to eat, making the patient hungry (polyphagia) (Nursafitri, 2019).

2.1.5 Clinical Manifestations of Diabetes Mellitus

Clinical syndromes that are often found in diabetes mellitus are polyuria, polydipsia, and polyphagia, accompanied by increased blood glucose levels or hyperglycemia.

1. The Amount of Urine Excreted is Very Large (Polyuria)

   Under normal circumstances about 50% of the glucose consumed is completely metabolized into CO2 and water, 5% is converted to glycogen and about 30-40% is converted to fat. All of these processes are disrupted in DM, glucose cannot enter cells until energy is mainly obtained from protein and fat

metabolism. Hyperglycemia is relatively harmless, except when the levels are so high that the blood becomes hyper osmotic to intracellular fluid. The dangerous is the resulting glycosuria because glucose is an osmotic diuretic, so that diuresis increases with the loss of various electrolytes (polyuria). This is what causes the amount of urine to be excreted a lot (polyuria).

2. Often Feel Thirsty (Polydipsia)

The occurrence of dehydration and electrolytes in DM patients results in hyperosmolar non-ketotic hyperglycemic coma. Due to dehydration, the body tries to overcome it by drinking a lot (polydipsia).

3. Often Eating or Eating a Lot (Polyphagia)

Polyphagia also arises because of the stimulation of the appetite center in the hypothalamus due to the lack of glucose utilization in cells, tissues, and the liver. So that the energy formed is reduced, DM sufferers become weak, therefore, the body tries to increase food intake by often causing hunger so that a feeling of always want to eat arises.

2.1.6 Pathophysiology Diabetes Mellitus

According to Wamese (2017) most of the pathological features of DM can be attributed to one of the following main effects of insulin deficiency: Reduced the use of glucose by the body cells increasing the concentration of glucose in the blood reaching 300-

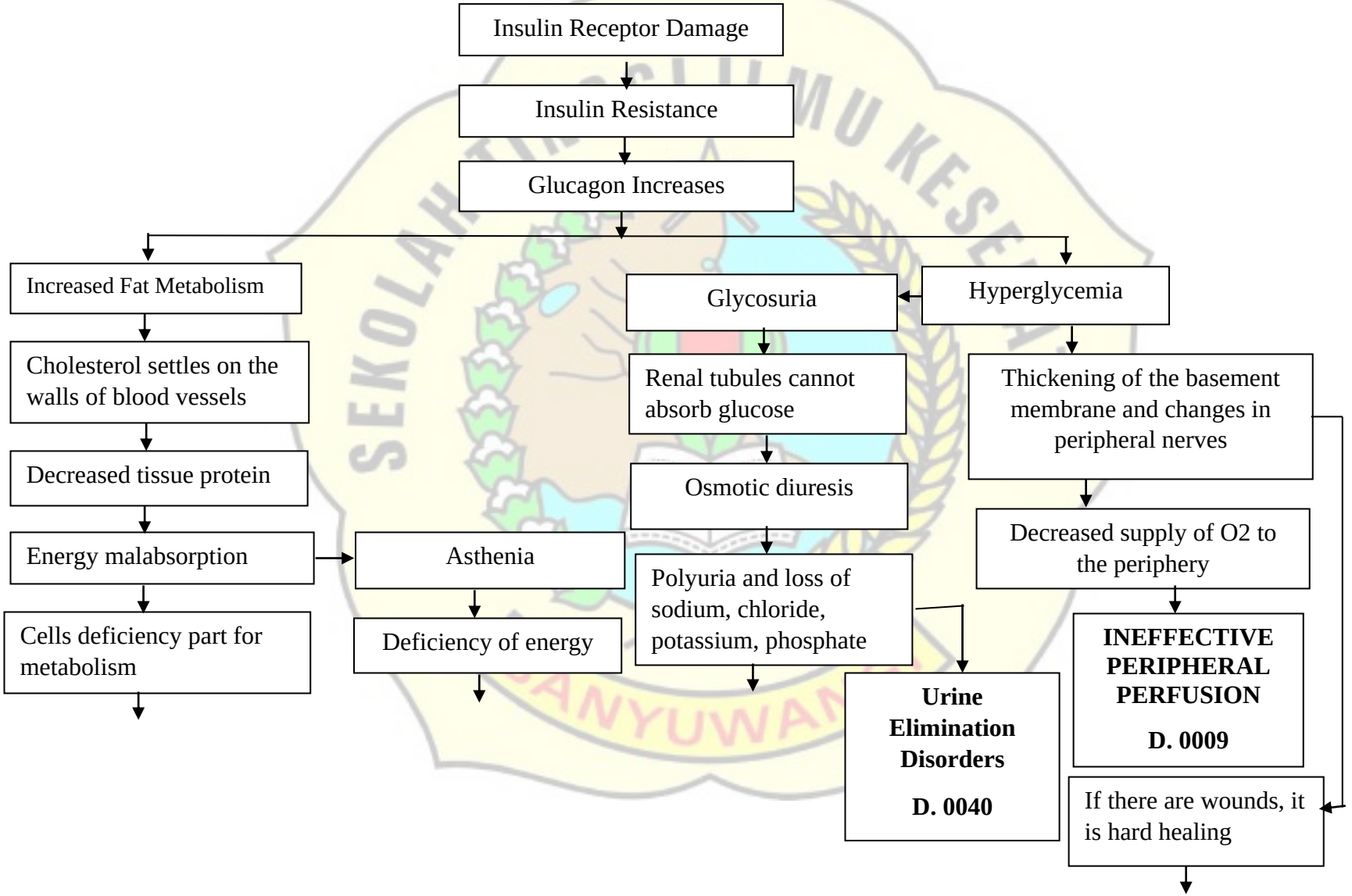
1200 mg/dl. Increased mobilization of fat from fat storage areas that causes abnormal fat metabolism is in line with cholesterol deposits in blood vessel walls as a result of reduced protein in body tissues. Patients with insulin deficiency cannot maintain normal fasting plasma glucose levels or tolerance after meals. Severe hyperglycemia that exceeds the normal renal threshold (blood glucose concentration of 160-180 mg/ml) will cause glycosuria because the renal tubules cannot reabsorb all the glucose. This glycosuria can cause an osmotic diuresis that causes polyuria with loss of sodium, chloride, potassium, and phosphate. This polyuria results in dehydration and polydipsia. The fffect of the glucose that out with the urine makes the patient experience a negative protein balance, reduce body weight, and tend to develop polyphagia. Another consequence is asthenia or deficiency of energy so that the patient becomes tired and sleepy caused by reduced or lost body protein and also reduced use of carbohydrates for energy. Prolonged hyperglycemia will cause arteriosclerosis, thickening of the basement membrane, and changes in peripheral nerves. This will reduce the occurrence of gangrene, changes in body function and appearance because the feet do not work normally, some wounds are difficult to heal, and the smell is due to the pus. This can cause the patient to feel ashamed and hopeless about the situation.

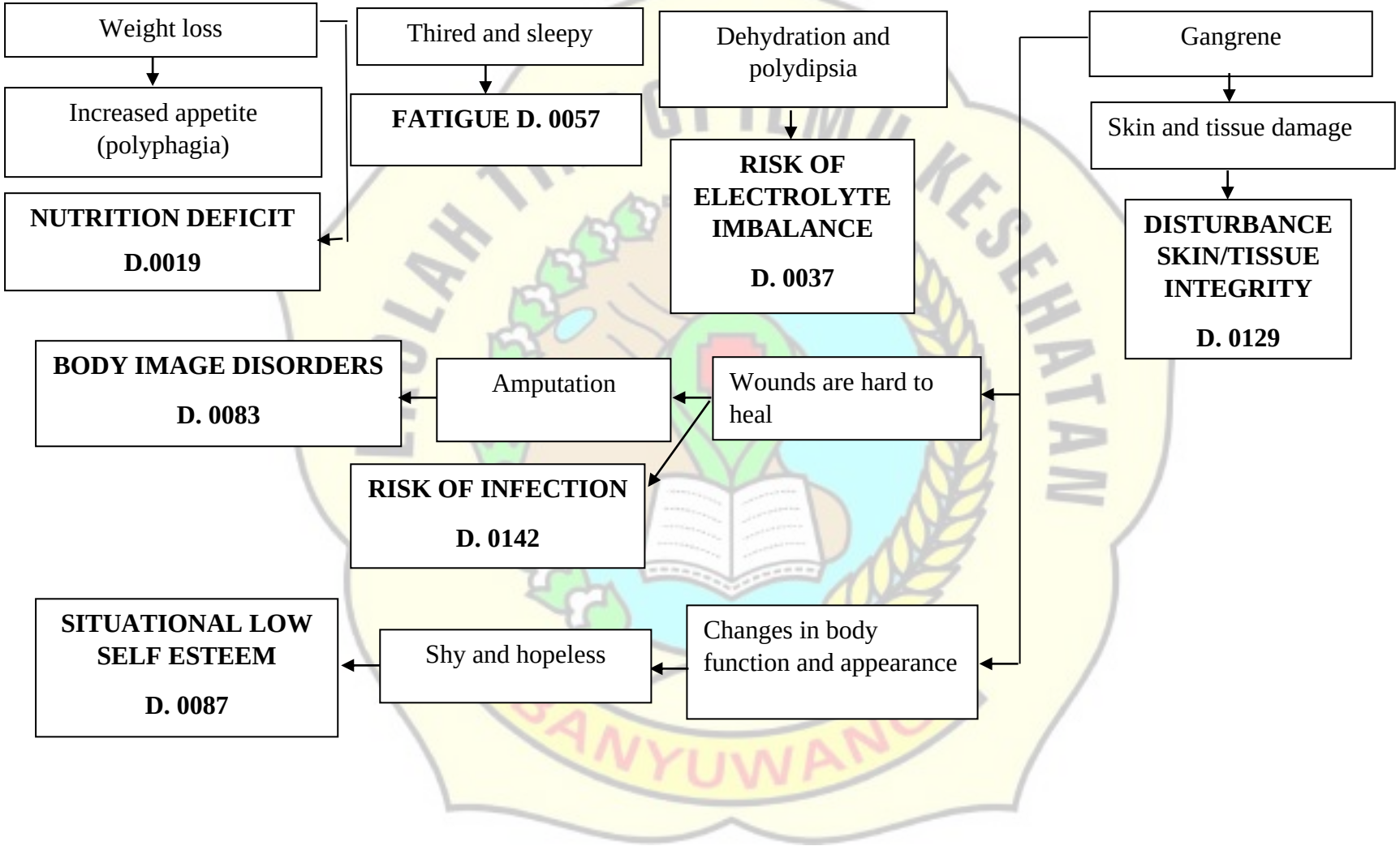
Patients with insulin deficiency cannot maintain normal glucose levels or glucose tolerance before eating carbohydrates, if

hyperglycemia is severe and exceeds the renal threshold, glycosuria develops. This glucose will result in an osmotic diuresis that increases urination (polyuria) must be stimulated, consequently the patients will drink in large quantities because glucose is lost with urine, so the patient experiences a negative caloric balance and loses weight. Increased hunger (polyphagia) occurs as a result of calorie loss.

2.1.7 WOC / Pathway

Chart 1 WOC of Diabetes Mellitus (Gangrene)




Weight loss
Increased appetite (polyphagia)
NUTRITION DEFICIT D.0019
Thired and sleepy
FATIGUE D. 0057
Dehydration and polydipsia
RISK OF ELECTROLYTE IMBALANCE D. 0037
Gangrene
Skin and tissue damage
DISTURBANCE SKIN/TISSUE INTEGRITY D. 0129
BODY IMAGE DISORDERS D. 0083
Amputation
Wounds are hard to heal
RISK OF INFECTION D. 0142
SITUATIONAL LOW SELF ESTEEM D. 0087
Shy and hopeless
Changes in body function and appearance

2.1.8 Management of Diabetes Mellitus

Management of Diabetes Mellitus according to Noor Fatimah (2017):

1. Diet

   The principle of eating arrangements in diabetic patients is almost the same as eating recommendations for the general public, namely a balanced diet and by the calorie and nutritional needs of each individual. In diabetic patients, it is necessary to emphasize the importance of regular eating in the meal schedule, type, and amount of food, especially in those who use blood glucose-lowering drugs or insulin.

2. Exercise (physical exercise or sports)

   It is recommended to exercise regularly (3-4 times a week) for approximately 30 minutes, training according to the patient's ability. An example is a light exercise for 30 minutes of regular walking, avoid sedentary or lazy living habits.

3. Health Education

   It is very important in management. Primary prevention health education should be provided to high-risk community groups. Secondary health education is given to diabetics groups, while health education for tertiary prevention is given to patients who already have DM with chronic complications.

4. Medicine

Drugs in diabetics are oral hypoglycemic and insulin. If the patient has made dietary arrangements and physical exercise but is unable to control blood sugar levels, the use of hypoglycemic drugs and insulin is considered.

2.1.9 Complications of Diabetes Mellitus

According to Noor Fatimah (2017) Diabetes that is not well controlled will cause acute and chronic complications. Complications of DM can be divided into two categories:

1. Acute Complications
   a. Hypoglycemia is a person's blood glucose level below the normal value (< 50 mg/dl). It is more often in patients with type 1 DM which can be experienced 1-2 times per week. Blood glucose levels that are too low causes brain cells do not get an energy supply so that they cannot function properly and can be damaged.
   b. Hyperglycemia is when blood glucose levels increase suddenly, develop into dangerous metabolism, including diabetic ketoacidosis, non-ketosis hyperosmolar coma (NKHC), and chemotactic acidosis.
2. Chronic Complications
   a. Macro vascular complications often develop in diabetics are thrombocytopenia (blood clots in part of the brain),

coronary heart disease (CHD), congestive heart failure, and stroke.

b. Microvascular complications. It happens in patients with type 1 diabetes such as nephropathy, diabetic retinopathy (blindness), neuropathy, and amputation.

2.1.10 Supporting Examination

According to Hasanah (2021) supporting examinations in patients with Diabetes Mellitus is:

1. Laboratory examination

   Laboratory tests carried out are:

   a. Blood test

   Table 1 Blood Glucose Level

No.	Examination	Normal
1.	Fasting blood glucose	>200 mg/dl
2.	Blood glucose during fasting blood glucose	>140 mg/dl
3.	Blood glucose 2 hours after eating	>200 mg/dl

   b. Thyroid Function Examination

   Enhancement activity of thyroid hormones can increase blood glucose and the need for insulin.

   c. Urine

   This examination is done because of the glucose presence in the urine. The examination was carried out by the Benedict method (reduction). The results can be seen through changes

in the urine color: green (+), yellow (++), red (+++), and brick red (++++).

d. Pussy Culture

This examination is done to determine the type of germs in the wound and give antibiotics according to the type of germs.

2.2 The Concept of Gangrene

2.2.1 Definition of Gangrene

Gangrene is an open wound on the surface skin due to blockage of the blood vessels in the legs and peripheral neuropathy caused by high blood sugar levels so that the client often does not feel the wound, open wounds can develop into infections caused by *aerobic or anaerobic bacteria* (Nursafitri, 2019).

Gangrene is one of the complications of diabetes mellitus which is caused by damage to tissue necrosis by embolism of large arteries in the body so that the blood supply stops. Gangrene also occurs due to neuropathy and vascular disorders in the leg area. It appears in the leg area in the form of open sores followed by local tissue death (Kirana *et al.*, 2019).

2.2.2 Risk Factors for Gangrene

Risk factors for gangrene in people with diabetes mellitus according to Nursafitri (2019) are:

1. Risk factors that cannot be changed:
   a. Age.

b. DM duration 10 years.

2. Modifiable risk factors:

a. Neuropathy (sensory, motor, peripheral).

b. Obesity.

c. Hypertension.

d. Uncontrolled blood glucose levels.

e. Smoking habit.

f. DM diet non-compliance.

g. Lack of physical activity.

h. Irregular foot care.

i. Improper use of footwear.

2.2.3 Classification of Gangrene

Based on the type of gangrene the symptoms are distinguished:

1. Dry gangrene DM

Patients will be found with initial symptoms in the form of pain in the area concerned, the area becomes pale, bluish, and has purple spots. Over time the area will turn black, no palpable pulse (not always), feels dry and cold when touched. Pain will decrease over time and eventually disappear. It can detach from intact tissue.

2. Wet gangrene DM

Patients will find signs such as swelling in the lesion area, color changes from dark red to green which finally blackish,

cold, wet, soft, there is necrotic tissue that smells bad, can be without the same smell.

According to the severity of the lesions, diabetic foot disorders or gangrene are divided into five degrees according to Wagner (Erin, 2017).

1. At grade 0 the skin is intact, but there is foot deformity due to neuropathy.

Picture 2 Grade 0

2. Grade 1 has a superficial ulcer

Picture 3 Grade 1

3. Grade 2 a deeper ulcer

Picture 4 Grade 2

4. Grade 3 a deep ulcer with abscess with possible cellulitis and osteomyelitis

Picture 5 Grade 3

5. Grade 4 has gangrene of the fingers

Picture 6 Grade 4

6. Grade 5 is gangrene of the feet

Picture 7 Grade 5

2.2.4 Wound Care in Diabetes

According to Hariani and David (2017) the basis of diabetic ulcer care includes 5, they are:

1. General care and diabetes

   Blood glucose regulation needs to be done, although there is no evidence of a direct relationship between blood glucose regulation and wound heal. This is caused by impaired leukocyte function in patients with chronic hyperglycemia. This treatment

includes several related systemic factors including hypertension, hyperlipidemia, coronary heart disease, obesity, and renal insufficiency.

2. Debridement

Debridement is one of the most important actions in wound care. It is an action to remove tissue necrosis, callus, and fibrotic tissue. Dead tissue is removed about 2-3 mm from the wound edge to healthy tissue. It can increase growth factors that help the wound healing process. The most common debridement methods are surgical (sharp), autolytic, enzymatic, chemical, mechanical, and biological.

Surgical, autolytic, and chemical methods only remove necrotic tissue (selective debridement), while the method of removing necrotic tissue and living tissue (non-selective debridement).

3. Offloading

Offloading is a reduction in pressure on gangrene, being one of the components of gangrene treatment. Ulcerations usually occur in areas of the sole that are under high pressure. Bed rest is an ideal way to relieve pressure but is difficult to do.

Total Contact Casting (TCC) is one of the most effective offloading methods. It is made of a cast that is specially shaped to spread the patient's burden out of the gangrenous area. This method allows the patient to walk during treatment and is useful for

controlling the presence of edema that can interfere with wound healing. Although difficult and long, TCC can reduce the pressure on the wound and it is shown by 73-100% healing. The disadvantages of TCC are it requires skill and time, irritation from the cast can cause new wounds, difficulty assessing the wound every day.

4. Infection Management

   In infections that are not dangerous (threatening non-limb) are usually caused by staphylococci and streptococci. Mild infections and can be treated polyclinically with oral antibiotics, cephalexin, amoxicillin-clavulanic, moxifloxacin, or clindamycin.

5. Surgical Debridement

   Debridement can be performed to remove dead and infected tissue from ulcers, hypertrophic callus. During debridement, the depth and presence of infected bone or joint can also be determined.

   Revision surgery may be performed on the bone to move the load point. The action is a metatarsal resection or ostectomy. Vascular surgery is indicated if symptoms of blood vessel abnormalities are found, namely severe pain, wounds that do not heal, gangrene. The autologous skin graft is the standard measure of partial-thickness wound closure. Skin allografts allow for extensive and deep wound closure where the wound bed is insufficient for autologous skin grafting.

2.3 Concept of Body Image Disorder

2.3.1 Definition of Body Image Disorder

Body image disorder is confusion in the mental description of an individual's physical self. Disturbed body image is a change in perception about the appearance, structure, and physical function of an individual (PPNI, 2017).

2.3.2 Characteristic Limitations

According to Tim Pokja SLKI DPP PPNI (2018) the characteristic limitations of body image disorders are:

a. Seeing Body Parts Increase (5)
b. Touching Body Parts Increases (5)
c. Verbalization of Body Parts Disability Increases (5)
d. Increased Verbalization of Body Part Decrease (5)
e. Verbalization of Negative Feelings About Body Changes Decrease (5)
f. Verbalization of Concern at Rejection/Reaction of Others Decrease (5)
g. Verbalization of Lifestyle Changes Decreases (5)
h. Hiding Excess Body Parts Decreases (5)
i. Shows Excessive Body Parts Decreased (5)
j. Focus On Body Parts Decrease (5)
k. Focus On Past Performances Decrease (5)
l. Focus On Past Strengths Decreases (5)
m. Nonverbal Responses to Body Changes Better (5)

n. Better Social Relations (5)

2.3.3 Major Symptoms and Signs

a. Subjective

Expressing confession/loss of body parts

b. Objective

Losing body parts changes/decreased function/structure of the body

2.3.4 Minor Symptoms and Signs

a. Subjective

1. Do not want to say disability/loss of limbs
2. Expressing negative feelings about body changes
3. Expressing worry about rejection/reaction of others
4. Revealing lifestyle changes

b. Objective

1. Hiding/showing body parts excessively
2. Avoid seeing and/or touching body parts
3. Excessive focus on body changes
4. Non-verbal responses to changes and body perceptions
5. Focus on past appearances and strengths
6. Social relationship change

2.3.5 Associated Clinical Conditions

1. Mastectomy
2. Amputation
3. Acne
4. Visible scars or burns

5. Obesity
6. Hyper pigmentation in pregnancy
7. Psychiatric disorders
8. Neoplasm therapy program
9. Chemically induced alopecia

2.3.6 Intervention

Observation

a. Identify body image expectations by developmental stage.
b. Identification of culture, religion, gender, and age body image disorders.
c. Identify changes in body image that result in social isolation.
d. Monitor the frequency of self-critical statements.
e. Monitor whether the patient can see the changed body parts.

Therapeutic

a. Discuss body changes and functions.
b. Discuss the difference between physical appearance and self-esteem.
c. Discuss changes due to puberty, pregnancy, and aging.
d. Discuss stressful conditions that affect body image (e.g. wounds, illness, surgery).
e. Discuss how to develop realistic body image expectations.
f. Discuss the patient's and family's perception of changes in body image.

Education

a. Explain to family about body image change treatment
b. Suggest self-image of body.
c. Suggest use of assistive devices (e.g. clothing, wigs, cosmetics)
d. Suggest participation in support groups (e.g. peer groups)
e. Train your body functions
f. Practice improving your appearance (e.g. dressing up)
g. Practice expressing self-ability to other people and groups

2.4 Concept of Diabetes Mellitus Nursing Care

2.4.1 Assessment

Assessment is the beginning of the nursing process stage and a systematic process in collecting data from various data sources for the development and recognition of the client's health status. The data collected in this study include bio-psycho-socio-spiritual (Nursafitri, 2019).

The assessment processes according to Wamese (2017) are:

1. Identity client

It consists of client identity namely name, place and date of birth, age: DM often occurs at the age of 45 years, gender: DM often happens in women compared to men, religion, education, address, date of hospital admission, date of assessment, medical diagnosis, and therapy plans. While the identity of person in charge which consists of name, age, address, education, and occupation.

2. Main complaint

   The reasons or complaints that are often seen in DM clients to come to the hospital are a tingling feeling in the feet or lower legs, a decreased sense of touch and a wound that does not heal and smells bad.

3. Current medical history

   It contains when the wound occurred, the cause of the wound as well as the efforts that have been made by the patient to overcome it.

4. Past medical history

   There is a history of DM or other diseases related to insulin deficiency for example a history of heart disease, obesity, medical actions that are felt by drugs commonly used by patients.

5. Family medical history

   From the usual family genogram, there is one family member who also suffers from DM or hereditary diseases that can cause insulin deficiency.

6. Psychosocial history

   It includes information about the behavior, feeling, and emotions experienced by the patient in connection with his/her disease.

7. Physical examination

   a. General health status

It includes the patient's condition, consciousness, voice, height, weight, and vital signs.

b. Head and neck

The head and neck examination examine the shape of the head, the hair condition, any enlargement of the neck, ears, sometimes ringing, this is hearing loss, the tongue often feels thick, the saliva becomes thick, the teeth are easily loose, the gums are easily swollen and bleed, the vision blurred or doubled, diplopia, cloudy eye lens.

c. Integumentary system

On this examination the results obtained were decreased skin turgor, presence of black wounds or scars, humidity, and temperature of the skin in the area around ulcers and gangrene, redness around the wound, texture of hair and nails.

d. Respiratory system

On respiratory examination you need to see if there is shortness of breath, cough, sputum, chest pain because people with DM are prone to infection.

e. Cardiovascular system

Assess for decreased tissue perfusion, weak or diminished peripheral pulses tachycardia or bradycardia, hypertension, hypotension, arrhythmias, cardiomegaly.

f. Gastrointestinal system

On gastrointestinal examination there were polyphagia, polydipsia, nausea, vomiting, diarrhea, constipation, dehydration, changes in body weight and increased abdominal circumference, obesity.

g. Urinary system

It contains polyuria, urinary retention, urinary incontinence, burning, or pain when urinating.

h. Musculoskeletal system

Spread of fat and drug mass, changes in height, fatigue, and pain, gangrene in the extremities.

i. Neurological system

It contains sensory impairment, paresthesia, anesthesia, lethargy, drowsiness, slow reflexes, mental confusion, and disorientation.

8. Laboratory examination

Laboratory tests carried out are:

a. Blood tests

Blood tests include: GDS > 200mg/dl, fasting blood sugar >120mg/dl, and two hours post prandial >200mg/dl.

b. Urine

Examination revealed the presence of glucose in the urine. It is done by using benedict (reduction). The results can be seen through changes in the color of urine: green (+), yellow (++), red (+++), and brick red (++++).

c. Pussy culture

Knowing the type of germs in the wound and giving antibiotics according to the type of germs.

2.4.2 Nursing Diagnosis

According to the Tim Pokja SDKI DPP PPNI (2017), nursing diagnoses that often appear in cases of Diabetes Mellitus are as follows:

1. Ineffective Peripheral Perfusion related to hyperglycemia (D.0009).
2. Impaired urinary elimination is related to decreased bladder capacity (D.0040).
3. The nutritional deficit is related to an inability to absorb nutrients (D.0019).
4. Body image disorders related to structural/shape changes (e.g. amputation, trauma, burns, obesity, acne) (D.0083).
5. Disturbance Skin Integrity related to changes in circulation (D.0129).
6. Situational low self-esteem related to changes in body image (D.0087).
7. Instability of blood glucose levels related to insulin resistance (D.0027).
8. Fatigue is related to physiological conditions (D.0057).
9. Risk for electrolyte imbalance evidenced by fluid imbalance (e.g. dehydration and water intoxication) (D.0037).

10. Infection risk evidenced by chronic disease (e.g. diabetes mellitus) (D.0142).

2.4.3 Intervention

Table 2 Intervention Concepts of Nursing Care

No.	Diagnose	Goals and Outcome Criteria	Intervention
1.	Ineffective Peripheral Perfusion related to hyperglycemia (D.0009)	After implementation nursing for 3x24 hours is expected to peripheral perfusion problems are resolved. With the result criteria: (Tim Pokja SLKI DPP PPNI, 2018) a. Peripheral pulse rate increased (5) b. Wound healing increased (5) c. Increased sensation (5) d. Decreased pale skin color (5) e. Decreased peripheral edema (5) f. Decreased extremity pain (5) g. Decreased paresthesia (5) h. Decreased muscle weakness (5) i. Decreased muscle cramps (5) j. Decreased femoral bruit (5) k. Decreased necrosis (5) l. Capillary refill is better (5) m. Acral is better (5) n. Skin turgor is better (5) o. Systolic blood pressure is better (5) p. Diastolic blood pressure is better (5) q. Mean arterial pressure is better (5) r. Ankle-brachial index is better (5)	Circulation treatment (1.02079) (Tim Pokja SIKI DPP PPNI, 2018) Implementation Observation a. Check peripheral circulation (e.g. peripheral pulse, edema, capillary refill, color, temperature, ankle-brachial index) b. Identify risk factors for circulatory disorders (e.g. diabetes, smoking, the elderly, hypertension, and high cholesterol levels) c. Monitor for heat, redness, pain, or swelling in the extremities Therapeutic d. Avoid infusion or blood collection in areas of limited perfusion e. Avoid measuring blood pressure in extremities with limited perfusion f. Avoid pressing and placing a tourniquet on the injured area g. Do infection prevention h. Do foot and nail care i. Do hydration Education

			j. Recommend stop smoking k. Recommend regular exercise l. Recommend checking the bathwater to avoid sunburn m. Recommend using blood pressure-lowering drugs, anticoagulants, and cholesterol-lowering if necessary n. Recommend taking blood pressure control medication regularly o. Recommend avoiding the use of beta-blocking drugs p. Recommend proper skincare (eg moisturizing dry skin on feet) q. Recommend a vascular rehabilitation program r. Recommend a diet program to improve circulation (e.g. low in saturated fat, omega 3 fish oil) s. Indicate emergency signs and symptoms to report (e.g. pain that does not go away at rest, wound that does not heal, loss of feeling)
2.	Impaired urinary elimination related to decreased bladder capacity (D.0040)	After the implementation nursing for 3x 24 hours is expected urinary elimination problems better. With the result Criteria: (Tim Pokja SLKI DPP PPNI, 2018) a. Increased urinary sensation (5) b. Decreased urgency (urgency) (5) c. Decreased bladder distension (5) d. Decreased hesitancy (5) e. Decreased residual urine volume (5) f. Decreased dribbling (5) g. Decreased nocturia (5)	Urine Elimination Management (1.04152) (Tim Pokja SIKI DPP PPNI, 2018) Implementation Observation a. Identify signs and symptoms of urinary retention or incontinence b. Identify factors that cause urinary retention or incontinence c. Monitor urine elimination (e.g. frequency, consistency, aroma, volume, and color)

		h. Bedwetting decreased (5) i. Decreased enuresis (5) j. Decreased dysuria (5) k. Anuria decreased (5) l. BAK frequency better (5) m. Urine characteristics better (5)	Therapeutic d. Record the time and urine output e. Limit fluid intake, if necessary f. Take a midstream urine sample or culture education g. Teach signs and symptoms of urinary tract infection h. Teach measuring fluid intake and urine output i. Teach midstream urine specimen collection j. Teach to recognize the signs of urination and the right time to urinate k. Teach modality therapy, strengthen pelvic muscles / urinate l. Suggest drinking enough, if there are no contraindications m. Suggest reducing before going to bed Collaboration n. Collaboration offers urethral suppository medication, if necessary
3.	The nutritional deficit is related to an inability to absorb nutrients (D.0019).	After implementation of nursing for 3x 24 hours, it is hoped that the problem of the nutrition deficit will be better. With the result Criteria: (Tim Pokja SLKI DPP PPNI, 2018) a. The increased portion of food consumed (5) b. Increased knowledge of proper food choices (5) c. Increased knowledge of proper drink choices (5) d. Knowledge of proper nutritional intake	Nutrition Management (1.03119) (Tim Pokja SIKI DPP PPNI, 2018) Implementation Observation a. Identification of nutritional status b. Identification of food allergies and intolerances c. Identify favorite foods d. Identify caloric needs and types of nutrition

		standards is increased (5) e. Attitude towards food/beverage following health goals increases (5) f. Weight better (5) g. Body mass index (BMI) better (5) h. Eating frequency better (5) i. Appetite better (5)	e. Identify the need for a nasogastric tube f. Monitor food intake g. Monitor weight h. Monitor the results of laboratory tests Therapeutic i. Do oral hygiene before eating, if necessary j. Food attractively and at the right temperature k. Provide high-fiber foods to prevent constipation l. Provide high-calorie and high-protein foods m. Give dietary supplements, if necessary n. Discontinue nasogastric tube feeding if oral intake can be tolerated education o. Advise sitting position, if able p. Programmed diet Collaboration q. Collaborate to provide pre-meal medication (e.g. pain reliever, analgesic), if necessary
4.	Body image disorders related to structural/shape changes (e.g. amputation, trauma, burns, obesity, acne) (D.0083).	After Implementation Nursing For 3x 24 Hours, It Is Hoped That The Problem Of The Body image Disorders Will Be Better. With The Result Criteria: (Tim Pokja SLKI DPP PPNI, 2018) a. Seeing body parts increase (5) b. Touching body parts increases (5)	Body image Promotion (1.09305) (Pokja SIKI DPP PPNI Team, 2018) Implementation Observation a. Identify body image expectations by developmental stage b. Identification of culture, religion, gender, and age-related to the body

		c. Verbalization of body parts disability increases (5) d. Verbalization of body part loss increases (5) e. Verbalization of negative feelings about body changes decreases (5) f. Verbalization of concern at rejection/reaction of others (5) decreases g. Verbalization of lifestyle changes decreases (5) h. Hiding excess body parts decreases (5) i. Shows excessive body parts decreased (5) j. Focus on body parts decreased (5) k. Focus on past performances decreased (5) l. Focus on past strengths decreases (5) m. Nonverbal responses to bodily changes better (5) n. Social relations better (5)	c. Identify changes in body image that result in social isolation d. Monitor the frequency of self-critical statements e. Monitor whether the patient can see the changed body parts Therapeutic f. Discuss body changes and functions g. Discuss the difference between physical appearance and self-esteem h. Discuss changes due to puberty, pregnancy, and aging i. Discuss stressful conditions that affect body image (e.g. wounds, illness, surgery) j. Discuss how to develop realistic body image expectations k. Discuss patient and family perceptions of changes in body image Education l. Suggest to family about body image change treatment m. Suggest reveals self-image to body image n. Suggest the use of assistive devices (e.g. clothes, wigs, cosmetics) o. Suggest joining a support group (e.g. Peer group) p. Train your body functions q. Practice self-improvement (e.g. dressing up) r. Practice expressing self-ability to other people and groups

5.	Disturbance Skin Integrity related to changes in circulation (D.0129).	After Implementation Nursing for 3x 24 Hours, It Is Hoped That The Problem Of The Disturbance Skin Integrity Will Be Better. With The Result Criteria: (Tim Pokja SLKI DPP PPNI, 2018) a. Elasticity Increased (5) b. Hydration Increased (5) c. Tissue perfusion Increased (5) d. Tissue damage decreased (5) e. Skin layer damage decreased (5) f. Pain decreased (5) g. Bleeding decreased (5) h. Redness decreased (5) i. Hematoma decreased (5) j. Abnormally pigmentation decreased (5) k. Scarring decreased (5) l. Necrosis decreased (5) m. Corneal abrasion decreased (5) n. Skin temperature better (5) o. Improved sensation (5) p. Texture better (5) q. Hair growth better (5)	Wound Care (1.14564) (Tim Pokja SIKI DPP PPNI, 2018) Implementation Observation a. Monitor wound characteristics (e.g. drainage, color, size, odor) b. Monitor for signs of infection Therapeutic c. Remove the bandage and plaster slowly d. Shave the hair around the wound area, if necessary e. Clean with liquid NaCl or non-toxic cleaner, as needed f. Clean necrotic tissue g. Apply an appropriate ointment to the skin/lesion, if necessary h. Apply the dressing according to the type of wound i. Maintain sterile technique when performing wound care j. Change the dressing according to the amount of exudates and drainage k. Schedule a change of position every 2 hours or according to the patient's condition l. Give a diet with calories 30-35 kcal/bb/day and protein 1.25 – 1.5 g/kg/bb/day m. Give vitamin and mineral supplements (e.g. vitamin a, vitamin c, zinc, amino acids) as indicated n. Give tension therapy (transcutaneous

		nerve stimulation), if necessary Education o. Describe the signs and symptoms of infection p. Recommend eating foods high in calories and protein q. Teach wound care procedures independently Collaboration r. Collaborative debridement procedures (e.g. enzymatic, biologic, mechanical, autolytic) if necessary s. Collaboration of antibiotics, if necessary

6.	Situational low self-esteem related to changes in body image (D.0087).	After implementation of nursing for 3x 24 hours, it is hoped that the problem of situational low self-esteem will be better. With the result criteria: (Tim Pokja SLKI DPP PPNI, 2018) a. Positive self-assessment increases (5) b. Feelings of having positive strengths or abilities increase (5) c. Acceptance of positive self-assessments increased (5) d. Interest in trying new things increased (5) e. Walking face increased (5) f. Sleep concentration increased (5) g. Speaking confidence increased (5) h. Shyness decreased (5) i. A feeling of being unable to do anything decreased (5)	Self-esteem promotion (1.09308) (Tim Pokja SIKI DPP PPNI, 2018) Intervention Observation a. Identification of culture, religion, race, gender, and age on self-esteem b. Monitor self-deprecating verbalization c. Monitor self-esteem level at any time, as needed Therapeutic d. Motivation to engage in positive verbalization for oneself e. Motivation to accept new challenges or things f. Discuss statements about self-esteem g. Discuss confidence in self-assessment h. Discuss with family to set clear expectations and boundaries i. Facilitation of environment and activities that increase self-esteem Education j. Explain to the family the importance of support in the development of the patient's positive self-concept k. Practice positive thinking and behaving yourself
7.	Instability of blood glucose levels related to insulin resistance (D.0027).	After implementation of nursing for 3x 24 hours, it is hoped that the problem of the Instability of blood glucose levels will be better. With the result criteria: (Tim Pokja SLKI DPP PPNI, 2018)	Hyperglycemia Management (1.03115) (Tim Pokja SIKI DPP PPNI, 2018) Implementation Observation a. Identify possible causes of

	a. Coordination increased (5) b. Awareness increased (5) c. Sleepiness decreased (5) d. Dizziness decreased (5) e. Tiredness/fatigue decreased (5) f. Hunger complaints decreased (5) g. Thirst decreased (5) h. Blood glucose levels better (5) i. Glucose levels in urine better (5) j. Urine volume better (5)	hyperglycemia b. Identify situations that cause insulin requirements to increase (e.g. relapsing disease) c. Monitor blood glucose levels, if necessary d. Monitor signs and symptoms of hyperglycemia (e.g. polyuria, polydipsia, polyphagia, weakness, malaise, blurred vision, headache) e. Monitor fluid intake and output f. Monitor urine ketones, blood gas analysis levels, electrolytes, orthostatic blood pressure, and pulse rate Therapeutic g. Give oral fluid intake h. Consult medical if signs and symptoms of hyperglycemia persist i. Facilitate ambulation if there is orthostatic hypotension Education j. Recommend avoiding exercise when blood glucose levels are more than 250 mg/dl k. Recommend monitoring blood glucose levels independently advise adherence to diet and exercise l. Teach indications and importance of urine ketone testing, if necessary m. Teach diabetes management (e.g. use of insulin, oral medications n. Monitor carbohydrate replacement fluid intake, and health professional

			assistance) Collaboration o. Collaborative administration of insulin, if necessary p. Collaborative administration of iv fluids, if necessary q. Collaborative administration of potassium, if necessary.
8.	Fatigue is related to physiological conditions (D.0057).	After implementation of nursing for 3x 24 hours, it is hoped that the problem of the instability of fatigue will be better. With the result criteria: (Tim Pokja SLKI DPP PPNI, 2018) a. Verbalization of energy recovery increased (5) b. Power increased (5) c. Ability to perform routine activities increased (5) d. Motivation increased (5) e. Tired verbalization decreased (5) f. Lethargy decreased (5) g. Headache decreased (5) h. Appetite better (5) i. Rest pattern better (5)	Education Activity/rest (1.12362) (Tim Pokja SIKI DPP PPNI, 2018) Implementation Observation a. Identify readiness and ability to receive information Therapeutic b. Provide materials and media for activity and rest arrangements c. Schedule for the provision of health education as agreed d. Provide opportunities for patients and families to ask questions Education e. Explain the importance of doing physical activity/exercise regularly f. Encourage involvement in group activities, play activities, or other activities g. Suggest arranging activity and rest schedule h. Teach how to identify the need for rest (e.g., fatigue, shortness of breath due to activity) i. Teach how to identify targets and types of activities according to

			ability
9.	Risk for electrolyte imbalance evidenced by fluid imbalance (e.g. dehydration and water intoxication) (D.0037).	After implementation of nursing for 3x 24 hours, it is hoped that the problem of the instability of Risk for an electrolyte imbalance will be better. With the result criteria: (Tim Pokja SLKI DPP PPNI, 2018) a. Serum sodium better (5) b. Serum potassium better (5) c. Serum chloride better (5) d. Serum potassium better (5) e. Serum magnesium better (5) f. Serum phosphorus better (5)	Electrolyte Monitoring (1.03122) (Tim Pokja SIKI DPP PPNI, 2018) Implementation Observation a. Identify possible causes of electrolyte imbalance b. Monitor serum electrolyte levels c. Monitor for nausea, vomiting, and diarrhea d. Monitor fluid loss, if necessary e. Monitor for signs and symptoms of hyponatremia (e.g., disorientation, muscle twitching, headache, dry mucous membranes, postural hypotension, seizures, lethargy, loss of consciousness) f. Monitor for signs and symptoms of hypernatremia (e.g. thirst, fever, nausea, vomiting, restlessness, irritability, dry mucous membranes, tachycardia, hypotension, lethargy, confusion, seizures) g. Monitor for signs and symptoms of hypocalcaemia (e.g., irritability, Chvostek sign [facial muscle spasm], Trousseau's sign [carpal spasm], muscle cramps, prolonged QT interval) h. Monitor for signs and symptoms of hypercalcemia (e.g. bone pain, thirst, anorexia, lethargy, muscle weakness, shortened QT segment, wide T wave, wide QRS complex,

			prolonged PR interval) i. Monitor for signs and symptoms of hypomagnesemia (e.g., respiratory depression, apathy, Chvostek's sign, Trousseau's sign, confusion, dysrhythmias) j. Monitor for signs and symptoms of hypo magnesia (e.g. muscle weakness, hyporeflexia, bradycardia, CNS depression, lethargy, coma, depression) Therapeutic k. Set the time interval to monitor according to the patient's condition l. Monitoring results Education m. Explain the purpose and procedure of monitoring n. Inform Monitoring results, if necessary
10.	Infection risk evidenced by chronic disease (e.g. diabetes mellitus) (D.0142).	After implementation of nursing for 3x 24 hours, it is hoped that the problem of the instability of infection risk will be better. With the result criteria: (tim pokja slki dpp ppni, 2018) a. Hand hygiene better (5) b. Body hygiene better (5) c. Appetite increased (5) d. Fever decreased (5) e. Redness decreased (5) f. Pain decreased (5) g. Swelling decreased (5) h. Foul-smelling liquid decreased (5)	Infection Prevention (1.1.45.39) (Tim Pokja SIKI DPP PPNI, 2018) Implementation Observation a. Monitor for signs and symptoms of local and systemic infection Therapeutic b. Limit the number of visitors c. Give skincare to the edema area d. Wash hands before and after contact with patients and the patient's environment

	i. Green sputum decreased (5) j. Purulent drainage decreased (5) k. Pyuria decreased (5) l. Malaise decreased (5) m. The shivering period decreased (5) n. Lethargy decreased (5) o. Cognitive impairment decreased (5) p. White blood cell levels better (5) q. Blood culture better (5) r. Urine culture better (5) s. Sputum culture better (5) t. Wound area culture better (5) u. Stool culture better (5) v. White blood cell levels better (5)	e. Maintain aseptic technique in high-risk patients Education f. Describe the signs and symptoms of infection g. Teach how to wash hands properly h. Teach cough etiquette i. Teach how to check the condition of the wound or surgery j. Recommend increasing nutritional intake k. Recommend increasing fluid intake l. Collaborative immunization administration, if necessary

2.4.4 Implementation

According to Ambarwati (2017) implementation is the realization of an action plan to achieve the goals that have been set. Activities in implementation also include continuous data collection, observing client responses during and after the implementation of actions, and assessing new data. Factors that affect the implementation of nursing include:

a. Intellectual, technical, and interpersonal skills
b. The ability to assess new data
c. Creativity and innovation in modifying action plans
d. Adjustments during interacting with clients
e. The ability to make decisions in implementing adjustments
f. Ability to ensure safety and security and efficiency of action

2.4.5 Evaluation

Nursing evaluation is the final stage of nursing processes series that are useful for achieving the actions that have been taken or other approaches are needed. It measures the success of the plans and implementation of actions taken in meeting client needs. Assessment is the stage that determines whether the objectives have been achieved. Evaluation is always related to goals, namely the cognitive, affective, psychomotor components, changes in function, and specific signs and symptoms (Ambarwati, 2017).

CHAPTER 3

RESEARCH METHODS

3.1 Research Design

Research design is the whole planning to answer the researcher's questions and anticipate some difficulties that may arise during the research process, this is important because research design is a strategy to get data needed for hypothesis testing or to answer research questions and as a tool to control variables that influential in research (Sugiono, 2011). The research design used was a case study; It was a study to explore the problem of nursing care in diabetes mellitus (gangrene) patients with body image disorders nursing problem at Blambangan Regional Public Hospital Banyuwangi 2021.

3.2 Terminology

Definition of Diabetes Mellitus	Diabetes Mellitus (DM) is a metabolic disease characterized by an increase in a person's blood sugar (glucose) levels in the body that exceeds normal limits or is called hyperglycemia. High sugar levels are excreted through urine, so urine contains sugar or sweet so that people often call it diabetes. Diabetes can eventually lead to complications, both acute and chronic (Alfarobi, 2019).
Definition of Gangrene	Gangrene is an open wound on the skin surface due to blockage of the blood vessels in the legs and peripheral neuropathy caused by high blood sugar levels so that the client often does not feel the wound, Open wounds can develop into infections caused by *aerobic or anaerobic bacteria* (Nursafitri, 2019).
Definition of Body Image Disorder	Body image disorder is confusion in the mental description of an individual's physical self. Disturbed body image is a change in perception about the appearance, structure, and physical function of an individual (PPNI, 2017).

3.3 Participants

The participants used in this case study were clients who have Diabetes Mellitus (gangrene) with body image disorders nursing problem at Blambangan Hospital Banyuwangi. The number of participants used in the study was two clients who experienced Diabetes Mellitus (gangrene) with body image disorders nursing problem and then compared the two clients.

3.4 Location and Time of Research

1. Location

   The research located at Blambangan Regional Public Hospital Banyuwangi.

2. Research Time

   The time of the study was carried out when the client entered the hospital for a minimum of three days, if in less than three days the client had left the hospital the intervention could be done by home care. In this study, the research time was divided into two stages as follows:

   a. The preparation stage includes:

      1. Proposed Preparation: September 2021-November 2021
      2. Seminar Proposal: November 2021

   b. The implementation phase includes:

      1. Application for permits: 2 October – 2 November 2021
      2. Data collection: 2 October – 2 November 2021

3.5 Data Collection

1. Interview

   An interview is a communication tool that enables the exchange of information, a process that results in a higher level of understanding than

is achieved individually. Nursing interview has specific objectives including the collection of a specific data set. The anamnesis was carried out directly between the researcher and the patients, including client identity, main complaint, history of current illness, past medical history, family history of illness, etc. Sources of information are from clients, families, and nurses. The tools used for interviews in data collection can be in the form of writing instruments, notebooks, cameras, or voice recorders.

2. Observation and Physical Examination

Observation is a way of collecting data by direct observation of the client to look for changes or things to be researched with a physical examination including inspection, palpation, percussion, and auscultation on the client's body system which is carried out head to toe.

3. Documentation Study

The documentation study was by documenting the results of diagnostic examinations, evaluation of nursing care, data from medical records, and data from the notebook Diabetes Mellitus (gangrene) client at Blambangan regional public Hospital Banyuwangi 2021.

3.6 Data Validity Test

To reach a valid conclusion, the data validity was tested on all the data collected. The validity was tested by the member check technique. Member check is a process of checking data to the data source. The purpose of doing a member check in orther that the information obtained in the research report has conformity with what was intended by the data source or informant.

Member check can be done after the end of one data collection period. The mechanism can be done individually where the researcher meets the data source or meets in a group discussion forum. In this process the data can be added, subtracted, or rejected by the data source until a mutual agreement is obtained, it can be in the form of a signed document.

3.7 Data Analysis

Data analysis is a very important part to achieve the main objective of the research to answer the research questions used to analyze the problem. The raw data obtained cannot describe the desired information to answer the research problem.

The obstacles faced by the author during this research included 2 aspects, namely:

1. Time Barriers to Get Patients

   The author received the first patient on May 24, 2022 namely Mrs. R with a medical diagnosis of gangrene Diabetes mellitus so the researcher conducted an assessment. Mrs. R met the criteria in this study. While the second patient was on June 23, 2022 namely Mrs. W with a medical diagnosis of Diabetes mellitus gangrene so the researcher conducted an assessment. Mrs. W met the criteria in this study. In this study, the researcher got the second patients for a month.

2. Barriers to Collect Data

   The obstacles faced in collecting data was when the patient assessment tends to be closed in answering questions, so the researcher

must build trust first. It took a long time to believe the researcher. After believing in the researcher, finally, the patients were able to answer and tell their condition to the researcher.

3.8 Research Ethics

Before conducting research, researcher must understand the ethical principles in research that will be carried out using human subjects, where every human being has their rights that cannot be forced. Some of the ethics in conducting research include:

1. Justice

   The principle of justice relates to the nurse's obligation to treat everyone justice and not takes sides.

2. Informed consent to be a participant

   Before the consent sheet was given to the participant, first the researcher explained the aims, advantages, and disadvantages of the research to be carried out to the participants.

   The purpose of this study was to determine the client's knowledge about how to prevent body image disorders, the actions to be taken if a body image disorder has occurred, and to explore the client's knowledge about the possible impact of body image disorders.

   a. Profit

      Some of the benefits obtained from this research were the clients know how to prevent body image disorders, can determine what action to take if a body image disorder occurs, and know about the impact of body image disorder.

b. Losses

In this study there are no dangers and losses for the participants because this research used an interview process and provided interventions with direct assistance by the supervisor. The possible disadvantage was it only took the time of the participants. If the participants had understood and were willing, then they signed the consent letter to be participant, but if they refused, the researcher will not force it.

c. Participant matters

After an explanation of informed consent was made, the participants had the right to refuse, and if they agreed they had the right to withdraw from being a participant, delay the time if they are unable and they had the right to refuse to be interviewed for a while. In addition, the rights of other participants are entitled to get rewards from researchers for their participation as participants in the study.

d. Obligations of participants

The participant's obligation after signing the consent form is to comply with what has been determined by the researcher, for example answering all the questions given by the researcher and they must provide the correct answer without being manipulated.

3. Anonym (No name)

To maintain participant confidentiality, the researcher did not include the participant's full name but the researcher only used the initials,

for example, Mrs. S/Mr. H to make researcher easier to distinguish between participants to minimize errors.

4. Confidentiality

The confidentiality of the data received from the respondents is guaranteed by the researcher. Meanwhile if there is a special forum, the researcher will provide the data obtained from the interview without giving the participant's real name.

5. Respect

Respect is defined as the behavior of nurses who respect clients and families. Nurses must respect the rights of clients.

6. Autonomy

Autonomy is related to a person's right to regulate and make their own decisions although there are still limitations, especially related to situations and conditions, backgrounds, individuals, legal intervention, and existing health professionals.

7. Beneficence (generosity/advice)

Beneficence relates to the obligation to do well and not harm others. If the principle of generosity trumps the principle of autonomy, it is called paternalism. Paternalism is behavior based on what the health professional believes is for the good of the client, sometimes not involving the client's decision.

8. Non-Maleficence

This principle relates to the obligation not to cause harm or injury to the client.

9. Veracity (Honesty)

It relates to the nurse's obligation, to tell the truth, and not lie or deceive others.

10. Fidelity (loyalty)

Regarding the obligation to always be faithful to the agreements and responsibilities that have been made, the care must keep the promises to the client.

3.9 Obstacles That The Writer Faces

The obstacles that the writer faced during this research included 2 aspects, namely:

1. Time Barriers to Get Patients

The obstacle that the writer faces in getting this patient is that the author received the first patient on May 24, 2022, namely Mrs. R with a medical diagnosis of gangrene Diabetes mellitus so the writer conducted an assessment. Mrs. R meets the criteria in this study. While the second patient came on June 23, 2022, namely Mrs. W with a medical diagnosis of Diabetes mellitus gangrene so the writer conducted an assessment. Mrs. W meets the criteria in this study. In this study, the writer gets patients for 1 month the authors just got a second patient.

2. Barriers to Collecting Data

The obstacle the writer faces in collecting data is when the patient assessment tends to be closed in answering questions, so the Writer must build trust first. It took a long time to believe the writer. After believing in the writer, finally, the patient was able to answer and tell her condition to the writer.