THE MOST COMMON NURSING DIAGNOSES ENFORCED IN DIABETES MELLITUS PATIENTS WITH COMPLICATIONS

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ABSTRACT

Diabetes mellitus has been one of the world's medical emergencies, with the fastest-growing prevalence this century. To overcome public health problems, nurses have an important role in providing optimal services based on an established standard of nursing care. One of the important components of nursing care is nursing diagnosis, which is the basis of nursing decision-making. This study aimed to describe the most common nursing diagnoses in patients with diabetes mellitus. The research design used was a descriptive study with a retrospective approach. The population in this study was the medical records of patients with diabetes mellitus who were admitted to the inpatient room on January 2024, totaling 104 medical records with consecutive sampling techniques. The data collection tool used was an observation sheet. The analysis technique used, namely univariate analysis, includes frequency distribution and percentage of nursing diagnoses enforced on clients with a medical diagnosis of diabetes mellitus. The results of this study found that there were 19 nursing diagnoses enforced by nurses in patients with diabetes mellitus, consisting of actual nursing diagnoses (93.2%) and risk nursing diagnoses (6.8%). The six most common nursing diagnoses in patients with diabetes mellitus are acute pain (35.6%), skin/tissue integrity disorders (14.4%), activity intolerance (10.6%), ineffective breathing patterns (7.7%), chronic pain (5.8%), and ineffective peripheral perfusion (5.8%). It can be concluded that most of the nursing diagnoses enforced in patients with diabetes mellitus are not only caused by the clinical condition of diabetes mellitus but also by complications that accompany the condition of diabetes mellitus itself. For future researchers, hopefully, it can develop research into a broader scope, such as conducting bivariate analyses of factors related to the enforcement of nursing diagnoses in diabetes mellitus patients with complications.

Keywords: Nursing Diagnosis, SDKI, Diabetes Mellitus

INTRODUCTION

Diabetes mellitus has become one of the world's medical emergencies, with the fastest-growing prevalence this century (IDF, 2021). A report from diabetes mapping conducted by the International Diabetes Federation (IDF) in 2021 showed that as many as 540 million people in the world suffered from diabetes, most of

whom came from the adult age group with an age range of 20–79 years, namely 537 million people. This number represented 10.5% of the adult population worldwide. The International Diabetes Federation (IDF) predicted that by 2045, 1 in 8 adults will have diabetes, which means that there will be an increase in the world's diabetes prevalence by 46%, or around 783 million adults in the world (IDF, 2021).

Based on data from the Basic Health Research (Riskesdas) conducted by the Ministry of Health in the period 2013–2018, almost all provinces showed an increase in the prevalence of diabetes mellitus (Kemenkes RI, 2019). The overall prevalence of diabetes mellitus in Indonesia was 2%, and West Kalimantan had a prevalence of 1.6% (Kemenkes RI, 2019). In 2021, mortality caused by diabetes in Indonesia reached 236,711 events (IDF, 2021).

According to the preliminary study conducted by the author at the Pontianak City Health Office, the estimated incidence of diabetes mellitus in 2021 in Pontianak City reached 13,791 cases. In 2022, the estimated incidence rate dropped to 13,620 cases. In 2023, the estimated incidence rate increased rapidly, from January 2023 to June 2023, reaching 14,218 cases.

To overcome public health problems, nurses have an important role in providing optimal services based on established nursing care standards (Nuraini, 2017). The nursing process consists of several stages adapted from the theory of Ida Jean Orlando, including assessment, diagnosis, intervention plan, implementation, and evaluation (Benedet et al., 2018; Yulanda et al., 2022).

One of the most important components of the nursing care process is assessment, because it is the basis for enforcing the problem or nursing diagnosis experienced by the patient (Nurjannah et al., 2017). The authority of the nursing profession in enforcing nursing diagnoses is contained in Law Number 38 About Nursing in 2014 (Mu'minah et al., 2023).

The problem in determining nursing diagnoses that frequently occur in Indonesia is that nurses usually conduct examinations that are unstructured and not under the sequence, which causes nurses confusion in determining data pairs with diagnoses that can be enforced (Nurjannah et al., 2017).

LITERATURE REVIEW

a. Concept of Diabetes Mellitus

The International Diabetes Federation (IDF) (2021) defines diabetes as a chronic condition caused by inadequate production of the hormone insulin by the pancreas and/or the body's inability to use insulin effectively. According to the Indonesian Ministry of Health (2019), diabetes mellitus is a disease characterized by increased blood sugar levels exceeding the normal threshold and is included in the metabolic disease group. A person can be considered to have a high blood sugar level if the blood sugar level is more than 200 mg/dL and the fasting blood sugar level exceeds 126 mg/dL (Abdurrahman, 2022).

Based on the International Diabetes Federation (IDF), diabetes can be classified into three main categories based on the precipitating factors: type I diabetes mellitus, type II diabetes mellitus, and gestational diabetes. In addition to the three main categories, there are also other forms of

diabetes caused by other conditions than the three main forms of diabetes mellitus, including monogenic diabetes, drug-associated diabetes, and other disease-associated diabetes.

Epidemiologically, the prevalence and incidence of type I diabetes mellitus increased, with an overall average increase of 2–5% per year. As for type II diabetes mellitus, which is the most common type of diabetes mellitus, globally it was estimated to reach 462 million cases, or equivalent to 6.28% of the world population (Khan et al., 2020).

The development of type I diabetes mellitus begins with damage to pancreatic beta cells caused by an autoimmune process, a viral infection, or a combination of both. This damage will lead to insulin deficiency conditions, which will eventually cause hyperglycemia and diabetes mellitus (Sulastri & Harjati, 2023). Meanwhile, type II diabetes mellitus is influenced by two conditions, namely insulin resistance and impaired insulin secretion, which will then lead to a condition of systemic insulin resistance and ultimately cause type II diabetes mellitus (Galicia-Garcia et al., 2020).

To improve their quality of life, patients with diabetes mellitus must undertake a series of treatments. This treatment has short-term and long-term goals. The short-term goals aimed to be achieved were to provide comfort to the patient as well as reduce complaints about symptoms that arise and achieve blood sugar stability. The long-term goals of the treatment are to inhibit the development of microangiopathy, macroangiopathy, and neuropathy (Fatimah, 2015).

Patients with diabetes mellitus who are not treated appropriately will be at risk of developing various complications. The complications of diabetes mellitus can be grouped into two categories: acute metabolic complications and long-term vascular complications. Acute metabolic complications in diabetes mellitus consist of hypoglycemia and hyperglycemia crises. Meanwhile, long-term vascular complications are also divided into two, namely macroangiopathy and microangiopathy (Sulastri & Harjati, 2023).

The condition of diabetes mellitus and its accompanying complications can cause various nursing problems. According to the SDKI, there were several nursing diagnoses related to the clinical condition of diabetes mellitus, some of which were instability of blood glucose levels, risk of electrolyte imbalance, and readiness to improve health management (PPNI, 2016). This is supported by one of the journal articles that mentions the instability of glucose levels and the risk of electrolyte imbalance as nursing diagnoses related to the clinical condition of diabetes mellitus (Khoirunnisa & Hastuti, 2023).

b. Concept of Nursing Diagnosis

The Indonesian National Nurses Association (PPNI) (2016), in the Indonesian Nursing Diagnosis Standards

book, defines nursing diagnosis as a clinical assessment by nurses regarding client responses to actual or potential problems that occur related to their health conditions and life processes.

As opposed to medical diagnosis, nursing diagnosis is based on a conceptual model of basic human needs. In general, it aims to help nurses find answers to problems associated with individuals, identify environmental factors that may affect them, and describe the client's health condition. The answer to the nursing diagnosis will inform the decision-making on the nursing actions that will be received by the client (Berman et al., 2021).

The SDKI divides nursing diagnoses into five categories adapted from international classification standards, namely the International Classification of Nursing Practice (ICNP). The five categories are physiological, psychological, behavioral, relational, and environmental (PPNI, 2016).

Based on the Indonesian Nursing Diagnosis Standards book (SDKI), there are two types of nursing diagnoses, namely negative nursing diagnoses and positive nursing diagnoses. A negative nursing diagnosis will lead to curative, rehabilitative, and preventive nursing actions because a negative nursing diagnosis indicates that the client is sick or at risk of getting sick. Negative nursing diagnosis is divided into two types, namely actual diagnosis and risk diagnosis (PPNI, 2016). Whereas a positive nursing diagnosis focuses on promotional action, patients who receive a positive nursing diagnosis do not have health problems and have the potential to improve their health to the optimal stage. Included in a positive nursing diagnosis is a nursing promotion diagnosis (PPNI, 2016).

A good nursing diagnosis is a nursing diagnosis that has complete diagnostic components. The main components of a nursing diagnosis are divided into two categories: the diagnosis label and diagnostic indicators. The diagnosis label consists of one or more words that describe the client's response to their health condition. The diagnosis label is divided into two parts: the descriptor and the diagnostic focus. A descriptor is a sentence that states how a diagnostic focus can occur (PPNI, 2016).

The next component of nursing diagnosis is diagnostic indicators. Diagnostic indicators are divided into 3 parts, namely etiology, signs and symptoms, and risk factors. Etiology, also known as precipitating factors, are factors that cause changes in client health status. There are four types of etiology: physiological, biological, or psychological; the effects of therapy or action; situational; and maturational (PPNI, 2016).

Signs and symptoms are objective and subjective data obtained by nurses through anamnesis, physical examination, and supporting examinations such as laboratory results. In the Indonesian Nursing Diagnosis Standards (SDKI), signs and symptoms are divided into two categories, namely major signs and symptoms and minor signs and symptoms. Major signs and symptoms must be found at least at 80% to be able to

validate the diagnosis. Meanwhile, minor signs and symptoms do not have to be identified, but if they are present, they will strengthen the diagnosis (PPNI, 2016).

There are differences in diagnostic indicators between actual nursing diagnoses, risk nursing diagnoses, and health promotion diagnoses. Actual nursing diagnoses consist of indicators of etiology and signs and symptoms. Risk nursing diagnosis only consists of risk factor indicators. Meanwhile, health promotion diagnosis only consists of signs and symptoms indicators that describe the client's condition and are ready to improve his quality of life to an optimal stage (Berman et al., 2021).

There are several steps that nurses must take in enforcing a nursing diagnosis, namely the data analysis stage, problem identification, and nursing diagnosis formulation. At the data analysis stage, the nurse compares the data obtained from the assessment results with normal values and classifies the data according to the related nursing diagnosis. After that, at the problem identification stage, the nurse, together with the client, determines the problem—both actual problems and risks. After determining the problem, the nurse formulates a diagnosis.

Diagnosis formulation can use two methods, namely basic two-part statements or two-part writing and basic three-part statements or three-part writing. Writing with the two-part method consists of problems and etiologies. Risk diagnosis uses the format "(problem) evidenced by (risk factor)," while health promotion diagnosis uses the format "(problem) evidenced by (sign or symptom)" (Berman et al., 2021). The three-part method of diagnosis formulation is commonly used for actual nursing diagnoses. The writing format is "(problem) related to (etiology) characterized by (signs/symptoms)" (PPNI, 2016).

Problem Formulation

Related to the problems that have been described, this research is considered important to be carried out in order to get an overview and information related to nursing diagnoses that were enforced in patients who had a medical diagnosis of diabetes mellitus. Researchers were interested in conducting this study with the problem formulation, "What are the most common nursing diagnoses enforced in diabetes mellitus patients with complications?".

Purpose

This study was aimed at describing the most common nursing diagnoses enforced on patients with diabetes mellitus with complications.

METHOD

This study was included in the type of descriptive research using a retrospective approach with a documentation study method conducted in the medical record room of one of the hospitals in West Kalimantan. The population in this study consisted of all medical records of inpatients with a medical diagnosis of diabetes mellitus who were treated o n January 2024. The data collection process was carried out from March 8 to 16, 2024. The

sampling technique used was consecutive sampling, namely the selection of samples according to the inclusion and exclusion criteria that have been determined within a certain period of time.

In the process of collecting data for this study, researchers used a documentation study approach with observational techniques. Therefore, the instrument used is an observation sheet containing assessment data and nursing diagnosis. After obtaining the data needed, researchers went through 4 stages of data processing, namely coding, editing, entry, and cleaning.

RESULT

Table 1. Frequency Distribution of Nursing Diagnoses Enforced in Diabetes Mellitus Patients with Complications

Nursing Diagnosis	Frequency (f)	Persentage (%)
Acute Pain	37	35.6
Skin/Tissue Integrity Disorders	15	14.4
Activity Intolerance	11	10.6
Ineffective Breathing Pattern	8	7.7
Chronic Pain	6	5.8
Ineffective Peripheral Perfusion	6	5.8
Risk of Ineffective Cerebral Perfusion	5	4.8
Nutrient Deficit	3	2.9
Hypovolemia	2	1.9
Hypervolemia	2	1.9
Nausea	1	1.0
Ineffective Airway Clearance	1	1.0
Risk of Nutrient Deficit	1	1.0
Anxiety	1	1.0
Impaired Sensory Perception	1	1.0
Impaired Verbal Communication	1	1.0
Impaired Physical Mobility	1	1.0
Hyperthermia	1	1.0
Risk of Infection	1	1.0
Total	104	100.0

Source: Secondary data processed in 2024

Based on Table 1, it can be seen that almost half of the nursing diagnoses enforced in patients with diabetes mellitus are acute pain nursing diagnoses, which amounted to 37 nursing diagnoses out of a total of 104 samples (35.6%). The next nursing diagnosis in patients with diabetes mellitus is skin/tissue integrity disorders with a frequency of 15 (14.4%), activity intolerance as much as 11 (10.6%), ineffective breathing patterns as much as 8 (7.7%), chronic pain and ineffective peripheral perfusion each as much as 6 (5.8%), risk of ineffective cerebral perfusion as much as 5 (4.8%), nutrient deficit as much as 3 (2.9%), hypervolemia and hypovolemia as much as 2 (1.9%), and ineffective

airway clearance, risk of nutrient deficit, physical mobility impairment, nausea, anxiety, impaired sensory perception, impaired verbal communication, hyperthermia, and risk of infection as much as 1 (1%).

DISCUSSION

From the 104 samples analyzed, the results showed that the 3 most common nursing diagnoses were acute pain, skin/tissue integrity disorders, and activity intolerance. These nursing diagnoses are those that can occur due to complications of diabetes mellitus.

Some complications of diabetes mellitus can cause acute pain complaints, namely diabetic ulcers, DM neuropathy, and KAD (Paschou et al., 2018; Rachmantoko et al., 2021; Shahid et al., 2020). Based on the data obtained by the researchers, there were 37 patients who experienced acute pain nursing problems, some of whom had complications of diabetic ulcers (3 patients), DM neuropathy (2 patients), and KAD (3 patients). The other 29 were nursing diagnoses of patients who did not have complications or patients with other complications, such as hypovolemia shock, hypoglycemia phase, hypertension, and hypernatremia.

The nursing diagnosis of skin/tissue integrity disorders can be caused by several complications of diabetes mellitus, such as diabetic ulcers, diabetic cellulitis, abscesses, and necrosis (Alviani et al., 2024; Amalia et al., 2024; Sari & Musta'in, 2021). In this study, there were 15 patients who had nursing problems with skin/tissue integrity disorders, including patients with diabetic ulcer complications (8 patients), diabetic cellulitis (1 patient), abscesses (2 patients), and necrosis (1 patient). While the other 3 are patients with other complications.

As for the nursing diagnosis of intolerance, it has a frequency of 11, which includes diabetes mellitus patients with complications of hyponatremia, HHS, vomitus, DM neuropathy, and DM renopathy. However, even if there are no associated clinical conditions, a nursing diagnosis with the nursing problem of activity intolerance can still be established if 80% of the major signs/symptoms are found in the assessment and there is a clear etiology.

In the research data, there are nursing problems that are not related to the clinical condition of diabetes mellitus, some of which are ineffective airway clearance, ineffective breathing patterns, the risk of ineffective cerebral perfusion, nutrient deficits, the risk of nutritional deficits, hypovolemia, hypervolemia, nausea, impaired sensory perception, impaired physical mobility, risk of infection, and hyperthermia. Meanwhile, nursing diagnoses have links to clinical conditions of diabetes mellitus, including chronic pain, ineffective peripheral perfusion, and anxiety (PPNI, 2016).

Based on the discussion above, it can be seen that in making nursing diagnoses, nurses are not fixated on nursing diagnoses that have links to clinical conditions related to diabetes mellitus alone. In establishing a nursing diagnosis, there are other things that are considered, such as risk factors and signs/symptoms data obtained during the assessment process.

CONCLUSION

Based on the results of the research and discussion that have been presented, it can be concluded that:

1. The most common nursing diagnoses in patients with diabetes mellitus are acute pain, impaired skin/tissue integrity, and activity intolerance.
2. In enforcing nursing diagnoses, related clinical conditions are not the only things that nurses pay attention to. In enforcing nursing diagnoses, there are other things to consider, such as risk factors and sign/symptom data obtained during the assessment process, as well as the condition of complications from diabetes mellitus itself.

Suggestion

1. For educational institutions, the results of this study are expected to be used as a reference source in the learning process of nursing study programs, especially in the field of nursing process.
2. For future researchers, hopefully, it can develop research into a broader scope, such as conducting bivariate analyses of factors related to the enforcement of nursing diagnoses in patients with diabetes mellitus.
3. For nurses and health agencies, the results of this study are expected to be taken into consideration as a source of reference in enforcing nursing diagnoses, especially in patients with diabetes mellitus who have complications.

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