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HEALTH EDUCATION ABOUT SELF-CARE FOR PATIENTS WITH DIABETES MELLITUS

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Abstract

Diabetes Mellitus (DM) is a metabolic disease that is mostly hereditary, with signs of hyperglycemia and glucosuria, accompanied by or without acute or chronic clinical symptoms, as a result of a lack of effective insulin in the body, the primary disorder lies in carbohydrate metabolism which is usually accompanied by also disorders of fat and protein metabolism. Diabetes mellitus is a hyperglycemic disease characterized by the absolute absence of insulin or cell insensitivity to insulin (Yasa, 2022). Diabetes mellitus is a chronic, progressive disease characterized by the body's inability to metabolize carbohydrates, fats and proteins, leading to hyperglycemia (high blood glucose levels) (Maria, 2021). There are several factors that can cause this disease, one of which is: Family history of DM (first degree relative), age, obesity, hypertension, unbalanced diet. One method of overcoming the problem of diabetes mellitus in nursing is by providing interventions based on patient needs, one of which is providing health education to improve self-care or self-care. This method has of course been tested by Purqoti et al (2022) that there is an increase in knowledge after being given health education. . The results of this activity aim to provide an overview of nursing care for Diabetes Mellitus patients with lack of knowledge, some nursing problems, the nursing intervention provided is Health Education about Self Care for Patients with Diabetes Mellitus.

Keywords: Health Education, Diabetes Mellitus

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Abstrak

Diabetes Mellitus (DM) adalah penyakit metabolik yang kebanyakan herediter, dengan tanda-tanda hiperglikemia dan glukosuria, disertai dengan atau tidak adanya gejala klinik akut ataupun kronik, sebagai akibat dari kuranganya insulin efektif di dalam tubuh, gangguan primer terletak pada metabolisme karbohidrat yang biasanya disertai juga gangguan metabolism lemak dan protein. *Diabetes mellitus* adalah penyakit hiperglikemia yang ditandai oleh ketiadaan absolut insulin atau insensitifitas sel terhadap insulin (Yasa, 2022). Diabetes melitus adalah penyakit kronis progresif yang ditandai dengan ketidakmampuan tubuh untuk melakukan metabolism karbohidrat, lemak dan protein, mengarah ke hiperglikemia (kadar glukosa darah tinggi) (Maria, 2021). Ada beberapa faktor yang dapat menyebabkan terjadinya penyakit ini, salah satunya adalah: Riwayat keluarga dengan DM (*first degree relative*), Umur, Obesitas, Hipertensi, Diet tidak seimbang. Salah satu metode dalam mengatasi masalah diabetes mellitus pada keperawatan adalah dengan memberikan intervensi berdasarkan kebutuhan pasien, salah satunya memberikan edukasi kesehatan untuk meningkatkan perawatan diri atau *Self Care*, metode ini tentunya telah teruji oleh Purqoti dkk (2022) bahwa terjadinya peningkatan pengetahuan setelah diberikan edukasi Kesehatan. Hasil kegiatan ini bertujuan memberikan gambaran asuhan keperawatan pada pasien *Diabetes Mellitus* dengan masalah kurang pengetahuan, sebagain masalah keperawatan, intervensi keperawatan yang diberikan adalah Edukasi Kesehatan tentang *Self Care* pada Pasien Penderita *Diabetes Mellitus*.

***Kata Kunci**:* Edukasi Kesehatan, Diabetes Mellitus

Introduction

Diabetes mellitus is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces. Uncontrolled increases in blood glucose can cause serious damage to the heart, blood vessels, eyes, kidneys and nerves (WHO, 2016). Many people still think that this disease is a disease of parents or a disease that only arises due to hereditary factors. Many people do not realize they have this disease.

In the world, around 425 million people or 8.8% of adults aged 20-79 years are estimated to suffer from diabetes. About 79% live in low- and middle-income countries. The number of sufferers increases to 451 million if the age increases to 18-99 years. It is estimated that in 2045, it will increase to 693 million people aged 18-99 years or 629 million people aged 20-79 years. Indonesia is ranked seventh highest along with China, India, the United States, Brazil, Russia and Mexico with an estimated number of sufferers at 10 million (IDF, 2017).

Riskedas 2018 stated that diabetes mellitus cases in Indonesia are one of the top 10 diseases experienced by the elderly. Elderly people experience many physical, psychological, social and economic changes often with increasing age. And this also has an impact on changing the quality of life of the elderly themselves. So it is important for elderly people with diabetes mellitus to understand their conditions and changes in their life patterns, to achieve successful aging (aging successfully). Being happy with diabetes is one of the keys for seniors to successfully grow old together (Kemenkes RI, 2019).

BASIC CONCEPTS OF DIABETES MELLITUS

Diabetes Mellitus (DM) is a metabolic disease that is mostly hereditary, with signs of hyperglycemia and glucosuria, accompanied by or without acute or chronic clinical symptoms, as a result of a lack of effective insulin in the body, the primary disorder lies in carbohydrate metabolism which is usually accompanied by also disorders of fat and protein metabolism. Diabetes mellitus is a hyperglycemic disease characterized by the absolute absence of insulin or cell insensitivity to insulin (Yasa, 2022).

Diabetes mellitus (DM) is a common chronic disease in adults that requires continuous medical supervision and self-care education for patients. Diabetes mellitus is a chronic, progressive disease characterized by the body's inability to metabolize carbohydrates, fats and proteins, leading to hyperglycemia (high blood glucose levels) (Maria, 2021).

Diabetes mellitus (DM) is a metabolic disease characterized by hyperglycemia that occurs due to abnormalities in insulin secretion, insulin action or both. Diabetes mellitus is caused by the failure of the pancreas organ to produce adequate amounts of the hormone insulin, causing an increase in blood sugar levels (Imelda et al, 2022).

According to Smeltzer and Bare (2013), there are several causes of Diabetes Mellitus, namely genetic factors, immunological factors, environmental factors, age, obesity, trauma or infection. Factors that can cause this disease, one of which is: Family history of DM (first degree relative), Age, Obesity, Hypertension, Unbalanced diet (Maria, 2021).

The clinical manifestations are as follows: Type I Diabetes; Fasting hyperglycemia, Glucosuria, osmotic diuresis, polyuria, polydipsia, polyphagia, Fatigue and weakness, Diabetic ketoacidosis (nausea, abdominal pain, vomiting, hyperventilation, fruity breath, changes in level of consciousness, coma, death). Meanwhile, Type II Diabetes; Slow (over years), progressive glucose intolerance, Symptoms are often mild including fatigue, irritability, polyuria, polydipsia, slow-healing skin sores, vaginal infections, blurred vision, Long-term complications (retinopathy, neuropathy, peripheral vascular disease) (Imelda et al, 2022).

According to Smeltzer and Bare (2013), the pathophysiology of diabetes mellitus is: In type I diabetes there is an inability to produce insulin because the pancreatic beta cells have been destroyed by an autoimmune process. Fasting hyperglycemia occurs due to unmeasured glucose production by the liver. When excess glucose is excreted in the urine, this excretion will be accompanied by excessive fluid and electrolyte excretion. This condition is called osmotic diuresis. As a result of excessive fluid loss, patients will experience increased urination (polyuria) and thirst (polydipsia). Insulin deficiency also disrupts protein and fat metabolism, causing weight loss. Patients may experience increased appetite (polyphagia) due to decreased calorie stores. Other symptoms include fatigue and weakness. This process will occur without obstacles and further contribute to hyperglycemia.

In type II diabetes, there are two problems related to insulin, namely insulin resistance and impaired insulin secretion. Normally insulin will bind to special receptors on the cell surface. As a result of insulin binding to this receptor, a series of reactions occur in glucose metabolism in cells. Insulin resistance in type II diabetes is accompanied by a decrease in these intracellular reactions. Thus, insulin becomes ineffective in stimulating glucose uptake by tissues.

Due to slow and progressive glucose intolerance, the onset of type II diabetes can go undetected. If the

patient does experience symptoms, they are often mild and can include fatigue, irritability, polyuria, polydipsia, wounds that take a long time to heal, vaginal infections or blurred vision (if glucose levels are very high). Diabetes causes disorders/complications through damage to blood vessels throughout the body, called diabetic angiopathy. This disease is chronic and is divided into two, namely disorders of the large blood vessels (macrovascular) called macroangiopathy, and those of the fine blood vessels (microvascular) called microangiopathy. Peripheral sensory neuropathy allows repeated trauma to occur resulting in tissue damage under the callus area. Next, a cavity forms which enlarges and eventually ruptures to the surface of the skin, causing an ulcer. The presence of ischemia and abnormal wound healing hinder resolution. The microorganisms that enter colonize this area. Inadequate drainage causes closed space infection. Finally, as a consequence of an abnormal immune system, bacteria are difficult to clean and the infection spreads to surrounding tissues.

ASSESSMENT

This assessment is carried out by taking an anamnesis on the patient. Complete data collected or studied includes:

1. Health History
    a. Main complaints: Symptoms that will be experienced include tingling in the legs, tiredness/tiredness, blurred vision, frequent urination (polyuria) especially at night, often feeling thirsty (polodipsia), often feeling hungry so you eat a lot (polyphagia) (Imelda et al, 2022).
    b. Past Health History. It is necessary to ask whether the patient has previously been hospitalized with the same complaint.
    c. Family Health History. You need to ask whether there are family members who have a history of the same disease as the sufferer.
2. Physical Examination
    a. General health status
    Includes the patient's condition, consciousness, speaking voice, height, weight and vital signs.
    b. Head and neck
    Assess the shape of the head, the condition of the hair, is there enlargement of the neck, the ears sometimes ring, is there hearing loss, the tongue often feels thick, the saliva becomes thicker, the teeth become loose easily, the gums swell and bleed easily, is the vision blurred/double, diplopia, cloudy eye lens.
    c. Integumentary system
    Decreased skin turgor, presence of wounds or blackish scars, moisture and temperature of the skin in the

area around the ulcer and gangrene, redness of the skin around the wound, hair and nail texture.

d. Respiratory system
   Is there shortness of breath, cough, sputum, chest pain. In DM sufferers, infection occurs easily.
e. Cardiovascular system
   Decreased tissue perfusion, weak or reduced peripheral pulses,
   tachycardia/bradycardia,
   hypertension/hypotension,
   arrhythmia, cardiomegaly.
f. Gastrointestinal system
   There is polyphagia, polydipsia, nausea, vomiting, diarrhea, constipation, dehydrase, changes in body weight, increased abdominal circumference, obesity.
g. Urinary system
   Polyuria, urinary retention, urinary incontinence, burning sensation or pain when urinating.
h. Musculoskeletal system
   Spread of fat, spread of muscle mass, changes in height, fatigue, weakness and pain, gangrene in the extremities.
i. Neurological system
   There is sensory loss, parasthesia, anesthesia, lethargy, drowsiness, slow reflexes, mental confusion, disorientation (Maria, 2021).

NURSING DIAGNOSES

1. Acute pain related to the physical injury agent (part of the DM)
2. Ineffective tissue perfusion related to decreased peripheral blood supply
3. Fluid volume deficiency related to osmotic diuresis (from hyperglycemia).
4. Imbalanced nutrition, less than body requirements, is related to the body's inability to absorb nutrients.
5. Lack of knowledge about disease is related to lack of information (Maria, 2021).

SUMMARY OF CASES MANAGED

Mr. A is 82 years old, the client currently lives at the True Love Nursing Home and is currently the person responsible for the client at the Nursing Home. During the assessment on May 16 2023 at the True Love Kabil Nongsa Nursing Home with interviews with clients and people in charge of the Nursing Home. Mr. A said he couldn't walk, there was a wound on his big toe which had been amputated. Clients say they lack knowledge about health problems regarding Diabetes Mellitus. The nursing home said the client routinely took metformin twice a day.

Based on the assessment carried out, there were 3 diagnoses made, namely: Acute pain related to a physical injury agent (the part experiencing DM); Ineffective tissue

perfusion related to decreased peripheral blood supply; Lack of knowledge about the disease is related to lack of information.

DISCUSSION

Nursing interventions that have been carried out on the client Mr. A with the problem of Diabetes Mellitus at the True Love Kabil Nongsa Nursing Home, namely providing health education about self-care or Self Care to increase clients' knowledge about the problem of Diabetes Mellitus. Providing education in stages to the intervention group was successful in improving self-care.

Education that can be carried out for diabetes patients is Diabetes Self-management Education and Support (DSME/S). DSME/S is a program designed with the aim of improving patients' health, knowledge, family support, financial status, disease history and other factors that can influence the patient's activities in efforts to carry out self-care (Indriyawati et al, 2022). DSME/S is carried out in the form of discharge planning. Discharge planning is a prevention and planning process that is required by patients and their families after they have completed treatment at the hospital and will return home to continue comprehensive health care, this is carried out for every patient care plan (Pratiwi, 2020).

Research conducted by Dafriani (2018) found a relationship between diet and physical activity on the incidence of DM, so it is hoped that it is necessary to regulate diet and carry out regular physical activity, especially for people who have DM.

Research conducted by Salamung (2020) states that lifestyle education has a positive impact on blood sugar control. So it is hoped that with education from the health team, the level of knowledge of diabetes sufferers will increase in managing their lifestyle and can be applied in everyday life. in order to continue to control blood sugar in diabetes mellitus sufferers.

Knowledge will increase by providing Health Education, this is in line with research by Purqoti et al (2022) which also states that providing health promotion can increase client and family knowledge of related problems.

CONCLUSION

Based on the nursing care provided to Mr. A with a diagnosis of diabetes mellitus. There are many health problems that arise in diabetes mellitus sufferers, one of which is a lack of knowledge, therefore by providing health education to clients it will help clients and nursing home staff increase their knowledge of self-care or client self-care and can apply it in everyday life. -day so that it can control diabetes mellitus.

RECOMMENDATION

It is hoped that the Nursing Home will be better able to understand and

comprehend the definition of diabetes mellitus and be able to apply self-care to clients suffering from diabetes mellitus.

References

Brunner & Suddart, 2013, *Buku Ajar Keperawatan Medikal Bedah,* Vol 3, Edisi 8, Penerbit RGC, Jakarta.

Dafriani, P. (2018). Hubungan Pola Makan dan Aktifitas Fisik Terhadap Kejadian Diabetes Melitus di Poliklinik Penyakit Dalam RSUD dr. Rasidin Padang. *NERS Jurnal Keperawatan*, *13*(2), 70. https://doi.org/10.25077/njk.13.2.70-77.2017

Imelda, Fatwa. Dkk. (2022). *Pengelolaan Asuhan Keperawatan Dikomunitas Dengan Kasus Diabetes Melitus, Kolestrol Dan Asam Urat.* Bandung : Media Sains Indonesia.

Indriyawati, N., Dwiningsih, S. U., Sudirman, S., & Najihah, R. A. (2022). Upaya Peningkatan Kualitas Hidup Lansia dengan Penyakit Diabetes Mellitus (DM) melalui Penerapan Management Diri. *Poltekita: Jurnal Pengabdian Masyarakat*, *3*(2), 301–308. https://doi.org/10.33860/pjpm.v3i2.1061

IDF. (2017). Diabetes Atlas Eighth Edition, International Diabetes Federation 2017. (http://www.diabetesatlas.org/resources/2017-atlas.html). Diakses 23 Agustus 2023 jam 16.00 WIB.

Kemenkes RI. (2019). Hasil Utama 2018, Badan Penelitian dan Pengembangan Kemenkes RI

Maria, Insana. (2021). *Asuhan Keperawatan Diabetes Melitus Dan Asuhan Keperawatan Stroke.* Yogyakarta : Deepublish.

NANDA. (2015). Buku diagnosa keperawatan definisi dan klasifikasi 2015-2017. Jakarta: EGC.

Pratiwi, E. A. (2020). Efektifitas Diabetes Self-management Education Terhadap Self Care Behavior Penderita Diabetes Mellitus : Sebuah Tinjauan Sistematis (STIKES Bina Husada Palembang). Retrieved from https://nursingjurnal.respati.ac.id index.php/JKRY/article/view/309

Purqoti, D. N. S., Arifin, Z., Istiana, D., Ilham, I., Fatmawati, B. R., & Rusiana, H. P. (2022). Sosialisasi konsep penyakit Diabetes Mellitus untuk meningkatkan pengetahuan Lansia tentang Diabetes Mellitus. *ABSYARA: Jurnal Pengabdian Pada Masyarakat*, *3*(1), 71–78. https://doi.org/10.29408/ab.v3i1.5771

Reswan, H., Alioes, Y., & Rita, R. S. (2017). Gambaran Glukosa Darah pada Lansia di Panti Sosial Tresna Werdha Sabai Nan Aluih

Sicincin. Jurnal Kesehatan Andalas, 673-678.

Salamung, N. (2020). Pengaruh Edukasi Gaya Hidup Terhadap Kontrol Gula Darah Pada Penderita Diabetes Mellitus: a Systematic Review. *Pustaka Katulistiwa: Karya Tulis Ilmiah ...*, *1*, 2010–2013. https://journal.stik-ij.ac.id/Keperawatan/article/view/39

Susiani, A. (2022). *Asuhan Keperawatan pada Keluarga yang Mengalami Diabetes Mellitus Tipe II dengan Perubahan Nutrisi Kurang dari Kebutuhan Tubuh di RW 09 Kelurahan Rawa Badak Utara Kecamatan Koja*. *14*(2), 48–54.

WHO. (2016). Global Report On Diabetes. (http://www.google.co.id/url?sa=t&source=web&rct=j&url=http://apps.who.int/iris/bitstream/) diakses 23 Agustus jam 16.00 WIB.

Yasa, Putra. Dkk. (2022). *Tatalaksana Diabetes Melitus Berbasis Evidence-Based Pratice.* Bandung: Media Sains Indonesia.