



FAMILY NURSING CARE FOR Mr. S ON THE PATIENT TYPE II DIABETES MELLITUS WITH A FOCUS ON ACTION FOOT EXERCISES TO LOWER BLOOD SUGAR BLOOD AT THE PUBLIC HEALTH CENTER AREA MANDIRAJA I DISTRICT BANJARNEGARA

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DOI: <https://doi.org/10.62567/micjo.v2i2.491>

Article info:

Submitted: 13/01/25

Accepted: 21/04/25

Published: 30/04/2

Abstract

Background: Indonesia is currently facing a double burden of diseases, namely infectious diseases and non-communicable diseases, one of which is diabetes mellitus. Diabetes mellitus is a metabolic disorder with insufficient insulin produced by the body. **Objective:** The purpose of this study was to carry out family nursing care with diabetes mellitus using foot exercises to reduce blood sugar levels during. **Methods:** The subject of this study was a patient with diabetes mellitus who focused on family nursing care foot exercises as a complementary therapy. The research was conducted in the Mandiraja 1 health center area of Banjarnegara district. This research uses descriptive methods in the form of case studies. **Results:** Case studies on Mr. S clients with diabetes mellitus, the results showed that foot exercises can reduce blood sugar levels during the 3 visits to do foot exercises a week. **Conclusion:** The conclusion of the family case of Mr. S as a patient with diabetes mellitus is that the problem is resolved as expected. After implementation for 3 visits, the evaluation results found that Mr. S family for the diagosa found. S's family for the diagosa found.

Keywords: Nursing care, diabetes mellitus, foot exercises.

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1. INTRODUCTION

Non-communicable diseases, abbreviated as NCD (in English: non-communicable disease), are diseases that do not directly transfer from one individual to another. These types of diseases include Parkinson's disease, autoimmune diseases, strokes, most cardiovascular diseases, cancer, diabetes, chronic kidney failure, osteoarthritis, osteoporosis, Alzheimer's disease, cataracts, and others. In 2016, NCDs caused 74% of deaths worldwide, killing 36 million people per year. Deaths caused by NCDs amounting to 74% include 35% due to heart and blood vessel diseases, 12% due to cancer, 6% due to chronic respiratory diseases, 6% due to diabetes, and 15% due to other NCDs. This is supported by the research of Dinata et al., (2022).

Diabetes Mellitus (DM) is a chronic disease characterized by elevated blood sugar levels (hyperglycemia) and glucose intolerance, which occurs due to the pancreas producing inadequate insulin or the body being unable to effectively use the insulin produced. This is supported by the research of Pangestika et al., (2022). The prevalence of Diabetes Mellitus in Indonesia ranks 7th among 10 countries with the highest number of sufferers, totaling 10.7 million. This is supported by the research of Widiyari et al., (2021). In Central Java, the prevalence of Diabetes Mellitus in 2018 was 1.59%, covering all age groups (Wibisono, 2021).

Effective management will reduce the level of complications, preventing further complications that could harm Diabetes Mellitus patients. The handling actions carried out by the healthcare/medical team include pharmacological therapy and non-pharmacological therapy. The management of pharmacological therapy includes the administration of insulin and oral hypoglycemic agents. Pharmacological therapy is essentially given if the non-pharmacological therapy that has been implemented cannot control blood sugar levels to approach normal levels, but the administration of this therapy does not abandon the non-pharmacological therapy that has been applied. The selection of the right medication is crucial for the success of the therapy.

Based on the same statement, the research conducted by Ubo and Khair (2019) concludes that diabetic foot exercises can influence blood sugar levels. This can occur because physical activity or exercise directly relates to the increased rate of muscle glucose recovery (how much glucose the muscles take from the bloodstream). In the research journal conducted by Piko (2022),



based on the analysis results, the blood sugar level before the diabetic exercise in patient I was 238 mg/dl, and the analysis results showed that the blood sugar level after the diabetic exercise in patient I was 190 mg/dl. Based on the research results, the researcher concluded that the difference in blood sugar levels before and after diabetic exercise over three days for patient I was 30 mg/dl on the first day, 80 mg/dl on the second day, and 48 mg/dl on the third day. The results of the comparative analysis showed that the blood sugar level before and after performing diabetic exercises on patient I over three days was 48 mg/dl. The purpose of this writing is to determine the difference before and after nursing care was provided to diabetes mellitus patients, focusing on foot exercises to lower blood sugar levels. The benefit of this writing is to serve as a new source of data and to provide development and insights into knowledge and health nursing regarding nursing care for diabetes mellitus patients with a focus on foot exercises to lower blood sugar levels.

2. RESEARCH METHOD

This writing is a case study in the field of family nursing, and this case study was conducted on Mr. S, a patient with diabetes mellitus, using the SOAP method and physical activity therapy (foot exercises) to lower blood sugar levels. This therapy was conducted over a period of 3 days from June 11, 2024, to June 13, 2024, in the Mandiraja I health center area, Banjarnegara district.

Sub-bab (optional, rata kiri dan bold)

3. RESULTS AND DISCUSSION

Based on the assessment results and data analysis, the nursing problems that arise in Mr. S are the risk of blood glucose instability due to uncontrolled medication management and a deficit in diabetes mellitus knowledge due to lack of information exposure. In this case, the author focuses on the main nursing diagnosis, so the priority of the diagnosis aligns with what the patient is complaining about. After conducting an assessment and establishing a diagnosis, the next step is to plan nursing actions, also known as nursing interventions. At this intervention stage, the author formulates interventions using diabetic foot exercises to lower blood sugar levels.

First day: the author provided health education about diabetes mellitus and also gave information and taught about foot exercises as actions that can be used to lower blood sugar levels in the body with non-pharmacological techniques, which clients can perform when blood sugar levels are high, marked by easy fatigue during activities, cold sweating, and numbness in the soles of the feet. Knowledge and information are very much needed by the family, because the family is the primary caregiver and the main supporter for the care and treatment of its family members. Therefore, the family needs to receive a lot of health information as a foundation for the family to provide care. The family's response was very cooperative and actively asked questions about diabetes foot



exercises; according to the family, this foot exercise technique is not yet familiar among the general public. The importance of the family's ability to care for their sick family members based on their knowledge, insight, attitude, and behavior in caring for the patient. Day 2: The author evaluates the extent to which the client and family understand what has been conveyed and taught by the author in the previous meeting, by asking again about diabetes mellitus and observing the client performing diabetes mellitus foot exercise techniques independently as taught. The client and family are willing to do what the nurse teaches and are able to perform what has been taught, but for the diabetic foot exercise technique, they still need assistance because the family has not yet memorized the diabetic foot exercise technique systematically or in order. diabetes mellitus foot exercises have benefits for controlling blood sugar and providing psychological advantages. On the 3rd day, the author evaluated the extent to which the client and family could practice the diabetic foot exercise techniques independently as taught by the author. The family's response indicates that they can already perform the diabetic foot exercise techniques on the client, and the family appears capable of performing the diabetic foot exercise techniques independently and can demonstrate them without the nurse's assistance. It is hoped that diabetic foot exercises using this non-pharmacological technique can help and be used as an initiative to lower blood sugar levels in the body, especially to provide comfort to patients, which can be done independently by clients or families at home. The role of the family is crucial for the client's recovery because the family is the main support system, as they are involved 24 hours a day compared to nurses who are only present for 8 hours. Family involvement in patient care will improve outcomes optimally compared to if care is only provided individually. After the nursing implementation was carried out over 3 visits, the evaluation results indicated that the patient and family have started to understand the client's complaints and have taken non-pharmacological actions, namely foot exercise techniques.

Table 1.0 Implementation Results

Implementation	Before	After
Day 1 Time : 12.10PM WIB	201mg/dl	195mg/dl
Day 2 Time : 06.15AM WIB (fasting state)	136mg/dl	125mg/dl
Day 3 Time : 15.15PM WIB	174mg/dl	156mg/dl

Based on the table above, it can be seen that the respondent experienced a decrease in blood sugar levels after performing foot exercises. After the implementation of nursing care over 3 visits, the evaluation results indicate that Mr. S is now able to perform foot



exercises well and independently. On the second day after performing foot exercises, the client said his feet felt quite light and the tingling had decreased. On the first day of the study, Mr. S's GDS was 201 mg/dl, and on the last day of the study, it decreased to 156 mg/dl.

Sub-bab (optional, rata kiri dan bold)

4. CONCLUSION

After the implementation was carried out over 3 visits, the evaluation results showed that Mr. S's family had a diagnosis of diabetes mellitus knowledge deficit due to lack of information exposure. This issue was resolved as the family could explain in more detail about diabetes mellitus. The second diagnosis was the risk of unstable blood glucose levels, which was partially resolved based on development records using the SOAP method and physical activity therapy (foot exercises) that influenced lowering blood sugar levels in the client with diabetes mellitus from an initial GDS of 201 mg/dl to 156 mg/dl.

5. REFERENCES

- Adli, F. K. (2021). Diabetes Melitus Gestasional : Diagnosis dan Faktor Risiko. Jurnal Medika Utama, 03(01), 1545–1551. <https://jurnalmedikahutama.com/index.php/JMH/article/view/312> Diakses pada tanggal 22 Januari 2024
- Almasdy, D., Sari, D. P., Suhatri, S., Darwin, D., & Kurniasih, N. (2021). Evaluasi Penggunaan Obat Antidiabetik Pada Pasien Diabetes Melitus Tipe-2 di Suatu Rumah Sakit Pemerintah Kota Padang – Sumatra Barat. Jurnal Sains Farmasi & Klinis, 2(1), 104. <https://doi.org/10.29208/jsfk.2015.2.1.58> Diakses pada tanggal 9 Januari 2024
- Arum, V. S. (2021). Asuhan Keperawatan Keluarga Pada Ny. I Dengan Terapi Kompres Air Hangat Untuk Mengurangi Nyeri Kepala Pada Penderita Hipertensi. 6. <http://repository.politeknikyakpermas.ac.id/id/eprint/576> Diakses pada tanggal 26 Januari 2024
- Aspiani, K. Y. (2015). Asuhan Keperawatan Klien Gangguan Kardiovaskular. EGC. <https://egcmedbooks.com/buku/detail/525/buku-ajar-asuhan-keperawatan-klien-gangguan-kardiovaskular-aplikasi-nic-noc> Diakses pada tanggal 26 Januari 2024
- Bare, S. &. (2015). Buku Ajar Keperawatan Medikal Bedah Bruner & Suddarth Edisi (8.). EGC. <http://www.perpus.poltekkestasikmalaya.ac.id/lib/phpthumb.phpThumb.php?src=../images/docs/01058.jpg> Diakses pada tanggal 30 Januari 2024
- Dinata, I. M. C., Achjar, K. A. H., Gama, I. K., & Sudiantara, K. (2022). Gambaran Pemberian Terapi Senam Kaki Pada Lansia Dengan Diabetes Mellitus Tipe II.



Jurnal GemaKeperawatan,15(2),305–319. <https://ejournal.poltekkesdenpasar.ac.id/index.php/JGK/article/view/2237> Diakses pada tanggal 6 Januari 2024

Dion, Y., & Betan, Y. (2013). Asuhan Keperawatan Keluarga Konsep dan Praktik. Yogyakarta: Nuha Medika. [https://scholar.google.com/scholar?q=related:YC6GKLerz2wJ:scholar.google.com/&scioq=Dion,+Y.,+%26+Betan,+Y.+\(2013\).+Asuhan+Keperawatan+Konsep+dan+Praktik.+Nuha+Medika.&hl=id&as_sdt=0,5](https://scholar.google.com/scholar?q=related:YC6GKLerz2wJ:scholar.google.com/&scioq=Dion,+Y.,+%26+Betan,+Y.+(2013).+Asuhan+Keperawatan+Konsep+dan+Praktik.+Nuha+Medika.&hl=id&as_sdt=0,5) Diakses pada tanggal 26 Januari 2024

Elyta, T., & Sari Octarina Piko. (2022). Penatalaksanaan Senam Kaki Diabetik Terhadap Kadar Gula Pada Asuhan Keperawatan Pasien Diabetes Melitus. INSOLOGI: Jurnal Sains Dan Teknologi, 1(2), 127–132. <https://doi.org/10.55123/insologi.v1i2.250> Diakses pada tanggal 6 Januari 2024

Faridi, A., Susilawaty, (2021). Metodologi Penelitian Kesehatan. <https://repo.stikes-ibnusina.ac.id/xmlui/handle/123456789/1210> Diakses pada tanggal 6 Januari 2024

Fikri, Z. (2019). Faktor-Faktor Yang Berhubungan Dengan Kepatuhan Penderita Diabetes Mellitus Tipe 2 Dalam Menjalani Pengobatan (Studi Di Puskesmas Rawat Jalan Singkawang Selatan 1 Kota Singkawang Tahun 2019). Universitas Muhammadiyah Pontianak. <https://repository.unmuhpnk.ac.id/2365/> iakses pada tanggal 17 Januari 2024

Hasian, Leniwita, A. M. R. L. B. M. (2019). Perkuliahaan Keperawatan Keluarga, Konsep Keperawatan Keluarga. Kesehatan, 1(2), 1–110. <http://repository.uki.ac.id/1678/> Diakses pada tanggal 26 Januari 2024

Hati, Y., & Muchsin, R. (2021). Senam Kaki Untuk Melancarkan Airan Darah Perifer Peserta Diabetes Mellitus Tipe 2. JUKESHUM: Jurnal Pengabdian Masyarakat, 1(2), 71–77. <https://doi.org/10.51771/jukeshum.v1i2.158> Diakses pada tanggal 6 Januari 2024

Hery, S. (2023). Gambaran Tingkat Pengetahuan Keluarga Tentang Penyakit Tuberculosis Paru Di Wilayah Kerja Upt Puskesmas Sikui Tahun 2023. 2, 57–88. <https://repository.stikessuakainsan.ac.id/257/> Diakses pada tanggal 26 Januari 2024

Indarti, S. (2019). Hubungan Citra Tubuh Dengan Stres Pada Penderita Diabetes Mellitus Di Wilayah Kerja Puskesmas Pringsewu Relationship Body Image With Stress on Diabetes Mellitus in Public Working Area Pringsewu. Jurnal Wacana Kesehatan,4(2),445. <https://jurnal.akperdharmawacana.ac.id/index.php/wacana/article/view/109> Diakses pada tanggal 17 Januari 2024



- Indyah Setyawati. (2018). Asuhan Keperawatan Keluarga Ny “T” Dengan Masalah Utama Diabetes Melitus Di Wilayah Kerja Puskesmas Umbul harjo 2 Kota Yogyakarta Indyah. <https://core.ac.uk/download/pdf/270061641.pdf> Diakses pada tanggal 30 Januari 2024
- Khalimatus Sa’idah. (2023). Asuhan Keperawatan Keluarga Pada Lansia Dengan Diabetes Melitus di Wilayah Kerja Puskesmas Mekar Sari Kota Balikpapan. https://repository.poltekkes-kaltim.ac.id/1993/1/31_Khalimatus_Sa%27diah.pdf Diakses pada tanggal 30 Januari 2024
- Kurniawan, I. (2019). Diabetes Melitus Tipe 2 Pada Usia Lanjut. Majalah Kedokteran Indonesia. Jurnal Maj Kedokteran Indonesia, 60(12), 576–584. https://d1wqtxts1xzle7.cloudfront.net/48278900/511-570-1-PBlibre.pdf?1472039854=&response-contentdisposition=inline%3B+filename%3D+Diabetes_Melitus_Tipe_2_pada_Usia_Lanjut.pdf&Expires=1705892693&Signature=WGcIhRFZA~aiT6uTRyUIqhxpPO3FRIStowIUjfRYaCGugP1w2 Diakses pada tanggal 24 Januari 2024
- Novianti, G. (2019). Asuhan Keperawatan Pada Penderita Diabetes Mellitus Tipe 2 Dengan Masalah Harga Diri Rendah Situasional Di RSUD Dr.Harjono Ponorogo. 552(Dm), 82–91. <http://eprints.umpo.ac.id/5103/> Diakses pada tanggal 30 Januari 2024
- Nuraeni, N., & Arjita, I. P. D. (2019). Pengaruh Senam Kaki Diabet Terhadap Penurunan Kadar Gula Darah Pada Penderita Diabetes Melitus Tipe II. Jurnal Kedokteran, 3(2), 618. <https://doi.org/10.36679/kedokteran.v3i2.80> Diakses pada tanggal 6 Januari 2024
- Nurhayani, Y. (2022). Literature Review : Pengaruh Senam Kaki Terhadap Penurunan Kadar Gula Darah Pada Pasien Diabetes Melitus. Journal of Health Research Science, 2(01), 9–20. <https://doi.org/10.34305/jhrs.v2i1.486> Diakses pada tanggal 6 Januari 2024
- Nursalam. (2019). Konsep dan Penerapan Metodologi Penelitian Ilmu Keperawatan. Salemba Medika. <https://api.penerbitsalemba.com/book/books/08-0284/contents/fc506312-5e09-4027-a661-9ba646dced46.pdf> Diakses pada tanggal 30 Januari 2024
- Pangestika, H., Ekawati, D., & Murni, N. S. (2022). Faktor-Faktor Yang Berhubungan Dengan Kejadian Diabetes Mellitus Tipe 2. Jurnal 'Aisyiyah Medika, 7(1), 27–31. <https://doi.org/10.36729/jam.v7i1.779> Diakses pada tanggal 7 Januari 2024



- Purwaningtyas, dr. L. H. (2022). Buku Profil Kesehatan Kabupaten Banjarnegara Tahun 2021. <https://dinkesbna.banjarnegarakab.go.id/wp-content/uploads/2022/03/Profil-Banjarnegara-Tahun-2021-1.pdf> Diakses pada tanggal 9 Januari 2024
- Simamora, F. A., Siregar, H. R., & Hidayah, A. (2020). Pengaruh Senam Kaki Diabetik Terhadap Penurunan Neuropati Pada Penderita Diabetes Melitus Tipe 2. Education and Development, 8(4), 431–434. <https://journal.ipts.ac.id/index.php/ED/article/view/2164> Diakses pada tanggal 6 Januari 2024
- Syahputra, I. (2020). Klasifikasi Penyakit Diabetes Melitus Tipe I Dan Diabetes Melitus Tipe Ii Dengan Menggunakan Metode Analisis Diskriminan. <http://repository.uinsu.ac.id/13659/> Diakses pada tanggal 22 Januari 2024
- Ubo, N. La, & Khair, M. N. (2019). Hubungan Lama Menderita Diabetes Mellitus Tipe Ii Dengan Kejadian Komplikasi Polineuropati Diabetik Di Wilayah Kerja Puskesmas Antang Perumnas Kecamatan Manggala Kota Makassar. Media Keperawatan: Politeknik Kesehatan Makassar, 10(2), 85. <https://doi.org/10.32382/jmk.v10i2.1249> Diakses pada tanggal 17 Januari 2024
- Wibisono, S. (2021). Pedoman Petunjuk Praktis Terapi Insulin Pada Pasien Diabetes Mellitus 2021. Pb Perkeni, 32–39. <https://pbperkeni.or.id/wp-content/uploads/2021/11/22-10-21--Website-Pedoman-Petunjuk-Praktis-Terapi-Insulin-Pada-Pasien-Diabetes-Melitus-Ebook.pdf> Diakses pada tanggal 24 Januari 2024
- Widiasari, K. R., Wijaya, I. M. K., & Suputra, P. A. (2021). Diabetes Melitus Tipe 2: Faktor Risiko, Diagnosis, Dan Tatalaksana. Ganesha Medicine, 1(2), 114. <https://doi.org/10.23887/gm.v1i2.40006> Diakses pada tanggal 24 Januari 2024