Indonesian Journal of Global Health Research
Volume 6 Number S6, December 2024
e-ISSN 2715-1972; p-ISSN 2714-9749
http://jurnal.globalhealthsciencegroup.com/index.php/IJGHR

DISCHARGE PLANNING METHOD OF DIATOHC (DIABETES TRANSITION OF HOSPITAL CARE) FOR READMISSION PREVENTION

Yeni Hartati*, Fitrian Rayasari, Dewi Anggraini, Wati Jumaiyah
Faculty of Nursing, Universitas Muhammadiyah Jakarta, Jl. K.H. Ahmad Dahlan, Cireundeu, Ciputat Timur, Tangerang Selatan, Banten 15419, Indonesia
*yenihartati884@gmail.com

ABSTRACT
Diabetes mellitus is a metabolic disorder characterized by increased blood sugar levels (hyperglycemia) caused by lack of insulin, inability of insulin to work or both. Lack of education or information from health workers can have an impact on patient compliance with treatment, which will result in repeated treatment. This innovation program aims to reduce the risk of readmission in Diabetes Mellitus patients by providing integrated education using the DiaTOHC method, patients who are screened using the DERRI application if the score is > 27%, patients are at risk of readmission, then they will be given education using the DiaTOHC method, which is integrated education. When patients are treated, they will be given education on the 5 pillars, after the patient goes home during the control, they will be reviewed whether there are any obstacles or obstacles in the treatment, then in weeks 2, 3 and 4 the patient will be contacted by telephone for re-education and evaluation of treatment. The results of the trial of this program from 17 samples were successful, all of which were readmissions, it was concluded that there was effectiveness in providing education using the DiaTOHC method in Diabetes Mellitus patients to reduce the risk of readmission. Data is collected by interview, observation and filling out questionnaires, after the data is collected, data analysis is carried out by inputting all data found in excel software and then assessing the percentage of patients who are readmitted.

Keywords: diabetes mellitus; discharge planning: readmisi

How to cite (in APA style)
Hartati, Y., Rayasari, F., Anggraini, D., & Jumaiyah, W. (2024). Discharge Planning Method of Diatohc (Diabetes Transition of Hospital Care) for Readmission Prevention. Indonesian Journal of Global Health Research, 6(S6), 501-506. https://doi.org/10.37287/ijghr.v6iS6.4719.

INTRODUCTION

Diabetes mellitus (DM) is a chronic metabolic disease or disorder.(Ministry of Health of the Republic of Indonesia 2020) in the endocrine system characterized by hyperglycemia due to insulin deficiency, insulin action and/or both, resulting in the body's inability to metabolize carbohydrates, fats and proteins(Tan et al., 2020) In general, diabetes mellitus is divided into 3, namely type 1 diabetes, type 2 diabetes and gestational diabetes. Type 1 diabetes occurs when the body is unable to produce insulin, type 2 diabetes occurs when the body is unable to receive and process insulin effectively while gestational diabetes occurs due to pregnancy.(Analysis of the Determinants of Diabetes Mellitus in Indonesia: A Case Study of the 2014 Indonesian Family Life Survey, 2021)Various epidemiological studies have shown an increasing trend in the incidence and prevalence of type 2 diabetes mellitus in various parts of the world. DKI Jakarta is ranked first as the city with the highest prevalence of diabetes mellitus in Indonesia, 3.4% of a total of 10.5% million people or around 250 thousand residents in DKI Jakarta suffer from diabetes. The percentage of diabetes mellitus prevalence has increased in the past five years from the 2013 Rikesda data of 2.5%. One of the hospitals in Jakarta found that the number of patients who readmitted with Diabetes Mellitus cases was 54 patients out of 762 patients treated from October to December 2024 with complaints of hypoglycemia and hyperglycemia

Diabetes mellitus is a metabolic disorder characterized by increased blood sugar levels (hyperglycemia) caused by lack of insulin, inability of insulin to work or both. Lack of information on insulin use, diet, physical activity, self-care guidelines and understanding of hypoglycemia and hyperglycemia symptoms and treatment, this problem is at risk for patients for repeated care / readmission. Readmission is the re-admission of patients to the hospital within 30 days after discharge from the hospital with the same complaint, factors that influence this readmission are the inability of patients to understand and implement the plan properly causing discontinuity(Luther et al., 2019)service, this condition can cause 20-50% of patients to be readmitted early therefore, the management of patients discharged from the hospital must be viewed as a whole(Mennuni et al., 2017). Readmissions to the hospital not only cost the hospital money but, more importantly, cause negative experiences for patients and caregivers and result in delayed recovery, time away from work. Previous studies have suggested that 27% of these readmissions could be prevented.(Auerbach et al., 2016)

Discharge planning and education are consistently the primary responsibility of nurses, although many teams are involved, nursing remains at the heart of this process, shouldering the assessment of readiness to go home and patient understanding, in the application of evidence-based the author tries to apply discharge planning with the Diatohc method, based on PMK 40 of 2017 the role of specialist nurses is responsible for the development of nursing through evidence-based research or innovation, becoming the basis for practicums conducting reviews of various research sources. A search was conducted using the pudmed website with the keywords: Rehospitalization: transitional care: Prospective randomized trial, several articles were obtained and focused on discharge planning using the Diatohc method to prevent readmissionsPost-discharge care and discharge of patients from the hospital are not well planned resulting in discontinuity(Luther et al., 2019)service, this condition can cause 20-50% of patients to be readmitted early therefore, the management of patients discharged from the hospital must be viewed as a whole(Mennuni et al., 2017). Readmissions to the hospital not only cost the hospital money but, more importantly, cause negative experiences for patients and caregivers and result in delayed recovery, time away from work. Previous studies have suggested that 27% of these readmissions could be prevented.(Auerbach et al., 2016). This study aims to apply education using the DiaTOHC method, with the aim of reducing the risk of readmission in patients with diabetes millitus. (Rubin et al., 2022)

METHOD

This study uses the application of evidanbased from one of the research subject articles are patients with diabetes mellitus who are hospitalized class 3 at Persahabatan Hospital totaling 30 respondents. The sampling technique used is the consecutive sampling technique so that 17 respondents were obtained who met the inclusion criteria. Inclusion criteria:Willing to participate by signing informed consent, Adult patients aged >18 years, Patients with diabetes mellitus who are treated at Persahabatan Hospital, who are at risk of readmission within 30 days (>27% of screening results). Data collection was carried out for one month from May to June 2024. The level of readmission risk was measured using the DERRI application.(Rubin et al., 2018)external validation sample 0.686 (95% CI, 0.677-0.696) in the internal validity sample, previously published internal sample (P-Value <0.0001. Each respondent was given a consent form for participation. Ethical permission for this study has been obtained from Persahabatan Hospital with letter number 0091/KEPK-RSUPP/04/2024.

RESULT

Data on respondent characteristics were collected after respondents completed a demographic questionnaire. Data on readmission risk were collected using the Diabetes Early Readmission Risk Indicator (DERRI) instrument.

Table 1
Distribution of Respondents Based on Characteristics of Gender, Age, Education, Hospitalization History and DERRI Scoring (n = 17)

Variables	f	%
Gender		
Man	3	18
Woman	14	82
Age		
26-45 Year	2	12
46-65 Year	11	64
≥ 65 Years	4	14
Education		
SENIOR HIGH SCHOOL	15	88
Higher education	2	12
Treatment history		
1x	7	41
2x	8	47
4x	2	12
DERRI Scoring		
≥ 27	3	18
≥ 30	8	47
≥ 40	5	30
≥ 50	1	5

The application of *discharge planning with the DiaTOCH method* is an integrated and comprehensive educational application technique used by nurses in managing and minimizing the risk of readmission. *discharge planning with the DiaTOCH method* effectively reduces the level of risk of readmission and improves quality of life and hospitals are able to provide effective and efficient care.

DISCUSSION

Diabetes mellitus (DM) is a degenerative disease that requires long-term management in controlling blood sugar so as to improve the quality of life of patients. The lack of public knowledge of DM disease, its prevention, and how to use antidiabetic drugs causes the prevalence of the incidence of this disease to increase every year, this long management condition if not properly intervened results in patients at risk for readmission, the role of nurses in providing discharge planning is very important so that the hope is that patients who have been discharged do not occur readmission. The author applies evidence based practices nursing to discharge patients with the Diatohc discharge planning method. According to the International Diabetes Federation report (Atlas, 2021) Diabetes mellitus is the 9th leading cause of death in the world.

Complications in diabetics consist of macrovascular and microvascular complications. The macrovascular complications such as cardiovascular disease, renal failure and a high risk of infection while microvascular complications such as nephropathy, retinopathy and peripheral neuropathy which end in diabetic ulcers (PERKENI, 2021) in addition to ulcers on the diabetic foot peripheral neuropathy disorders cause sensory damage which if this situation is left unchecked will end in diabetic foot amputation (Hasanpour Dehkordi et al., 2020). Readmission is the readmission of patients to the hospital within 30 days after discharge from the hospital with the same complaints. The factors affecting readmission are the inability of

patients to understand and implement care plans after discharge and the discharge of patients from the hospital is not well planned causing discontinuity (Luther et al., 2019) services, this condition can cause 20-50% of patients to be re-hospitalized early therefore, the management of patients returning from the hospital must be seen as a whole ((Mennuni et al., 2017). Readmission is not only costly for the hospital but, more importantly, causes a negative experience for patients and caregivers as well as delayed recovery and time away from work. Previous research suggests readmissions can be prevented by 27% (Auerbach et al., 2016).

The results of the application of patients with the highest DERRI score of 54.5 with female gender, these results are contrary to research(Ostling et al., 2017)who said men were more at risk of experiencing readimsi this difference was due to the less varied samples.Last education Bachelor under discussion(Galicia-garcia et al., 2020)mentioning contributing factors such as modern lifestyle and socio-economic have been suspected as predisposing factors playing an important role in the risk of DM, age increases chronic inflammation in the elderly which results in insulin retention. In addition, disorders of fat metabolism caused by aging can increase the accumulation of free fatty acid concentrations in the blood which triggers insulin resistance in research(Hasan et al, 2023)there is a relationship between glycemic control and readmission events.The highest DERRI score was at the age of 56 years. Based on research conducted by(Ayu & Lestari, 2018)with the title analysis of risk factors for type 2 DM in productive age, the results obtained were that 75% of the patients were aged 55-64 years with a history of 4 hospitalizations in the study.(Ostling et al., 2017)which states that patients with secondary diagnosis of DM, infection is the main cause of patients having to be readmitted. Various studies have shown that diabetes is a significant risk factor for infection and the same results in the study(Galicia-garcia et al., 2020).

CONCLUSIONS

Based on the results of research and discussion on the relationship between readmission and DiaTOHC method education on readmission at Persada Hospital, it can be concluded that providing integrated education can reduce the risk of readmission in diabetes mellitus patients. The application of evidence based can be a reference for health workers, especially nurses, where nurses are responsible for providing discharge planning for inpatients.

REFERENCE

Analysis of the Determinants of Diabetes Mellitus in Indonesia: A Case Study of the 2014 Indonesian Family Life Survey, (2021).

Atlas, I. D. (2021). IDF Diabetes Atlas 10th edition. https://diabetesatlas.org/

Auerbach, A. D., Kripalani, S., Vasilevskis, E. E., Sehgal, N., Lindenauer, P. K., Metlay, J. P., Fletcher, G., Ruhnke, G. W., Flanders, S. A., Kim, C., Williams, M. V., Thomas, L., Giang, V., Herzig, S. J., Patel, K., Boscardin, W. J., Robinson, E. J., & Schnipper, J. L. (2016). Preventability and causes of readmissions in a national cohort of general medicine patients. JAMA Internal Medicine, 176(4), 484–493. https://doi.org/10.1001/jamainternmed.2015.7863

Ayu, D. U. S., & Lestari, M. D. (2018). Peran Dukungan Sosial Dan Penerimaan Diri Pada Status Diabetes Melitus Tipe II Terhadap Kepatuhan Menjalani Diet Pada Pasien Diabetes Melitus Tipe II Berusia Dewasa Madya Di Rumah Sakit Umum Daerah Wangaya Kota Denpasar. Jurnal Psikologi Udayana, 000, 187–200.

Galicia-garcia, U., Benito-vicente, A., Jebari, S., & Larrea-sebal, A. (2020). Costus ignus:

Insulin plant and it's preparations as remedial approach for diabetes mellitus. International Journal of Molecular Sciences, 1–34.

Hasan et al. (2023). Pengobatan Dengan Kejadian Hospital Readmission Pada Pasien Diabetes Mellitus Di Rumah Sakit Bhayangkara Makassar. Jurnal Ilmiah Mahasiswa & Penelitian Keperawatan, 3, 81–89.

Hasanpour Dehkordi, A., Chin, Y. F., Huang, T. T., Ebadi, A., & Ghanei Gheshlagh, R. (2020). Psychometric evaluation of the Farsi version of the diabetes foot self-care bahavior scale. Journal of Foot and Ankle Research, 13(1), 1–6. https://doi.org/10.1186/s13047-020-00437-5

Kemenkes RI. (2020). Tetap Produktif, Cegah dan Atasi Diabetes. Pusat dara dan informasi kementrian kesehatan.

Luther, B., Wilson, R. D., Kranz, C., & Krahulec, M. (2019). Discharge Processes: What Evidence Tells Us Is Most Effective. Orthopaedic Nursing, 38(5), 328–333. https://doi.org/10.1097/NOR.0000000000000601

Mennuni, M., Massimo Gulizia, M., Alunni, G., Francesco Amico, A., Maria Bovenzi, F., Caporale, R., Colivicchi, F., Di Lenarda, A., Di Tano, G., Egman, S., Fattirolli, F., Gabrielli, D., Geraci, G., Gregorio, G., Francesco Mureddu, G., Nardi, F., Radini, D., Riccio, C., Rigo, F., … Zuin, G. (2017). ANMCO Position Paper: Hospital discharge planning: Recommendations and standards. European Heart Journal, Supplement, 19(January), D244–D255. https://doi.org/10.1093/eurheartj/sux011

Ostling, S., Wyckoff, J., Ciarkowski, S. L., Pai, C.-W., Choe, H. M., Bahl, V., & Gianchandani, R. (2017). The relationship between diabetes mellitus and 30-day readmission rates. Clinical Diabetes and Endocrinology, 3(1), 1–8. https://doi.org/10.1186/s40842-016-0040-x

PERKENI. (2021). Pedoman Petunjuk Praktis Terapi Insulin Pada Pasien Diabetes Mellitus 2021. Pb Perkeni, 32–39.

Rubin, D. J., Gogineni, P., Deak, A., Vaz, C., Watts, S., Recco, D., Dillard, F., Wu, J., Karunakaran, A., Kondamuri, N., Zhao, H., Naylor, M. D., Golden, S. H., & Allen, S. (2022). The Diabetes Transition of Hospital Care (DiaTOHC) Pilot Study: A Randomized Controlled Trial of an Intervention Designed to Reduce Readmission Risk of Adults with Diabetes. Journal of Clinical Medicine, 11(6). https://doi.org/10.3390/jcm11061471

Rubin, D. J., Recco, D., Turchin, A., Zhao, H., & Golden, S. H. (2018). External validation of the diabetes early re-admission risk indicator (derriTM). Endocrine Practice, 24(6), 527–541. https://doi.org/10.4158/EP-2018-0035

Tan, C. C. L., Cheng, K. K. F., Hwang, S. W., Zhang, N., Holroyd, E., & Wang, W. (2020). Effect of a Diabetes Self-Efficacy Enhancing Program on Older Adults With Type 2 Diabetes: A Randomized Controlled Trial. Clinical Nursing Research, 29(5), 293–303. https://doi.org/10.1177/1054773818792480.