

Effect of LIMA Discharge Planning Model on Discharge Readiness Among Patients with Diabetes Mellitus

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Abstract—One of the health care services for hospitalized patients is discharge planning. The main goal is maintaining continuity of advanced care at home after the patient discharge. As the chronic illness, patients with diabetes mellitus desperately need discharge planning. Effective discharge planning can ensure the patients and families take palliative care and realistic care follow-up after discharge. LIMA discharge planning model is a discharge planning development model that is prepared based on scientific studies and literature reviews that can effectively be nurses in planning the return of hospitalized patients. The aim of this study was to determine the effect of LIMA discharge planning model on the discharge readiness among patients with diabetes mellitus. The correlation study with a quasi-experimental approach was conducted in two adult wards at Hospital X Palembang between August and September 2019. Using RHDS as the discharge readiness tools, 31 diabetes mellitus patients was assessed before and after the intervention of LIMA discharge planning mode. The sample included 31 diabetes mellitus patients (51,6% older age; 58,1% male; 22,6% 3 days LOS). The pretest score from all discharge readiness factors on RHDS had lower than posttest score. After the intervention of LIMA discharge planning model, discharge readiness score increased by 141.42 (95% CI, SD 17.534, SE 3.149). The paired t-test analysis showed that there was a difference mean score of discharge readiness before and after intervention of LIMA discharge planning model (-76,323, SD 21,154, 95% CI), a sig (2 tailed) value of 0,000 was smaller than alpha (0.05). So it can be concluded that there were significant difference in the mean pretest and posttest

scores of discharge readiness, which means that there was an effect of the LIMA discharge planning model on the discharge readiness among patients with diabetes mellitus.

Keywords: discharge planning, palliative care, chronic illness, diabetes mellitus

I. INTRODUCTION

Diabetes mellitus is a chronic illness and require a complex care to prevent acute complications and also reduce the risk of long-term complications [1]. Diabetes mellitus is a metabolic disorder characterized by hyperglycemia due to abnormal metabolism of carbohydrates, fats and proteins [2]. People with diabetes should receive medical care from a physician-coordinated team includes-but are not limited to-physicians, nurses, dietitians, pharmacists, and mental health professionals with expertise in diabetes. Collaborative and integrated team approach with diabetes assume an role in their care is very important [3].

Discharge planning is one of health care services for patients treated in hospitals. Discharge planning is indicators of the success of health care services in hospitals [4]. The goal of discharge planning is health care services to the patients not interrupted after discharge from hospital. Swansburg states that discharge planning is a mechanism that includes the provision of ongoing care, information about ongoing health needs after resetting, evaluation agreements, and self-care instructions to the patients after discharge [5]. Discharge planning involves multidisciplinary and is carried out comprehensively. Nurses as one of the officers in health care services in hospitals must have good knowledge about discharge planning.

Research shows that 49.21% of nurses have good knowledge about discharge planning. Adequate knowledge of discharge planning is needed by nurses to provide information and health education to patients before discharged so continuity of care care

for patients is not interrupted. Perry & Potter argues that the implementation of discharge planning by nurses can be in the form of assessments, planning of discharge, providing counseling, and also providing health education [5].

LIMA discharge planning model is a discharge planning that is developed based on the findings of the survey, theoretical studies and the results of research on discharge planning. Wilcoxon Signed Rank Test statistical test results show that the development of LIMA discharge planning model has a significant influence on the implementation of discharge planning performed by nurses ($p = 0,000$). LIMA discharge planning model consists of several processes, namely (1) involving patients and families in the discharge planning process; (2) identification of patient and family discharge planning needs; (3) use of the 3-step method in discharge planning (when the patient is first admitted to the hospital, one day before discharge, and on the day of discharge); (4) analysis and evaluation of patient and family readiness [5].

Patients with diabetes mellitus desperately need discharge planning before returning home. In patients with diabetes mellitus there are various kinds of things related to health care that need to be considered by both patients and their families in treating diabetes mellitus patients, including monitoring of blood sugar levels, controlling and ongoing monitoring, complications, interventions non-pharmacological, and also drug uses.

II. METHODS

The design of this study is a quasi-experimental with one group pre-post design approach. There are two variables in this study, namely the independent variable, namely the LIMA discharge planning model, while the dependent variable is the discharged readiness of patients with diabetes mellitus. Sample were patients with diabetes mellitus who were treated in two adult wards at Hospital X Palembang. The sampling technique uses purposive sampling technique. The inclusion criteria determined in this study are as follows: type II diabetes mellitus patients, diabetes mellitus patients with stable hemodynamic conditions as stated by the doctor in charge of the patient, patients / families of patients are willing to be respondents. The exclusion criteria in this study are as follows: patient and or family are not cooperative. The Readiness for Hospital Discharge Scale (RHDS) instrument developed by Weiss (2006) was used to measure patient's discharge readiness.

A bivariable analysis was performed to determine the effect of the independent and dependent variables, namely the discharge planning

model LIMA on the readiness of patients with diabetes mellitus. Bivariable analysis was performed using a paired t test to determine the effect of the LIMA discharge planning model on the readiness of patients with diabetes mellitus. The magnitude of the wrong chance in rejecting H_0 from research data is depicted with the p value, to find out whether there is influence between the independent variable and the dependent variable then the decision of statistical analysis is taken by comparing the p value with the alpha value ($\alpha = 0.05$) with the condition that H_0 is rejected if $p \leq 0.05$ and H_0 are accepted if the value of $p > 0.05$.

III. RESULT

TABLE I. AGE OF RESPONDENTS

Age group	Frequency (n)	Percentage (%)
Young age	15	48,4
Old age	16	51,6
Total	31	100

Table I showed majority of respondents were in the old age group of 16 people (51.6%) and the rest were in the young age group of 15 people (48.4%).

TABLE II. SEX OF RESPONDENTS

Sex	Frequency (n)	Percentage (%)
Male	18	58,1
Female	13	41,9
Total	31	100

Table II showed from the 31 respondents the majority were male as many as 18 people (58.1%) while the remaining 41.9% (13 people) were female.

TABLE III. RESPONDENTS'S LENGTH OF STAY

LOS	Frequency (n)	Percentage (%)
1	2	6,5
2	3	9,7
3	7	22,6
4	4	12,9
5	5	16,1
6	5	16,1
7	5	16,1
Total	31	100

Table III showed majority of respondents were treated for 3 days as many as 7 people (22.6%) while the fewest respondents were treated for 1 day as many as 2 people (6.5%) respondents.

Table IV showed that difference between the average all pretest discharge readiness's factor score and posttest that is -16,129 (Personal status), -29,871 (Knowledge), -13,065 (Coping), and -13,290 (Family Support). A sig (2 tailed) value of 0,000 is smaller than alpha (0,000 < 0.05).

TABLE IV. RESULTS OF PAIRED SAMPLES T-TEST IN THE DISCHARGE READINESS'S FACTORS PRETEST-POSTEST

Variabel	Mean \pm SD	P value	n
Personal Status	-16,129 \pm 7,593	0,000	31
Knowledge	-29,871 \pm 10,042	0,000	
Coping	-13,065 \pm 4,582	0,000	
Family Support	-13,290 \pm 3,814	0,000	

TABLE V. RESULTS OF PAIRED SAMPLES T-TEST IN THE DISCHARGE READINESS PRETEST-POSTEST

Variabel	Mean \pm SD	P value	n
Discharge Readiness	-76,323 \pm 21,154	0,000	31

Table V showed that the difference between the average pretest discharge readiness and posttest discharge readiness was -76,323 (CI 95%). A sig (2 tailed) value of 0,000 is smaller than alpha (0,000 <0.05), then H_0 is rejected and H_a is accepted. So it can be concluded that there are significant differences in the average pretest and posttest scores of discharge readiness, which means that there is an influence of the LIMA discharge planning model on the discharge readiness of patients with diabetes mellitus.

IV. DISCUSSION

Result showed a significant changes in discharge readiness among patients with diabetes mellitus before and after intervention (LIMA discharge planning model). The mean increases in discharge readiness was similar with research conducted by Wahyuni, Nurrachmah, & Gayatri (2012), which showed an increases in discharge readiness in respondents after given discharge planning programme for 7 days [6]. This study was also in line with research by Siahaan (2009) which showed that an increased level of discharge readiness of patients following acute abdominal surgery after given discharge planning by nurse (p value <0.05) [7].

Research by Rondhianto (2012) showed that diabetes self management education can support knowledge, skills and patient's self care abilities in discharge readiness to self care behavior (p value = 0.000) [8]. In line with that research, interventions of the LIMA discharge planning model included the involvement of patients and families in the discharge planning process; identification of patient and family discharge planning needs (home care, explanation of medicines, recognition of signs and hazards to be aware of by patients and families, explanation of

laboratory results or diagnostic examinations, control schedule); use of the three-step method (when the patient is first treated, one day before the patient's discharge, and on the day of the patient's discharge); and the action of evaluating the discharge readiness of the patient and family [5]. By the intervention of LIMA discharge planning model, patients with diabetes mellitus and also their families got self management education after discharge from the hospital better than usual discharge planning.

Adequates information provide patients have a positive impact, so they can help themselves in connection with their healing time at home. Lack and unclear information will bring negative impacts such as mistakes when taking drugs, poor diet, ignoring activities after discharge. Proper health education during the time patients are hospitalized is very important in improving the ability to manage disease, because with good management, the acute and chronic complications of diabetes can be avoided.

Discharge planning that made since the beginning of the patient being treated at hospital can reduce the number of re-treatments and the number of complications [9]. LIMA discharge planning model conducted from the day one after patient get hospitalized. The nurse conducts an assessment of health care needs to prepare patients for discharge, including (1) review health care history, physical assessment, diagnostic and laboratory data; (2) assess health education needs for patients and families; (3) assess home environmental factors; (4) collaboration with multidisciplinary teams in patient's discharge planning; (5) assess patient and family acceptance of health problems; (6) establish nursing diagnoses and interventions, as well as relevant discharge goals; and also (7) carry out continuous implementation and evaluation after discharge.

In addition, one day before the patient goes home the nurse will explain about health care facilities in the environment around the patient's residence, give advise how to care at home, give information about the source of health services in the community, and repeat health education for patients and families. On the day of the patient's discharge, the nurse prepares the patient and family to go home by (1) give time for patients and families to ask questions or discuss about home care; (2) check patient instructions for discharge from various multidisciplines (prescription drugs, therapeutic devices, diets, etc.); (3) help the patient and family complete administrative and transportation matters; (4) record the patient's return with a clear and concise description; (5) help the patient to find the transportation used to go home facilitated by hospital; and the last (6) document health problems or nursing diagnoses on the discharge.

Good implementation of discharge planning enables patients to be independent in their care and ensures that patients are able to take safe and realistic follow-up care after leaving the hospital [10].

V. CONCLUSION

There is an influence of LIMA discharge planning model on the discharge readiness among patients with diabetes melitus in the RS X Palembang.

REFERENCES

- [1] American Diabetes Association. (2019). Introduction: Standards of Medical Care in Diabetes-2019. Diabetes Care, Volume 42, Supplement 1, January 2019.
- [2] Diabetes Care. (2015). Standards Of Medical Care In Diabetes. American Diabetes Association. The Journal Of Clinical and Applied Research And Education. [www. Diabetes. Org/](http://www.Diabetes.Org/)
- [3] American Diabetes Association. (2002). Standards of Medical Care for Patients With Diabetes Mellitus. Diabetes Care, Volume 26, Supplement 1, January 2003
- [4] Nursalam. (2014). Manajemen Keperawatan: Aplikasi dalam Praktik Keperawatan Profesional. Edisi 4. Jakarta: Salemba Medika
- [5] Fitri, E.Y., Herliawati, & Wahyuni, D. (2018). Pengembangan Perencanaan Pulang Model LIMA. Unpublished.
- [6] Wahyuni, A., Nurrachmah, E., & Gayatri, D. (2012). Kesiapan Pulang Pasien Penyakit Jantung Koroner melalui Penerapan Discharge Planning. Jurnal Keperawatan Indonesia, Vol 15, No. 3, November 2012.
- [7] Siahaan, M. (2009). Pengaruh Discharge Planning yang Dilakukan oleh Perawat terhadap Kesiapan Pasien Pasca Bedah Akut Abdomen Menghadapi Pemulangan Di RSUP H. Adam Malik Medan. USU Repository.
- [8] Rondhianto. (2012). Pengaruh Diabetes Self Management Education dalam Discharge Planning terhadap Self Care Behavior Pasien Diabetes Mellitus Tipe 2. Jurnal Keperawatan Soedirman (The Soedirman Journal of Nursing), Volume 7, No.3, November 2012.
- [9] Graham, J., Gallagher, R. & Bothe, J. 2013. Nurses' Discharge Planning and Risk Assessment: Behaviours, Understanding and Barriers. Journal of Clinical Nursing, 22, 2338-2346. <https://doi.org/10.1111/jocn.12179>
- [10] Potter, A & Perry, A.G. (2006). *Buku Ajar Fundamental Keperawatan*. Edisi 4. Jakarta : EGC.