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DIETARY EDUCATION STUDY IN ROUTINE CKD ON HD PATIENTS AGAINST THE INCIDENCE OF REHOSPITALIZATION AT CILEUNGSI HOSPITAL IN 2023

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Abstract

Background: According to the 2020 WHO report, the number of Hemodialysis patients is increasing by 8% per year. Kovesdy Research 2022: 843.6 million individuals globally suffer from chronic kidney failure stages 1-5. In Asia, Liyanage et al. 2022: 434.3 million adults experience chronic kidney failure, most in China (159.8 million) and India (140.2 million). **Research Objective**: To determine the effect of diet education studies in CKD patients on routine HD on the incidence of re-hospitalization at Cileungsi Regional Hospital in 2023. **Research Methodology**: Analytical with a cross sectional approach. The sample in this study was all 25 hemodialysis patients in the hemodialysis installation at the Cileungsi Regional General Hospital, the sampling technique was total sampling. **Research Findings**: The results of the analysis show that the majority of respondents who underwent re-hospitalization had good knowledge (100%), but there was no significant relationship with the incidence of re-hospitalization (p-value = 0.09). Likewise, most respondents adhered to CKD diet therapy (93.3%), but there was no significant relationship with the incidence of re-hospitalization (p-value = 1.000). In other words, there is no significant relationship between knowledge about diet and the incidence of re-hospitalization (p-value = 0.09), and there is no significant relationship between adherence to diet therapy and the incidence of re-hospitalization (p-value = 1.000). **Conclusion and Recommendations**: The majority of respondents were women (52%), aged 41-50 years (40%), and undergoing hemodialysis for 1-5 years (80%). However, there was no significant relationship between knowledge about diet, adherence to diet therapy, and the incidence of re-hospitalization in CKD patients at Cileungsi Regional Hospital (p-value > 0.05). Suggestion: increase patient motivation to be more compliant with diet therapy to prevent re-hospitalization in CKD patients.
Keywords: Knowledge, Compliance, Diet Education, Hemodialysis.

Introduction

Double organs known as kidneys play a crucial role in the human body system, functioning as a filter and removal of metabolic residues or toxins. As the body absorbs nutrients from food and converts them into energy, there are remnants left in the intestines and bloodstream. The function of the kidneys, along with the urinary system, is to process and excrete this liquid waste, known as urea. This process also includes maintaining the balance of electrolytes such as potassium and sodium as well as fluid balance. Urea, which is formed from the breakdown of proteins in foods such as meat, poultry, and some types of vegetables, is transported by the blood to the kidneys. Urea and other wastes are eliminated from the body through urine (Anatomy of the Urinary System, n.d.; Greenstein, n.d.). Chronic kidney disease, recognized by medical experts as kidney damage that occurs gradually over more than three months, has been explained in depth by Fauzy in 2023.

The global prevalence rate of Chronic Kidney Disease (CKD) reaches 10% of the world's population, with around 1.5 million people undergoing Hemodialysis. According to a 2020 WHO report, the number of Hemodialysis patients is increasing by around 8% every year. A study by Kovesdy in 2022 showed the combined results of 33 population-based studies indicating that there are approximately 843.6 million individuals worldwide suffering from chronic renal failure from stages 1 to 5. In Asia, a study by Liyanage and colleagues in 2022 showed that around 434.3 million adults had chronic kidney failure, with the largest number of patients in China (159.8 million) and India (140.2 million). Together they account for 69.1% of the region's total cases of chronic kidney failure. In Indonesia, a survey by the Indonesian Nephrology Association (PERNEFRI) in 2019 revealed that around 12.5% or about a quarter of the total population suffered from impaired kidney function. In West Java, the prevalence of chronic kidney disease was 0.48%, with 21,051 patients actively undergoing hemodialysis in 2018, an increase from the previous year, according to 2018 Ministry of Health data. The two main methods of kidney replacement therapy are kidney transplantation and dialysis. Dialysis is divided into hemofiltration, peritoneal dialysis, and hemodialysis, with the latter being mostly performed in Indonesia. Based on data from 2013, there were 15,353 new patients undergoing hemodialysis in 2011, and that number increased to 19,621 patients in 2012. CKD patients undergoing hemodialysis often require re-inpatient treatment in the hospital. According to USDR data in 2011, about 36% of hemodialysis patients experience repeated hospitalizations, especially in the age group of 20-44 years. Nutritional therapy for patients with chronic renal failure focuses on reducing kidney workload and lowering blood ureal levels. One important step in this diet therapy is to follow a low-protein diet. Restriction of fluid intake is also important, considering that kidney failure patients tend to experience a decrease in the frequency of urination. It is important to ensure that the amount of fluid consumed does not exceed the amount excreted by the body, to avoid further decline in kidney function and the risk of overhydration, or excess fluid, as explained by Hukermas in 2019.

The patient's education and knowledge about managing CKD is decisive for success in managing this condition. Effective education has been shown to increase the knowledge and understanding of patients and their families about the management of CKD, as found by Majid and colleagues in 2019. Patient education regarding proper food choices and the importance of adhering to recommended dietary plans is key, as Allo and colleagues emphasized in 2020. The quality of life of CKD patients undergoing hemodialysis can be improved by maintaining proper diet and fluid intake. Research by Yuniardi and colleagues in 2020 showed that physical complaints experienced by CKD patients are often associated with non-compliance with hemodialysis programs and neglect of diet and recommended fluid consumption. Adherence to diet is a behavioral action recommended by health workers such as nurses and doctors. A person's level of adherence to the recommended diet plan can be influenced by various factors, ranging from the individual, the small social environment around him, the wider community, certain organizations, to applicable policies. Studies conducted in different geographical regions show that dietary non-compliance is influenced by many factors. For example, receiving nutrition education, education level, family support, gender, age, number of families, income, and occupation were all associated with dietary non-adherence in individuals (Tifie et al, 2020).

For patients undergoing hemodialysis, it is recommended to follow a special diet that limits the consumption of foods rich in potassium, water, and salt. Most fruits and vegetables contain potassium, so patients are advised to reduce consumption of almost all types of fruits and processed fruit products. Restriction of salt intake aims to reduce thirst, which if not controlled can lead to significant weight gain between dialysis sessions (Rahardjo et al., 2014). Syamsiah (2014) notes that there are four main aspects of patient non-compliance in dialysis: not following a hemodialysis program regularly, not adhering to fluid restrictions, and not following a prescribed diet program. From these findings, it can be concluded that patient understanding and compliance are very influential on the success of hemodialysis procedures. It is important for CKD patients to understand and follow a proper diet plan and fluid intake

arrangements. Preliminary studies conducted at Cileungsi Hospital, there were 823 patients undergoing hemodialysis, while in the Gladiolus Room the number of CKD on HD patients who underwent rehospitalization from June-August was 78. The results of interviews with patients who experienced rehospitalization, data were obtained that most patients did not adhere to the diet, causing shortness of breath and palpitations. Based on the description above, researchers are interested in studying the education of CKD on HD patients on the incidence of rehospitalization in the Gladiolus Room of Cileungsi Hospital.

Methods

This research is analytical with a cross-sectional method, aimed at exploring the relationship between independent and dependent variables measured together. Conducted in the Gladiolus room of Cileungsi Regional General Hospital in November 2023, this study focused on kidney failure patients undergoing hemodialysis. The population is 25 patients registered in the hospital's hemodialysis installation. Using Total Sampling, all 25 of these patients were sampled. Inclusion criteria include patients with good mental awareness is important in data collection because respondents must be able to answer questions in the questionnaire about knowledge and adherence to the daily CKD diet. Willingness to be a respondent in research is also crucial. When collecting data, researchers provided patients with informational consent sheets, giving them the freedom to determine whether or not they wanted to be respondents in the study.

Result

The results of data collection are processed using the SPSS computer program version 24.0 then in editing, coding, tabulating and analyzing. which is presented in the form of a table with explanations.

A. Univariate Analysis

1. Characteristics of Respondents

Table 1.1 Frequency distribution of respondent characteristics of CKD patients undergoing rehospitalization at RSUD Cileungsi

Characteristic	Amount	Percentage
Gender		
1. Male	12	48%
2. Female	13	52%
Age		
1. >20 Years	1	4%
2. 21-30 Years	1	4%
3. 31-40 Years	4	16%
4. 41-50 Years	10	40%
5. 51-60 Years	8	32%
6. > 60 Years	1	4%
HD Duration		
1. < 1 Years	3	12%
2. 1-5 Years	20	80%
3. > 5 Years	2	8%

Based on table 1.1 above, the majority of respondents are women (52%) with the rest being men (48%). The largest age group is 41-50 years (40%), followed by the age groups 51-60 years, 31-40 years,

21-30 years, >20 years, and >60 years with the same number. When considering the length of time on hemodialysis, more respondents had undergone HD for 1-5 years compared to the old HD group <1 year and >5 years.

2. Knowledge About the CKD Diet

Table 1.2 Knowledge frequency distribution CKD on HD patients undergoing rehospitalization

No	Knowledge	Amount	Percentage
1	Well Informed	8	32%
2	Sufficient	16	64%
3	Less	1	4%
Total		25	100%

Based on table 1.2 of the knowledge description of CKD on HD patients undergoing rehospitalization at Cileungsi Hospital, almost all of them had sufficient knowledge of 16 respondents (64%).

3. Adherence to the CKD Diet

Table 1.3 Frequency distribution of adherence to the CKD diet in patients on HD undergoing rehospitalization

No	Compliance	Amount	Percentage
1	Obedient	10	40%
2	Disobedient	15	60%
Total		25	100%

Based on table 1.3 above the picture of patient compliance in undergoing a diet, almost all of them did not comply with the diet that must be undertaken, respondents who did not comply as many as 15 respondents (60%).

B. Bivariate Analysis

1. The relationship between knowledge and the incidence of rehospitalization

Table 1.4 Relationship between knowledge of CKD diet and incidence of rehospitalization of CKD patients on HD

No	Knowledge	Rehospitalization				Total	*p-value*
		Infrequently		Frequently			
		N	%	N	%		
1	Well Informed	2	25%	6	75%	8	0,09
2	Sufficient	0	0%	16	100 %	16	
3	Less	0	0%	1	100 %	1	

Based on table 1.4 above, it can be seen that the results of the analysis of the relationship between CKD dietary knowledge and the incidence of rehospitalization in CKD on HD patients undergoing

rehospitalization found that most of the respondents who underwent rehospitalization had good knowledge, which was as many as 16 respondents (100%). Because the p-value of 0.09 > 0.05 can be concluded that Ho is accepted and Ha is rejected, which means there is no relationship between knowledge and the incidence of rehospitalization in the Gladiolus Room of Cileungsi Hospital.

2. Relationship between adherence and rehospitalization

Tabel 1.5 Relationship between dietary adherence and incidence of rehospitalization patient CKD on HD

No	Compliance	Rehospitalization				Total	*p-value*
		Infrequently		Frequently			
		N	%	N	%		
1	Disobedient	1	10%	9	90%	10	1,000
2	Obedient	1	6,7%	14	93,3%	15	

Based on table 1.5 above, it can be seen the results of the analysis of the relationship between adherence to the CKD diet and the incidence of rehospitalization in CKD on HD patients, data were obtained that most respondents were adherent to diet therapy 14 respondents (93,3%). Chi Square test results obtained a p-value of 1,000, which means >0.05 means Ho is accepted and Ha is rejected means there is no relationship between dietary adherence to the incidence of rehospitalization.

Discussion

1. Characteristics of Respondents

The results showed that the majority of respondents were in the age range of 51-60 years (40%). These results are consistent with Suryanti's research in 2014, which also showed the average age of respondents was around 51-60 years, with the majority of them being women (58.3% of the total respondents). The results showed that the majority of respondents were women, as many as 13 people (52%), while men as many as 12 people (48%). This finding is in line with Suryati's research in 2014, which also showed that more women suffer from chronic kidney failure, namely as many as 28 people (58.3%). While men as many as 20 people (41.7%). On average, respondents in this study had undergone hemodialysis therapy for 1-5 years, as many as 20 respondents (80%). This finding is in line with research conducted by Tresna in 2021, which also found that 23 people (50%) of its respondents underwent hemodialysis for 1-5 years. Long time undergoing hemodialysis provides an opportunity for patients to better adapt to the therapeutic program. However, on the other hand, the longer duration of hemodialysis also increases the potential for complications that can hinder adherence to the therapy program. Chronic Kidney Disease patients undergoing hemodialysis are influenced by various factors, including the severity of the disease they experience, disruption of various body systems due to toxins produced by CKD, regulation of fluid and food intake, and adherence to following the hemodialysis schedule (Wijayanti, Isroin, and Purwanti, 2017). Hemodialysis therapy in patients with chronic kidney disease takes a long time, can cause complications, and requires adherence to a diet.

2. Relationship between knowledge of CKD diet and incidence of rehospitalization in CKD on HD patients

Based on the data, it was found that 16 respondents (64%) had adequate knowledge about diet programs. However, the results of the analysis of the relationship between knowledge and

hospitalization using the Chi Square test showed a p-value of 0.09. Since the p-value is greater than 0.05, then the conclusion that can be drawn is that there is no significant relationship between knowledge about CKD diet and the incidence of rehospitalization in CKD on HD patients in the Gladiolus Room of Cileungsi Hospital.

This result is in line with the findings in a study conducted by Suryati (2014), which also showed that there was no significant relationship between the level of knowledge and the incidence of rehospitalization in chronic renal failure patients at Tarakan Regional Hospital, with a p-value of 1,000. The study is consistent with the existing theory that patients' knowledge of the disease and therapy is crucial. The goal of increasing knowledge is to prevent the incidence of rehospitalization in patients with chronic renal failure. However, the results showed that increased knowledge alone was not enough to improve patient adherence to treatment. What is more important is that a person must have the resources and motivation to adhere to health care workers' advice on medication, dietary diet, fluid restriction, and the benefits of hemodialysis for survival (Morgan, 2000, as cited in Kamerrer, 2007).

3. Relationship between adherence to CKD diet therapy and the incidence of readmission in CKD on HD patients

The results of the analysis showed a p-value of 1,000, which indicates that Ha (alternative hypothesis) is rejected and Ho (null hypothesis) is accepted. This finding is in line with research conducted by Hartono (2013), which showed that increasing one's knowledge does not always have a positive impact on the level of patient adherence to their diet. Some patients have the belief that what they eat will be discarded during a dialysis session. CKD patients undergoing hemodialysis have various risks and health problems. Almost half of hemodialysis patients also have diabetes, which can lead to additional complications. To solve this problem, patients often need to comply with various restrictions on liquids, phosphate binders, vitamin D supplements, calcimimetic agents, antihypertensive drugs, hypoglycemic agents, erythropoietin, iron supplements, as well as other drugs. In addition, they must also follow a certain diet and regularly attend hemodialysis sessions. Therefore, it is not surprising that approximately 50% of hemodialysis patients do not always adhere to all aspects of their care (Kutner, 2001; Vengros et al., 2004, as cited in Kamerrer, 2007). In addition to medical factors, some patients may also choose not to restrict their diet because they want to enjoy the rest of their lives more freely.

4. Implication and Limitations

The study used accidental sampling techniques so that too few samples were used. And researchers only examined factors from patients (knowledge and compliance), not also examined family factors, such as the role of family in dietary adherence.

Conclusion

In this study, the results of univariate analysis showed that the majority of respondents were women (52%), aged 41-50 years (40%), and had undergone hemodialysis for 1-5 years (80%). However, in the bivariate analysis, there was no relationship between knowledge of diet and adherence to diet therapy with the incidence of rehospitalization in CKD on HD patients in the Gladiolus room of Cileungsi Hospital, with p-values of 0.09 and 1.000 respectively. Therefore, it is necessary to increase patient motivation towards dietary adherence to prevent re-hospitalization in CKD patients. For future studies, it is expected to explore other variables such as the influence of motivation in undergoing dietary adherence on the incidence of rehospitalization in CKD patients.

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