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Overview of Knowledge and Dietary Compliance in Patients Undergoing Hemodialysis at Santa Elisabeth Hospital Medan in 2025

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Abstract. Chronic kidney disease is one of the global health problems that requires long-term therapy, one of which is through hemodialysis. According to the World Health Organization (WHO), adherence to treatment and diet is a key factor in improving the quality of life for patients with chronic diseases. An appropriate diet plays an important role in controlling electrolyte levels, fluids, and toxic substances in the body. This study aims to describe the knowledge and dietary compliance of patients undergoing hemodialysis at Santa Elisabeth Hospital Medan in 2025.This research used a descriptive quantitative design with a cross-sectional approach. The sample consisted of 36 patients selected using purposive sampling techniques. The research instrument was a questionnaire developed based on dietary guidelines for hemodialysis patients according to WHO and the Indonesian Ministry of Health standards. The results showed that among the 36 hemodialysis patients, 15 respondents (41.7%) had a good level of knowledge, 14 respondents (38.9%) had a moderate level, and 7 respondents (19.4%) had a low level of knowledge. Regarding dietary compliance, 13 respondents (36.1%) were compliant, 18 respondents (50.0%) were moderately compliant, and 3 respondents (13.9%) were non-compliant. There was a tendency showing that higher knowledge levels were positively correlated with better dietary compliance, in line with WHO's principle that health education is an essential intervention in managing chronic diseases. This study recommends strengthening ongoing educational programs by healthcare professionals, particularly in delivering accurate and easy-to-understand information about diet management for hemodialysis patients.

Keywords: Chronic Kidney Disease; Dietary Compliance; Hemodialysis; Knowledge; World Health Organization.

1. INTRODUCTION

Hemodialysis is a treatment method that aims to remove fluids and waste substances from the body. This procedure must be performed regularly so that kidney function can be maintained and prevent the deterioration of the patient's health condition. Patients are expected to undergo fluid management, drug therapy, physical activity, and make lifestyle changes, including dietary adjustments.

Hemodialysis is generally given to patients with end-stage renal failure or in acute conditions that require dialysis for a short period of time. In patients with chronic kidney failure, this therapy acts as a preventive measure to prevent death. However, hemodialysis cannot cure or restore damaged kidney function, nor can it replace metabolic or hormonal function lost due to kidney failure, nor does it completely address the impact of kidney failure and its treatment on patients' quality of life (Safitri et al., 2025; Utami et al., 2025).

The implementation of hemodialysis accompanied by proper diet and fluid management is crucial, because excessive fluid consumption can worsen the condition of patients with chronic kidney disease. Although patients are aware that failure in fluid restriction can have serious consequences, about half of patients undergoing hemodialysis do not follow

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the recommended dietary guidelines and fluid restriction (Kutner, 2001, Hartati, 2016). This situation is seen when hemodialysis patients arrive earlier than the time set by the doctor because they have difficulty breathing or a deteriorating physical condition. Non-adherence to fluid dietary restrictions can increase the risk of death in hemodialysis patients if there is an increase in body fluids by as much as 5.7% of dry body weight during the hemodialysis process. Excess fluid volume in the body can lead to an increase in blood pressure and pulmonary edema, which further increases the workload of the heart and emergency conditions on hemodialysis (Relawati, 2016). Based on these problems, this study was carried out to understand the level of compliance of patients undergoing hemodialysis (Fatrida & Mustakim, 2022).

Hemodialysis aims to maintain the balance of fluids in the body so that its composition remains optimal. It is important to avoid a lack or excess of fluids that can cause serious complications in the cardiovascular system in the long run. In patients with kidney failure, fluid intake management must be strictly carried out Thirst is no longer considered an accurate indicator to determine a person's hydration status. Excessive fluid consumption can increase the load on the circulatory system, cause edema, as well as increase the risk of water poisoning. On the other hand, a lack of fluids risks leading to dehydration, low blood pressure, and worsening kidney damage. In addition to monitoring fluid intake and excretion, daily weight measurement is also an important aspect that needs to be considered. Patients must adhere to fluid restrictions to maintain an ideal weight. Weight gain between hemodialysis sessions, called Interdialytic Weight Gain (IDWG), is used as a key indicator to assess the amount of fluid consumed during that period as well as the patient's level of adherence to fluid regulation during therapy (Isroin et al., 2022; Maharani et al., 2025).

According to Widiany (2021), there is a significant relationship between the level of knowledge and adherence to diet in patients with chronic kidney failure. These patients often have difficulty controlling their food and beverage intake, especially for those who are still actively working to provide for their families. In general, adherence refers to how consistently a person follows the treatment instructions given. A variety of factors can affect that level of compliance. This study aims to identify factors that affect dietary adherence in patients undergoing hemodialysis. In contrast to the previous study, this study examined more variables, namely four independent variables, namely knowledge, family support, attitudes, and behavior, and one bound variable, namely dietary adherence. In addition, the study also assessed the factors that most affect dietary adherence in hemodialysis patients.

Patient compliance can be affected by several factors. This study was conducted to examine the factors that affect the dietary adherence of hemodialysis patients. This study reviewed more variables than previous studies, namely four independent variables (knowledge, family support, attitude, behavior) and one dependent variable (dietary adherence). In this study, the most dominant factors affecting the dietary adherence of hemodialysis patients were also examined (Widiany, 2017).

2. LITERATURE REVIEW

According to Sari & 'Atiqoh (2020), Compliance is a term used to describe people's behavior in wearing masks. Compliance is a positive behavior shown by the community when people use masks. Factors that affect compliance depend on many factors, including knowledge, motivation, perception, and belief in disease control and prevention efforts, environmental variables, quality of health instruction, and ability to access available resources. According to Salma et al. (2020), obedience is an attitude of obedience, obedience, while obedience is like to follow orders, obey rules/commands. Meanwhile, according to Niven (2002), client compliance is the extent to which the client's behavior is in accordance with the provisions given by health professionals. Obedience is a manifestation of an attitude and behavior closely related to motivation. This motivation is the power that moves humans to behave.

Dietary adherence can be seen from the change in the percentage of respondents' nutrient intake before and after the intervention. Respondents who complied can be seen from the change in intake that was originally not good (<80% or >110% of needs) to good (80-110% of needs), as well as respondents with good intake from the beginning to the end of the intervention period. The results showed that the respondents' compliance in consuming energy, fluids, and potassium in both groups was not homogeneous. The treatment group was dominated by compliant respondents while the control group was dominated by non-compliant respondents (Widiany, 2017).

3. RESEARCH METHOD

The design of this study is a descriptive research that aims to determine the knowledge and adherence of diet in hemodialysis patients at Santa Elisabeth Hospital Medan in 2025. The study population was 195 patients undergoing treatment in the hemodialysis room, with a sample of 36 patients selected through a sampling procedure as a representative population.

Independent variables are factors that affect other variables, in the form of stimuli or nursing interventions that are observed to see their impact on the patient's response or behavior.

The methods used included a biophysiological approach, observation, interviews, and questionnaires with the main instrument Perceived Dietary Adherence Questionnaire (PDAQ) consisting of 9 Likert scale statements to assess knowledge (0–100%) and dietary adherence (score 0–63). The research was conducted in the Hilaria (HD) room of Santa Elisabeth Hospital Medan. Primary data was collected through questionnaires that had been tested for reliability in previous studies (Astuti Dwi Angraeni, 2021), so they were not retested. This research has also obtained ethical approval with the number 106/KEPK-SE/PE-DT/VII/2025.

4. RESULT AND DISCUSSION

Table 1. Frequency Distribution of Demographic Data Knowledge of Patients Undergoing Hemodialysis at Santa Elisabeth Hospital Medan in 2025.

Category	*f*	*%*
Gender		
Women	18	50.0
Male	18	50.0
Total	36	100.0
Age		
Late Adults 36-45 Years	9	25.0
Pre-Elderly 46-55 Years	13	36.1
Early Seniors 56-65 Years	10	27.8
Elderly Late >65 Years Old	4	11.1
Total	36	100.0
Education		
SD	5	13.9
Junior High School	4	11.1
SMK	18	50.0
S1	3	8.3
	6	16.7
Total	36	100.0
Jobs		
Self-employed	9	25.0
Farmer	4	11.1
IRT	16	44.4
Retirees	7	19.4
Total	36	100.0

In the implementation of this study, the demographic data of patients who undergo hemodialysis can be explained by gender, age, education, occupation, length of time undergoing hemodialysis, frequency and length of time of hemodialysis which are described as follows: Data that has been obtained from a research questionnaire that has been collected from 36 respondents has results that clients who perform hemodialysis at Santa Elisabeth Hospital Medan have clients with male gender as many as 18 respondents (50.0%), with female

gender 18 respondents (50.0%). Clients undergoing hemodialysis with an age range of 36 to 45 years (late adulthood) were 9 respondents (25.0%), patients with an age range of 46-55 years (pre-elderly) were 13 respondents (36.1%), patients with an age range of 56 to 65 years (early elderly) were 10 respondents (27.8%), clients with an age range of >65 years and above (late elderly) as many as 4 respondents (11.1%).

Table 2. Distribution of Frequency and Percentage of Dietary Knowledge in Patients Undergoing Hemodialysis at Santa Elisabeth Hospital Medan in 2025.

Category	*f*	*%*
Good	15	41.7
Enough	14	38.9
Less	7	19.4
Total	36	100.0

The results of the study of patients undergoing hemodialysis amounted to 36 respondents. The level of dietary knowledge category in hemodialysis patients in the hilaria room of Santa Elisabeth Hospital Medan and the good category was 15 respondents (41.7%), 14 respondents (38.9%) were sufficient, and 7 respondents (19.4%) were missing.

Table 3. Distribution of Frequency and Percentage of Dietary Adherence in Patients Undergoing Hemodialysis at Santa Elisabeth Hospital Medan in 2025.

Category	*F*	*%*
Highly compliant	0	0.0
Obedient	13	36.1
Quite obedient	18	50.0
Non-compliant	5	13.9
Very disobedient	0	0.0
Total	36	100.0

The results of the study of patients undergoing hemodialysis amounted to 36 respondents. The level of the diet compliance category in hemodialysis clients in the hilaria room of Santa Elisabeth Hospital Medan and the compliance category was 13 respondents (36.1%), 18 respondents (50.0%) were compliant, and 3 respondents (13.9%) were non-compliant.

Discussion

Based on the results of the study on 36 respondents of hemodialysis patients at Santa Elisabeth Hospital Medan, the level of dietary knowledge was in the good category of 15 respondents (41.7%), 14 respondents (38.9%), and 7 respondents (19.4%) lacking. Meanwhile, the level of dietary adherence showed the category of compliance with 13 respondents (36.1%), 18 respondents (50.0%) with compliant, and 3 respondents (13.9%) with non-compliance.

From these results, there were 7 respondents (19.4%) with limited knowledge which was influenced by several factors such as low education level, limited access to information, lack of counseling, unsupportive environment, low interest, age, and inappropriate way of delivering information. Meanwhile, dietary non-compliance in 3 respondents was influenced by lack of knowledge, low motivation to change diet, environmental influences, as well as economic factors and limited access to appropriate food.

These findings are in line with previous research by Andri Yulianto & Asis Adri, Fitria Masulili & Serly Serly, and Dedi Fatrida & Mustakim which showed that environmental knowledge and support play an important role in dietary adherence in hemodialysis patients, despite differences in the significance of the relationship in some studies.

5. CONCLUSION AND SUGGESTIONS

The conclusion of the study showed that the level of knowledge of hemodialysis patients consisted of 1 respondent (2.8%), 15 respondents (44.4%), and less than 20 respondents, while the level of dietary adherence was in the category of 13 respondents (36.1%), 18 respondents (50.0%), and 3 respondents (13.9%) non-compliant. Based on these results, it is recommended for hemodialysis patients to be more active in seeking information and understanding the importance of diet according to the condition of chronic kidney failure, regularly consult with medical personnel or nutritionists, and comply with dietary recommendations to improve quality of life and reduce complications. In addition, it is recommended for researchers to expand the number of samples and the range of locations so that the results are more representative, add variables such as motivation, family support, and economic status, and use mixed methods (quantitative and qualitative) to make the results more comprehensive.

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