

Original Research Report

## Relationship Between the Behavior with Diet of Chronic Kidney Failure Patients at Johor Health Center

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**Abstract:** Chronic renal failure is a clinical syndrome caused by the annual reduced renal function, progressively and generally irreversible. Renal failure has GFR (Glomerulus Filtration Rate) < 15 ml/minutes needed therapy for change the function of renal. The effective of act as therapy for renal failure is hemodialysis. For undergo hemodialysis to manage diet is very important caused prevent progressively and generally irreversible. The knowledge of patient about diet is significantly required during to the patient is undergoing to diet so can do well for keep balancing in the renal so do its function. This research have purpose to know the correlation between knowledge of the chronic renal failure patients do hemodialysis about diet with compliance of the patient to do chronic renal failure diet in the Puskesmas Johor in 2022. Sample in this studi are 31 respondents who participated in this this study with used purposive sampling. The result of the study showed that there is a correlation between knowledge of the chronic renal failure patients can do hemodialisys about diet with compliance of the patient to do chronic renal failure diet in which  $p < 0.05$ , and the correlation is significant. It is indicated by the coefficient  $r = 0.494$ .

**Keywords:** Chronic Renal Failure, Diet, Hemodialysis.



## 1. Introduction

Kidneys have a very important role in maintaining the overall health of the body because the kidneys are one of the vital organs in the body. If the kidneys are not functioning, health problems related to chronic kidney disease will arise. If someone has chronic kidney disease up to stage 5 or has experienced what is called kidney failure, where the glomerular filtration rate is  $<15$  ml/minute [1]. A severe decline in kidney function in which the kidneys are no longer able to remove metabolic waste products, maintain fluid and electrolyte balance and produce hormones. The inability of the kidneys to excrete metabolic wastes causes symptoms of uremia. In this case dialysis can be done. Dialysis can be done by means of hemodialysis or peritoneal dialysis. The most widely used method is hemodialysis [2].

Akhmad Sapri in November 2018 at the Abdul Moeloek Hospital in Bandar Lampung found chronic kidney failure patients (67.3%) adherent patients and (32.7%) patients who were non-adherent in running a chronic kidney failure diet program. Thus, good diet arrangements are needed to reduce the number of patients who are not compliant with the chronic kidney failure diet program. Dietary adjustment is also necessary in impaired renal function and includes careful regulation of protein intake, fluid intake to replace lost fluids, sodium intake to replace lost sodium and potassium restriction. Implementation of this diet program is very important because it depends on patient compliance in carrying it out. Compliance in question is the extent to which patients carry out dietary recommendations and reduce dietary restrictions [3].

To increase patient understanding in implementing a diet program, health education can be carried out in the form of counseling and consultation [4]. Providing consulting services requires close involvement and collaboration between various related professions who are members of the nutrition support team. As for those who are classified as a nutrition support team, namely doctors, nurses, dieticians, and other health professionals so that nutrients are fulfilled optimally [2]. However, in Indonesia the nutrition support team is still an important issue. This is because the nutrition support team that should be formed in every hospital is still not owned by most hospitals in Indonesia [5]. This condition causes the process of patient understanding of health professional instructions regarding diet programs to be different. As a result, there are patients who understand the diet program and patients who do not understand the diet program.

There is a number of information that patients must understand about chronic kidney failure in order to maintain health and avoid complications associated with chronic kidney failure. The extent of counseling that must be given to patients, nurses provide continuing education and repeat initial lessons while monitoring the patient's progress and their adherence to the treatment program [6]. Recommended nutrition is especially helpful because a number of dietary changes are required. The purpose of this study was to determine the relationship between knowledge of chronic kidney failure patients who underwent hemodialysis about diet and adherence to a chronic kidney failure diet at the Johor Health Center.

## 2. Literature Review

Social support is a condition that is beneficial to individuals who are obtained from other people who can be trusted, so that someone will know that other people pay attention, appreciate and love them [7]. Family social support is defined by Friedman [7]. As a process of the relationship between the family and the social environment.

Different forms of family life today demonstrate varying abilities to provide the necessary support during times of great demand. The management of chronic pain requires greater economic, social, psychological sacrifices than most extended families are ready and able to provide. In this case, chronic kidney failure patients who receive or receive support feel emotionally relieved because they are cared for, get suggestions and have a pleasant impression on them [8].

Sources of family support can be received from the family environment which is felt to be effective for individuals who need it. This is an aspect that needs to be known or understood, so that someone will understand whose support is needed according to their situation and needs. Support has a meaningful meaning for both parties, both those who give and receive support [8].

According to Smeltzer [9], assessment of family structure (members, ages, and rules), communication patterns, and the presence or absence of a support system is an integral part of the patient's profile. Although in the traditional "family" it is usually known that there is a mother, father and children, actually there are various forms of life arrangements in our society. "Family" can mean

two or more people who are bound in a bond of emotion and commitment. Spouses, roommates and close friends can all play significant roles in a personal support system.

Chronic kidney failure or end-stage renal disease or disease (ESRD) is defined as the impairment of renal function or by the progressive and irreversible loss of a large number of nephrons by the progressive and irreversible loss of the body's ability to maintain fluid and electrolyte balance and mechanisms, causing uremia (retention of urea and other nitrogenous wastes in the blood).

Chronic Renal Failure (CKD) is a clinical syndrome caused by a decline in kidney function that is chronic, progressive and irreversible from various causes. End stage renal failure is the level of kidney failure requiring permanent kidney replacement therapy, in the form of dialysis or kidney transplant [10].

[9], explained that chronic kidney failure causes the body's system to be affected by uremia, so that the patient will show a number of signs and symptoms. The severity of signs and symptoms depends on the extent and extent of kidney damage, other underlying conditions and the patient's age. Cardiovascular manifestations of chronic renal failure include hypertension (due to fluid and sodium retention from activation of the renin-angiotensin-aldosterone system), congestive heart failure and pulmonary edema (caused by excess fluid), and pericarditis (caused by irritation of the pericardial lining by uremic toxins).

Diet is a rule of food and drink whose amount is calculated for a certain purpose [11]. Diet is one way to deal with kidney pain, it's just that many people think of a kidney disease diet as something that is troublesome and unpleasant, and many favorite foods can be included in the prohibited list. A strict low-protein, low-calorie diet is sufficient to prevent kidney damage from occurring or continuing. Patients with terminal kidney failure need to receive proper nutritional therapy in order to provide sufficient protein for the repair of body tissues, while the kidneys themselves in this case are no longer able to get rid of the excess protein. Adequate calories, referring to the RDA (Recommended Daily Allowance) to achieve sufficient energy intake to support daily activities and maintain normal body weight [12].

Efforts that can be made by health workers in increasing patient adherence to carrying out the diet program in daily life by identifying the patient's knowledge and trust in the diet program in depth first which then ultimately lead to further responses, namely, whether the patient is compliant or not comply with the diet [4].

### **3. Methodology**

The design in this study is a correlation with the one-shot design. The sample in this study was 31 people using a purposive sampling technique. This research was conducted in September 2021 – February 2022 at the Johor Health Center. The inclusion criteria set were patients with a body weight of 50-59.9 kg (kilograms) who were on a dialysis diet I. Measuring patient knowledge about the Chronic Renal Failure diet used a questionnaire consisting of 15 statements with a dichotomous scale. The correct answer is given a score of "1" and the wrong answer is given a score of "0". Good knowledge with a score of 11-15, moderate knowledge with a score of 6-10 and poor knowledge with a score of 0-5. Measuring patient adherence while on a diet also uses a questionnaire consisting of 15 statements with a dichotomous scale, namely the correct answer is given a score of "1" and the wrong answer given a score of "0". Then the Compliance category with a score of 8-15 and the non-adherent category with a score of 0-7. Analysis of the relationship between knowledge of diet and adherence to a diet using a bivariate correlation test [13].

### **4. Finding and Discussion**

#### **4.1. Frequency and Percentage Distribution of Patients Based on Age, Gender, Education, and Jobs**

Table 1 shows the frequency and percentage distribution of patients by age, sex, education, and occupation. In this case based on the results of the study, the age of the majority of respondents was aged 41-55 years as many as 14 respondents with a percentage (45.2%), male sex as many as 18 respondents with a percentage (58.1%), level of higher education education as many as 13 respondents with a percentage (41.9%) and work as Policeas many as 10 respondents with a percentage (32.3%).

Table 1. Frequency and Percentage Distribution of Patients Based on Age, Gender, Education, and Occupation

	Variable	Frequency (percentage)
Age (Years)	22 – 40	9 (29)
	41 - 55	14 (45.2)
	56 - 65	8 (25.8)
Gender	Male	18 (58.1)
	Female	13 (41.9)
Education Level	Elementary	4 (12.9)
	Middle	4 (12.9)
	High School	10 (32.3)
	University	13 (41.9)
Occupation	Police	10 (32.3)
	Civil Worker	9 (35.5)
	Laborer	4 (12.9)
	Farmer	2 (6.5)
	Others	6 (19.4)

The majority of respondents have good knowledge of 12 respondents (38.7%). This shows that all chronic kidney failure patients already have good knowledge. This can be seen from the 15 statements given to 31 respondents, the average number of statements answered was 11 statements. It is hoped that with good patient knowledge, understanding of dietary goals, types of diets, indications for administration and dietary requirements will be even better. Thus the implementation of the diet program will run as expected. Based on the results of the research, the highest educational level of the respondents was tertiary education, with 13 respondents (41.9%), where the respondents' knowledge and understanding of the diet of patients with chronic kidney failure was probably better than those with elementary, junior high and high school education. This means that the higher a person's level of education, the easier it is for him to receive information so that he has more knowledge. Knowledge or cognitive is a very important domain in shaping one's actions (over behavior), [4]. However, from the results of the study, it was found that the majority of patients' adherence to a chronic kidney failure diet was disobedient. This contradicts the theory put forward by [4], which states that actions based on knowledge will last longer, while actions that are not based on knowledge will not last long. Based on research conducted [14], at the Abdul Moeloek Hospital in Bandar Lampung, it was found (67.3%) that patients adhered to the chronic kidney failure diet and (32.7%) patients who were not adherent to the chronic kidney failure diet. This is contrary to research conducted by researchers at the Johor Health Center.

From the two studies above, it can be concluded that the research conducted by Ahkmad Sapri produced a relationship between knowledge and compliance that is the same as the theory, while the research conducted by researchers was different from the theory. Thus the researchers concluded that between the theory and the research results are contradictory. This can happen because there are factors that influence it. These factors are the patient's lack of awareness in knowing the meaning of the stimulus (object) or the meaning of the diet first, the patient is less interested in the stimulus or diet, the patient does not consider whether the stimulus or diet is good for him or her, the patient does not want to start trying actions which is new or caused because the patient does not want to adopt actions that are in accordance with knowledge, in this case running a diet that is in accordance with the patient's health. The intended knowledge that must be understood by the patient is the purpose of the diet, the type of diet and indications for administration as well as dietary requirements [15].

#### 4.2. Frequency and Percentage of Patient Knowledge about Diet and Diet Compliance

Table 2 shows the frequency and percentage of patient knowledge about diet and adherence to diet. In this study, it was stated that the majority of patients' knowledge about the hemodialysis diet was good (38.7%) and the level of compliance with the diet was disobedient (54.8%).

Table 2. Frequency and Percentage of Patient Knowledge about Diet and Diet Compliance

Variable		Frequency Percentage
Knowledge	Good	12 (38.7)
	Adequate	11 (35.5)
	Low	8 (25.8)
Obedience	Obedient	14 (45.2)
	Not Obedient	17 (54.8)

Based on the identification analysis of the relationship between knowledge and adherence in carrying out the chronic kidney failure diet program, the statistical test value with the Spearman test obtained  $p = 0.005 < 0.05$  indicating that there is a relationship between knowledge and compliance with the diet, and the relationship is moderate, this is indicated by the value of  $r = 0.494$ . Based on the above analysis, the researcher assumes that there are other factors besides knowledge related to adherence of chronic kidney failure patients in carrying out a diet program, namely health education. This health education can be obtained from nurses and doctors. However, nutritionists should have a role in providing health education [16]. Meanwhile, the nurse's task should only be to ensure whether the patient has received health education about nutrition and supervises the patient. What happens is that nurses or doctors often provide health education regarding chronic kidney failure diets that are incomplete, unclear and less thorough because nurses and doctors have less knowledge about nutrition than nutritionists. This results in patients being confused and lacking commitment in carrying out their diet. The statement above is supported by the opinion of [17], saying that health education has an important role in changing and strengthening behavioral factors so as to generate positive behavior from the community. This is in accordance with the opinion of [18], stating that patient health education can improve adherence, as long as the education is active education such as the use of books and tapes by patients independently [19].

Knowledge from reading books or listening to or watching electronic media is also very helpful for patients in understanding the meaning of diet and implementing a diet because it is accompanied by case examples and pictures. According to [20], the factors that influence non-adherence are the unclear understanding of the instructions given by the medical team, the quality of interaction between the patient and the medical team is still lacking, this is because the medical team does not often remind or provide information about the diet. Social isolation, in this case the patient often lacks support from the family and lacks confidence in maintaining life due to the chronic illness the patient is facing, a lack of confidence in dieting, and a personality that is closed to the family and the medical team [21].

#### 4.3. Cross Tabulation of Dietary Knowledge with Adherence to Dieting

Table 3 shows that based on the respondents' answers, it was found that the majority of respondents who were disobedient in carrying out their diet were 17 respondents (54.8%). This can be seen from the 15 questions given to 31 respondents, the average number of questions answered was 6 questions.

Table 3. Cross-Tabulation of Knowledge about Diet with Adherence to Diet

Knowledge	Obedience		Total
	Obedient	Non- Obedient	
Good	8 (25.8)	4 (12.9)	12 (38.7)
Adequate	6 (19.40)	5 (16.1)	11 (35.5)
Low	0 (0)	8 (25.8)	8 (25.8)
Amount	14 (45.2)	17 (54.8)	31 (100)
		$R = 0.494$	$p=0.005$

This shows that the level of adherence of patients with chronic kidney failure in carrying out the chronic kidney failure diet program is still not good because the majority of respondents are disobedient in carrying out the diet program. Lack of patient compliance in carrying out a chronic kidney failure diet will result in further damage to the kidneys on an ongoing basis. This is in line with what was stated by [22], that diet therapy is helpful in slowing the progression of chronic kidney failure. Likewise the research conducted [23], which said (64.29%) patients with chronic kidney failure were disobedient in carrying out a diet at the Johor Health Center.

From the non-adherent respondents, the researchers obtained the results that the things that affected non-adherent patients were due to lazy and bored patients consuming the diet provided by the family. The patient's surrender factor also results in patient disobedience in carrying out their diet [24]. There is a thought that the patient's current condition will not change for the better even if the patient remains compliant with his diet. In addition, there is a lack of adherence because the diet program given to the patient is quite a burden to the patient because there are too many taboos that must be avoided so that the implementation of the diet program that must be followed properly is very difficult. Meanwhile, models of therapy or diet programs can be made as simple as possible and patients are actively involved in making the program so that patients comply with the program [18]. Meanwhile for adherent respondents, the results obtained were that patients adhered to the chronic kidney failure diet because of the patient's commitment and belief that by following the chronic kidney failure diet, the patient hopes to increase life extension. With the hope that the kidneys can function better after going on a diet are also things that affect patients running their chronic kidney failure diet program [25].

In general, good knowledge about chronic kidney failure, how to follow a diet and the impact of chronic kidney failure will influence patients to comply or not adhere to a chronic kidney failure diet. However, patience and persistence in carrying out the diet also contribute to whether the patient is compliant or not [9].

In this study, the results showed that the majority of patients had good knowledge, but the majority of these patients did not adhere to their diet. Apart from the factors described above, the patient and persistence factors also influence it so that it is found that the relationship between patient knowledge and adherence to a chronic kidney failure diet is moderate [26].

## 5. Conclusion

Based on the results of statistical analysis, it can be concluded that there is a significant relationship between the behavior of chronic kidney failure patients undergoing hemodialysis and adherence to a chronic kidney failure diet ( $r = 0.494$ ). Patients should consult with a nutritionist about health education regarding their diet and try to remain compliant in carrying out a regular and sustainable diet starting from the purpose of the diet, the type of diet and indications for administration and dietary requirements by obtaining the diet from the medical team, books, magazines and others. Because by running a diet properly and appropriately can maintain kidney function

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