



## The Relationship of Family Support with Compliance with Fluid Limitations in Chronic Kidney Failure Patients in the Hemodialysa Room of Siti Fatimah Az-Zahra Hospital

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### ABSTRACT

Fluid restrictions cause patients with kidney failure to become stressed and anxious about facing a life-threatening disease. Family support is very much needed for patients with chronic kidney failure. Research Objective: To determine the relationship between family support and compliance with fluid restrictions in patients with chronic kidney failure in the hemodialysis room at Siti Fatimah Az-Zahra Regional Hospital, South Sumatra Province in 2023. Quantitative research method using analytical surveys and using correlational research with a cross sectional design. Research results: There is a significant relationship between family support and compliance with fluid restrictions in chronic kidney failure patients in the hemodialysis room at Siti Fatimah Az-Zahra Regional Hospital, South Sumatra Province in 2023 with a p.value of 0.016 and OR 5.769.

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## INTRODUCTION

*World Health Organization*(WHO, 2017), reports that patients suffering from chronic kidney failure have increased by 50% from the previous year, globally the incidence of chronic kidney failure is more than 500 million people and those who have to live dependent on dialysis (hemodialysis) is 1.5 million people. Chronic kidney failure (CKD) is one of the 12 common causes of death in the world, accounting for 1.1 million deaths due to chronic kidney failure which has increased by 31.7% from 2010 to 2015 (Neuen in Sri Atun W, 2020). The prevalence of chronic kidney disease according to WHO (2018) explains that chronic kidney failure is a health problem. 1/10 of the world's population is identified with chronic kidney disease and an estimated 5 to 10 million patient deaths every year, and an estimated 1.7 million deaths every year due to damage. acute kidney disease (Zulfan et al., 2021).

According to the United States Renal Data System (USRDS) (2018), the proportion of patients with Chronic Kidney Disease (CKD) recognized in Medicare, the number of patients suffering from Chronic Kidney Disease (CKD) was previously 2.7% in 2000 to 13.8% in 2000. 2016. The prevalence of chronic kidney failure (CKD) in the United States with the number of sufferers increasing every year. (Mait G, Nurmansyah M, Bidjuni H, 2021).

According to PENEFRRI (2018) from 2007 to 2018 the number of new patients undergoing hemodialysis in Indonesia totaled 66,433 people, and 132,142 patients were active in hemodialysis therapy in Indonesia. In 2018 new patients undergoing hemodialysis increased to 35,602 people and continues to increase every year. 42% of deaths in 2018, with the highest cardiovascular complications (Aminah, 2020). Generally, chronic kidney failure is treated by receiving hemodialysis or a transplant. Hemodialysis is a kidney replacement with the aim of removing toxins and metabolic waste substances from the body when the kidneys can no longer function normally.

The increase in chronic kidney failure sufferers requires various medical treatments including hemodialysis, peritoneal dialysis or hemofiltration, fluid restrictions and medication to prevent serious complications, the length of treatment depends on the cause and extent of kidney damage. One of the medical procedures for chronic kidney failure sufferers is dialysis with hemodialysis (Susatyo, 2015 in Wijaya and Padila, 2019)

Kidney failure with dialysis is performed on patients with severe functional kidney failure, where the kidneys are no longer able to remove metabolic waste products, retain fluids and electrolytes, and produce hormones. Dialysis can be done by means of hemodialysis or peritoneal dialysis. In the hemodialysis process, blood flow to the kidneys is diverted through a semi-permeable membrane from an artificial kidney (kidney washing machine) so that metabolic waste products can be removed from the body (Nasution N & Jauhari A, 2015).

According to Black & Hawks in Hasanudin F (2022), the basic therapeutic goal of dialysis therapy is to remove the end products of protein metabolism such as urea and creatinine in the blood, maintain serum electrolyte concentrations,

correct acidosis and increase blood bicarbonate levels and eliminate excess fluid.

This fluid restriction causes patients with kidney failure to become stressed and anxious about facing a life-threatening disease. In situations like this, family support is really needed for chronic kidney failure patients (Wijaya, 2019). Based on previous research conducted by Bayu Kurniawan Zain (2022), entitled *The relationship between family support and compliance with fluid intake restrictions in chronic kidney failure patients*, the results of statistical tests using Spearman Rank obtained a value with a correlation of 0.716 and a  $p$  value =  $(0.001) < \alpha (0.05)$ , so it can be concluded that there is a relationship between family support and compliance with fluid intake restrictions in chronic kidney failure patients undergoing hemodialysis at RSUD dr. Mohammad Zyn Sampang in 2022.

Family support is an influential factor in determining a patient's treatment program. The existence of the family is able to provide very meaningful support to the patient when the patient is facing health problems (Septiyanti, 2021). Based on the urgency of the background discussion above, researchers are interested in conducting research on "The relationship between family support and compliance with fluid restrictions in chronic kidney failure patients in the hemodialysis room at Siti Fatimah Az-Zahra Regional Hospital, South Sumatra Province.

## LITERATURE REVIEW

Chronic renal failure (CKD) is a problem that often occurs due to decreased kidney function because the kidneys are a vital organ in maintaining body health. Decreased kidney function causes the kidneys to be unable to maintain the balance of metabolism, fluids and electrolytes which can result in uremia: retention of urea and other nitrogenous waste in the blood (Bare & Smeltzer in Hasanudin F, 2022). The National Kidney Foundation (NKF) Kidney Disease Outcome Quality Initiative (KDOQI) explains that CKD is damage with a glomerular filtration rate (GFR)  $< 60 \text{ ml/minute}/1.73 \text{ m}^2$  for more than 3 months (Black & Hawks in Hasanudin F, 2022). Chronic kidney disease is a condition where there is a gradual (chronic) decline in kidney function which is quite severe due to various kidney diseases. This disease is progressive and generally irreversible (Smeltzer & Bare, 2010). Symptoms of this disease generally include no appetite, nausea, vomiting, dizziness, shortness of breath, fatigue, edema in the extremities and uremia. If the Glomerulo Filtration Rate (GFR) or Creatinine Clearance Test (TKK) value is  $< 25 \text{ ml/minute}$ , a Low Protein Diet is given (Septiyanti, 2021). The stages of CKD according to the National Kidney Foundation (2002) in Hasanudin F (2022) are: Stage I: Kidney damage with normal or increased GFR ( $90 \text{ ml/min}/1.73 \text{ m}^2$ ). Stage II: Mild decrease in GFR, namely  $60\text{-}89 \text{ ml/min}/1.73 \text{ m}^2$ . Asymptomatic, possibly hypertension, blood tests are usually within normal limits. Stage III: Moderate decrease in GFR, namely  $30\text{-}59 \text{ ml/min}/1.73 \text{ m}^2$ . This stage can cause

hypertension, possible anemia and fatigue, anorexia, bone pain, mild increase in BUN and serum creatinine. Stage IV: Severe decrease in GFR, namely 15-29 ml/min/1.73 m<sup>2</sup>. This stage occurs hypertension, anemia, malnutrition, changes in bone metabolism, edema, metabolic acidosis, hypercalcemia, possible uremia and azotemia with increased BUN and serum creatinine levels. Stage V: Severe GFR end-stage kidney disease, namely <15 ml/min/1.73 m<sup>2</sup>. There was a very severe decline in kidney function and renal replacement therapy was carried out. Etiology plays an important role in predicting the clinical course of CKD and its management. The primary cause of CKD will also influence the clinical manifestations which will be very helpful in diagnosis, for example: gout will cause gouty nephropathy. The most common causes of CKD today are DM nephropathy, hypertension, glomerular nephritis, hereditary kidney disease, Obstructive uropathy, interstitial nephritis. Meanwhile in Indonesia, the most common causes of chronic kidney failure are glomerular nephritis, urinary tract infections (UTI), urinary tract stones, diabetic nephropathy, hypertensive nephrosclerosis, polycystic kidneys, and so on (Lv & Zhang in Septiyanti, 2021).

Purpose of Hemodialysis To eliminate end products of protein metabolism such as urea and creatinine in the blood, maintain serum electrolyte concentrations, correct acidosis and increase blood bicarbonate levels, eliminate excess fluid. According to Black & Hawks in Hasanudin F (2022), According to Pernefri in Hasanudin F (2022), the duration of hemodialysis is adjusted to individual needs. Each hemodialysis is carried out for 4-5 hours with a frequency of 2 times per week. The frequency of hemodialysis can be given 3 times per week with a duration of 4-5 hours. ideally 10-15 hours/week.

Family is individuals who have official relationships, such as blood ties, adoption, marriage or guardianship, social and psychological relationships (Yunita Liana, 2022). Family support is the attitude, action of family acceptance towards family members, in the form of informational support, instrumental support and emotional support, so family support is a form of interpersonal relationship which includes attitudes, actions and acceptance towards family members, so that family members feel that someone is paying attention. People who are in a supportive social environment generally have better conditions than their peers without these benefits, because family support is thought to reduce or buffer the effects on an individual's mental health (Friedman in Anggraeni, 2021).

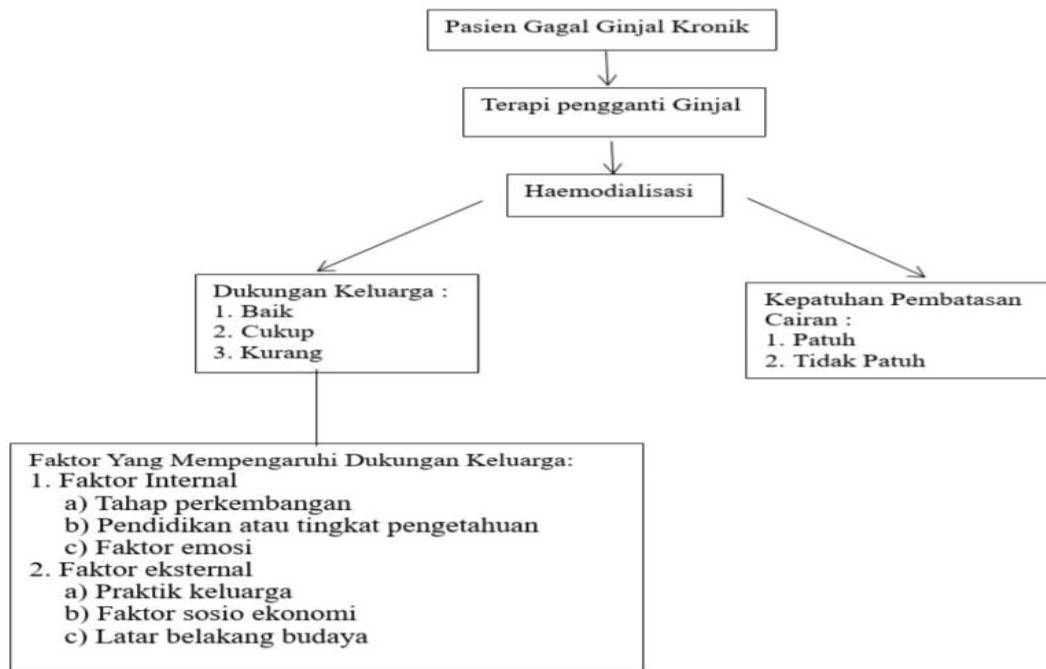


Figure 1. Theoretical Framework

## METHODOLOGY

### *Types of research*

This research is quantitative in nature using analytical survey research methods, namely surveys or research that tries to explore how and why health phenomena occur (Notoatmodjo, 2012 in Septiana, 2020). And using a type of correlational research with a cross sectional design, namely research that describes the relationship between two variables, namely the independent variable and the dependent variable (Septiyanti K, 2021). The population in this study were all hemodialysis patients at Siti Fatimah Az-zahra Regional Hospital South Sumatra Province as many as 95 people, The sample in this study was 49 respondents. The sampling technique in this research used a purposive sampling technique (Mertha Jaya, 2021).

## RESEARCH RESULT

Table 1. Respondent Characteristics

No	Information	Frequency (n)
1	Age	
	a. 30-40 years	2
	b. 41-50 years old	14
	c. 51-60 years old	15
	d. 61-70 years old	14
	e. >70 years	4
	Amount	49
2	<b>Gender</b>	

	Man	27
	Woman	22
	Amount	49
3	<b>Comorbid</b>	
	Hypertension	8
	Diabetes mellitus	4
	Heart disease	1
	There isn't any	36
	Amount	49
4	<b>Work</b>	
	Work	24
	Doesn't work	25
	Amount	49
5	<b>Education</b>	
	elementary school	9
	JUNIOR HIGH SCHOOL	5
	SENIOR HIGH SCHOOL	25
	College	10
	Amount	49

Based on table 1 above, it is known that the majority of respondents were aged between 51-60 years as many as 15 respondents, the majority of respondents were male as many as 27 respondents, the majority of respondents did not have comorbid diseases as many as 36 respondents, the majority of respondents did not work as many as 25 respondents , and most of the respondents had a high school education, 25 respondents.

Table 2. Frequency Distribution Based on Compliance with Fluid Restrictions in Chronic Kidney Failure Patients in RoomHemodialysis at Siti Fatimah Az-Zahra Regional Hospital, South Sumatra Province in 2023.

No	Compliance with Fluid Restrictions in Chronic Kidney Failure Patients	Amount	Percentage (%)
1.	Obedient	22	44.9
2.	Not obey	27	55.1
Amount		49	100

Based on table 2, it is known that the frequency distribution of respondents was mostly 27 respondents (55.1%) who did not comply with fluid restrictions and 22 respondents (44.9%) were compliant.

Table 3. Frequency Distribution Based on Family Support in Room Hemodialysis at Siti Fatimah Az-Zahra District Hospital, Province South Sumatra Year 2023.

No	Family support	Amount	Percentage (%)
1.	Good	23	46.9
2.	Not enough	26	53.1
Amount		49	100

Based on table 5 it is known that the frequency distribution of respondents was that most of the respondents did not receive enough support from their families, namely 26 respondents (53.1%) and respondents who received good support from their families were 23 respondents (46.9%).

Table 4. Relationship between family support and compliance with fluid restrictions in chronic kidney failure patients in the room Hemodialysis Siti Fatimah Az-Zahra Regional Hospital, Province South Sumatra Year 2023.

Family support	Compliance with fluid restrictions in patients with chronic renal failure				N	%	p. Value	OR
	Obedient		Not obey					
	N	%	n	%				
Good	15	65.2	8	34.8	23	100	0.016	5,769
Not enough	7	26.9	19	73.1	26	100		
Total	22		27		49	100		

Based on the table above, it is known that 15 respondents with fluid restriction compliance had good family support, and 7 respondents with fluid restriction compliance had poor family support, while 8 respondents who did not comply with good family support, and 19 respondents who did not comply with poor family support. From the results of the continuity correction test, it was found that  $p.value = 0.016 < \alpha = 0.05$ , this shows that there is a significant relationship between family support and compliance with fluid restrictions in chronic kidney failure patients in the Hemodialysis Room at Siti Fatimah Az-Zahra Regional Hospital, South Sumatra Province. In 2023 and obtained a value of  $OR = 5$ .

## DISCUSSION

### *Respondent Characteristics*

Most of the respondents were aged between 51-60 years as many as 15 respondents, most of the respondents were male as many as 27 respondents, most of the respondents did not have comorbid diseases as many as 36 respondents, most of the respondents did not work as many as 25 respondents, and most of the respondents were educated SMA as many as 25 respondents. In this study, the characteristics of respondents based on age were found to show that of the 28 respondents, most of them were 51-60 years old, 15 respondents. The results of this research are in accordance with the theory stated by Syamsiah (2019), which states that age is closely related to the level of maturity, which means that the more a person's age increases, the greater their maturity or maturity, both technically, psychologically and spiritually. and will be increasingly able to carry out their duties. Increasing age will increase a person's ability to make decisions, think rationally, be tolerant, control emotions and be more open to other people's views, including the decision to take part in therapy programs that have an impact on their health.

The results of the research were based on the gender of the respondents in the hemodialysis room at RSUD dr. Mohammad Zyn Sampang, most of whom are men. Kidney failure is more common in men than women. This is in line with the results of research where the respondents were predominantly male. According to Nurhayati, (2011) this is due to the diet and lifestyle factors of male respondents who like to smoke and drink coffee.

The research results are based on education, most of the respondents have a high school education, 25 respondents. A person's education is related to their level of knowledge and mindset, especially in terms of limiting fluids in patients with chronic kidney failure. Patients with low education tend to have less knowledge and therefore tend to pay less attention to the fluid intake that is allowed into the body. This is in accordance with Septiyanti's statement (2021), which explains that the effectiveness of limiting the amount of fluid in patients with chronic kidney failure depends on knowledge of the amount of fluid they drink. Limiting fluid intake in CKD patients includes being able to monitor daily fluid intake and output.

According to Fitriana (2020), education is a learning process, which means that in education there is a process of growth, development, or towards a more mature, better and more mature individual, family or society. The higher a person's education, the better their preventive behavior. With higher education, a person will tend to get information, knowledge from other people or the mass media, so that a person's life behavior will be better.

In this study, the majority of respondents did not work, 25 respondents. According to Fitriana (2020), work is an activity related to fulfilling economic needs. The better a person's economic level, the easier it will be for someone to access health services, and it will be easier to gain knowledge about health so that their personality behavior will improve.

### ***Compliance with Fluid Restrictions in Chronic Kidney Failure Patients***

Based on the results of univariate analysis, it is known that the frequency distribution of respondents was mostly 27 respondents who did not comply with fluid restrictions and 22 respondents who complied. The results of this study are in line with research conducted by Yuliana (2015), entitled The relationship between family support and compliance with fluid restrictions in chronic kidney failure patients with hemodialysis therapy at PKU Muhammadiyah Hospital Yogyakarta. The results of the frequency distribution of respondents' fluid restriction compliance showed that compliance with fluid restrictions in Chronic kidney failure patients with hemodialysis therapy were in the non-compliant category as many as 26 people, while compliance with fluid restrictions in the non-compliant category was 32 people.

According to Aini (2020), compliance with fluid restrictions is one of the therapies that patients can do to control the amount of fluid they take in according to the amount of fluid they come out so that complications of edema can be avoided. Compliance with fluid calculations and diet planning is one of the most important aspects in managing CKD. In CKD patients, if they do not limit fluid intake by calculating body weight directly, the patient will experience a quite sharp increase in body weight, reaching more than the normal body weight (0.5 kg / 24 hours) which is recommended for chronic kidney failure patients undergoing hemodialysis therapy.

According to Potter & Perry (2005) in Aini (2020), explains that limiting fluids is often difficult for patients, especially if they consume drugs that dry out mucous membranes such as diuretics, thus causing thirst and the client trying to drink. This is because under normal conditions humans cannot survive longer without fluid intake compared to food. Chronic kidney failure patients undergoing hemodialysis therapy who experience failure in diet, fluid management and medication will have a major impact on the patient's own morbidity and survival.

This is in line with Cahyaningsih's (2016) statement, which explains that a patient who experiences chronic kidney failure must be more intensive in having his health problems checked, especially routine dialysis to maintain his life so that he is better able to carry out daily activities. Compliance is the behavior of individuals who obey rules, orders and discipline in taking action for treatment, for example in undergoing therapy.

According to Septiyanti (2021), he explains that the fluid balance in the body of chronic kidney failure (CKD) patients will be disturbed so that the intervention that can be done is limiting fluid intake. If the patient does not limit fluid intake, it will result in fluid accumulation in the body. To achieve good dialysis results, dialysis sufferers need to control their fluids so that they can control waste products and fluids that accumulate before the next dialysis procedure is carried out.

Based on the results of existing research and theory, researchers show that compliance with fluid intake restrictions can be influenced by the behavior

of individuals who obey rules, orders and discipline in taking action for treatment.

### ***Family support***

Based on the results of univariate analysis, it is known that the frequency distribution of respondents was that most of the respondents did not receive enough support from their families, 26 respondents and 23 respondents who received good support from their families.

According to Hambali, et al (2019) regarding the Relationship between Family Support and Compliance with Limiting Fluid Intake in CKD Patients Undergoing Hemodialysis at Tugurejo Regional Hospital, Semarang, they found the same thing, namely that there was a significant relationship between family support and compliance with limiting fluid intake in CKD patients undergoing hemodialysis. CKD patients who received good family support were 15.3%, and compliance with fluid restrictions was in the compliant category as much as 29.2%.

This is in line with Larasati (2018), who states that good family support shows the family's ability to recognize health problems in each family member who experiences changes in health status, namely chronic kidney failure who are undergoing hemodialysis so that they can provide family support in the form of assessment support, instrumental support, information support, and emotional support.

The same thing was expressed by Manalu (2020), who stated that the influence of family support is very important on the patient's well-being both physically and psychologically. The family support that patients receive includes instrumental assistance when the patient is still helped to pay for treatment costs, transportation, and so on. Informational support when the patient's family still provides information about the disease and about what the patient needs to maintain health. Emotional support, when the patient feels safe and calm in the family environment. Patients also receive valuable support and the self-esteem support that patients receive can affect quality of life.

Aini (2020) expressed the same thing, who stated that CKD patients undergoing hemodialysis really need family support. The family can be an influential factor and determine an individual's beliefs and health values, and can also determine the treatment program received. Family support is one of the factors that influences non-compliance. The family can help eliminate temptations to noncompliance and the family can often be a support group for achieving compliance. In this study, the characteristics of respondents based on age were found to show that of the 49 respondents, most of them were 51-60 years old, 15 respondents. In line with research conducted by Yulianto, et al (2017), many CKD sufferers undergoing hemodialysis ranged in age from 46-65 years.

***Relationship between family support and compliance with fluid restrictions in chronic kidney failure patients***

Based on the results of the bivariate analysis, it was found that 15 respondents who adhered to fluid restrictions had good family support, and 19 respondents who did not comply with poor family support.

From family support and compliance with fluid restrictions, the p.value = 0.016, which means it is smaller than  $\alpha = 0.05$ , this shows that there is a significant relationship between family support and compliance with fluid restrictions in chronic kidney failure patients in the Hemodialysis Room at Siti Regional Hospital. Fatimah Az-Zahra, South Sumatra Province in 2023 and obtained a value of OR = 5.769, which means that the better the support provided by the family, the more compliant chronic kidney failure patients will be in limiting fluids by 5.769 times compared to chronic kidney failure patients who do not receive support. from family.

This is in line with previous research by Septiyanti (2019), entitled The relationship between family support and patient knowledge with compliance with fluid restrictions in chronic kidney disease patients undergoing hemodialysis in the hemodialysis room at Dr. RSUD. H. Ibnu Sutowo Baturaja obtained statistical test results using chi-square which showed a p value of 0.006, which means there is a relationship between family support and compliance with fluid restrictions in CKD patients undergoing hemodialysis in the hemodialysis room at Dr. Hospital. H. Ibnu Sutowo Baturaja.

The results of this study are also in line with research conducted by Yuliana (2015), entitled The relationship between family support and compliance with fluid restrictions in chronic kidney failure patients with hemodialysis therapy at PKU Muhammadiyah Hospital Yogyakarta. The results of the Pearson Product Moment statistical test obtained a value of  $p=0.039$  with The significant value is  $p<0.05$ , which means there is a relationship between family support and compliance with fluid restrictions in chronic kidney failure patients with hemodialysis therapy at PKU Muhammadiyah Hospital Yogyakarta with a value of  $p=0.039$  ( $p\text{ value}<0.05$ ).

This is in accordance with Aini's (2019) statement, which states that family support is one of the reinforcing or motivating factors for behavior. Family support in this case provides motivation, attention, and reminds them to always limit fluid intake according to the recommendations of the medical team. Family support is needed because clients with chronic kidney failure will experience a number of changes in their lives thereby eliminating the client's enthusiasm for life. It is hoped that family support can support client compliance. A good relationship between CKD patients undergoing hemodialysis therapy can indirectly motivate patients to get better. From the results of the researcher's observations during the research, it appears that there is a good relationship between the patient and the patient's family. Several respondents said that the support provided by the family made the patient more enthusiastic about undergoing hemodialysis and motivated to recover

from their illness. A similar statement was made by Fitriana (2020), who explained that patients receive information support in the form of health information, education or training, entertainment, and other social activities that support patient activities. By doing activities, patients can feel that their life is useful or meaningful for themselves and others so that they can increase their compliance. Information support is included in the function of family health care for family members. This information support can be provided by the family in the form of providing advice, direction and important information needed by the patient. Based on the results of the research,

Based on the research results and discussion above, the researcher believes that compliance with fluid intake restrictions can be influenced by family support, if the patient is compliant in undergoing hemodialysis then the family support provided is very good, if the patient is not compliant in undergoing hemodialysis then the family support provided is not good. Supportive family support and patient compliance in undergoing hemodialysis is due to very supportive family support so that patients feel comfortable and obedient in undergoing hemodialysis.

## **CONCLUSIONS AND RECOMMENDATIONS**

Most of the respondents were aged between 51-60 years as many as 15 respondents, most of the respondents were male as many as 27 respondents, most of the respondents did not have comorbid diseases as many as 36 respondents, most of the respondents did not work as many as 25 respondents, and most of the respondents had high school education as many as 25 respondents. 2. Frequency distribution of respondents, most of whom did not comply with fluid restrictions, 27 respondents (55.1%), Frequency distribution of respondents, most of whom did not receive support from family, 26 respondents (53.1%), There was a significant relationship between family support and Compliance with fluid restrictions in chronic kidney failure patients in the Hemodialysis Room at Siti Fatimah AzZahra Regional Hospital, South Sumatra Province in 2023 with  $p$ .value = 0.016 and OR = 5.769.

## **ADVANCED RESEARCH**

It is hoped that further research can deepen compliance with fluid intake restrictions in addition to family support, namely age, gender, and education in undergoing hemodialysis therapy, and can provide education about the importance of family support for patients with kidney failure, especially regarding fluid restrictions.

## REFERENCES

- Anggraeni, T. (2021). The relationship between the level of knowledge and family support and dietary compliance in chronic kidney failure patients undergoing hemodialysis at Puri Husada Hospital. Yogyakarta: Health Polytechnic Ministry of Health Yogyakarta.
- Bayhakki, B., & Hasneli, Y. (2018). The relationship between the length of time undergoing hemodialysis and inter-dialytic weight gain (IDWG) in hemodialysis patients. *Padjadjaran Nursing Journal*, 5(3), 242-248.
- Bayhakki, (2013). Renal failure nursing care series. Jakarta; EGC
- Bayu, O.: and Zain, K. (2020) Publication Manuscript of the Nursing Study Program, Ngudia Husada Madura College of Health Sciences 2022. Madura.
- Black, J. M., & Hawks, J. H. (2014). Medical Surgical Nursing. Singapore: Salemba Medika.
- Brunner, I. S., & Suddarth, DS (2010). Brunner & Suddarth's Textbook of Medicalsurgical Nursing (Vol. 1). Philadelphia: Lippincott Williams & Wilkins.
- Creswell, J. W. (2016). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches (Fourth ed.). London: Sage Publications.
- Fitriana, S., & Herlina, S. (2019). Family support with fluid restriction compliance in chronic kidney failure patients undergoing hemodialysis, *Scientific Journal of Public Health* (Vol. 11) 2, 208-213.
- Friedman, M.M., & Bowden, V.R. (2010). Family nursing textbook. Jakarta: EGC.
- Hasanudin, A. (2022). Adequacy of hemodialysis in patients with chronic renal failure. Pekalongan : NEM.
- Hastono, Sutanto Priyo. (2020). Data analysis in the health sector. Depok : Rajawali Press.
- Harwijayanti, BP, Liana, y., et al (2022). Family nursing. Padang: PT. Global Technology Executive.
- Husnaniyah, et al. (2022). Family nursing textbook. Yogyakarta : Deepublish.

- Indonesian Renal Registry. (2019). 11th Report of Indonesian Renal Registry 2018. Jakarta: Indonesian Renal Registry.
- Karyati, S., Sukarmin, S., & Listyaningsih, S. (2019). Relationship between family support and compliance with fluid restrictions in CKD patients at RSUD Raa Soewondo Pati. *Proceedings of The URECOL*, 18(1), 633-638.
- Indonesian Ministry of Health. (2017). *Kidney Failure Disease Situation*. Jakarta: Indonesian Ministry of Health Data and Data Center.
- Indonesian Ministry of Health. (2019). *National Riskesdas Report 2018*. Jakarta: Health Research and Development Agency.
- Lv, J.C., & Zhang, L.X. (2019). Prevalence and Disease Burden of Chronic Kidney Disease. *Adv Exp Med Biol*, 1165, 3-15. doi:10.1007/978-981-13-8871-2\_1
- Kim, O., et al (2020). Relationships between depression, family function, physical symptoms, and illness uncertainty in female patients with chronic kidney disease. *Nurs Health Sci*, 22(3), 548-556. doi:10.1111/nhs.12691
- Metha Jaya, I Made L. (2021). *Quantitative and qualitative research methods*. Quadrant: Yogyakarta.
- Ningrum, WAC, Drajat, MR, & Imardiani, I. (2020). Family support and knowledge regarding compliance with fluid restrictions in patients with chronic renal failure. *Medical Mask*, 8(1), 146-156.
- Notoatmodjo, S. (2012). *Health promotion and health behavior*. Jakarta: Reneika Cipta.
- Notoatmodjo, S. (2018). *Health research methodology*. Jakarta: EGC.
- Nurbadriya, W, D. (2021). *Nursing care for chronic kidney disease with the 3s approach*. Malang : CV. Eternal Archipelago Literacy.
- Nursalam. (2016). *Nursing science research methodology*. Jakarta: Salemba Medika.
- Ozen, N., et al. (2019). Nonadherence in hemodialysis patients and related factors: a multicenter study. *J nurs res*, 27(4), e36. Doi:10.1097/jnr.0000000000000309.