The Relationship Between Family Support and Adherence with Hemodialysis in Chronic Kidney Disease Patients in Kupang City

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ABSTRACT

Background: Chronic kidney disease is a progressive condition requiring long-term therapy, one of which is hemodialysis. Adherence to hemodialysis is crucial for reducing complications and improving patients' quality of life. Family support is considered a factor influencing adherence, but previous research findings remain inconsistent.

Objective: To determine the relationship between family support and adherence with hemodialysis in patients with chronic renal failure in Kupang City.

Methods: This study used an observational analytical cross-sectional design. Data was collected through the completion of family support and ESRD-AQ questionnaires by 163 respondents who met the inclusion and exclusion criteria. Sampling was conducted using purposive sampling. Data analysis was performed using univariate and bivariate analysis with *Fisher's exact* test.

Results: The results showed that 95.7% of patients had good family support, followed by 4.3% who had poor family support. The prevalence of adherence with hemodialysis was 82.8% compliant and 17.2% non-compliant. The statistical test yielded a p-value of 0.345.

Conclusion: There was no significant relationship between family support and adherence with hemodialysis in patients with Chronic Kidney Disease in Kupang City.

KEYWORDS: family support, hemodialysis adherence, ESRD-AQ

INTRODUCTION

Chronic kidney disease is a decline in kidney function lasting more than three months, characterized by a gradual decrease in glomerular filtration rate.[1] This disease has become a growing global health problem due to its progressive nature and long-term health impacts.[2] Untreated kidney failure will progress to end-stage disease, requiring renal replacement therapy such as hemodialysis.[3] The prevalence of chronic kidney disease in Indonesia has been increasing year by year. The 2018 Riskesdas recorded a prevalence of 0.38%.[4] SKI 2023 indicate that the prevalence of chronic kidney disease has increased to 0.22% based on health worker diagnoses, and 0.29% based on symptoms. East Nusa Tenggara Province has a prevalence of chronic kidney disease of 0.28%, higher than the national average.[2] The Indonesian Renal Registry 2020 also shows an increase from 2019 to 2020 of 351 patients undergoing hemodialysis therapy.[5]

Hemodialysis aims to remove metabolic waste, maintain fluid balance, and regulate electrolyte levels in the body.[6] The success of hemodialysis is greatly influenced by adherence to the treatment schedule, dialysis duration, diet, fluid restriction, and medication intake.[7] Non-adherence with hemodialysis increases the risk of complications such as pulmonary edema, hypertension, electrolyte disturbances, and mortality.[8] Patient adherence is influenced by internal and external factors. Family support is one of the important external factors that can increase patient motivation and emotional stability.[9] Families play a role in providing informational, instrumental, and emotional support, as well as assessing patient health behaviors.[10]

Research on the relationship between family support and adherence shows varying results. A study by Milenkova Mimoza *et al.* conducted in North Macedonia in 2020 reported a significant relationship between family support and hemodialysis adherence, showing that patients with family support had significantly higher adherence than patients with low family support.[8] Another study by Rifi *et al.* in 2024 in Bogor found no relationship between family support and hemodialysis adherence, confirming that other factors influence patient adherence behavior.[11]

This study aims to analyze the relationship between family support and hemodialysis adherence in Chronic Kidney Disease patients in Kupang City.

METHOD

This study employed a quantitative analytical approach with a cross-sectional design to examine the relationship between family support and hemodialysis adherence. The study was conducted at Prof. Dr. W.Z. Johannes Regional General Hospital, Siloam Hospital Kupang, and Dr. Ben Mboi General Hospital. Data collection was conducted from August to October of 2025. The study population consisted of all patients with chronic kidney disease undergoing hemodialysis at the three hospitals. Participants were selected using purposive sampling based on predefined inclusion and exclusion criterias. The sample size was 163 respondents.

The research instruments consisted of a family support questionnaire and the ESRD Adherence Questionnaire (ESRD-AQ). The family support questionnaire assessed emotional, instrumental, informational, and appraisal support. The ESRD-AQ assesses adherence to dialysis schedules, therapy duration, medication intake, diet, and fluid restrictions.[12,13]

Univariate analysis was performed to describe respondents' characteristics and study variables. Bivariate analysis used Fisher's exact test due to the presence of cells with low frequencies. The significance level was set at $p < 0.05$.

RESULTS

The study involved 163 respondents with characteristics including age, gender, education level, occupation, duration of hemodialysis, family support, and hemodialysis adherence. Most respondents were aged 46–60 years, male, and had completed senior high school education. The majority had undergone hemodialysis for less than 12 months, and the largest proportion came from Siloam Hospital Kupang.

Table 1. Respondent Characteristics

Characteristics	Frequency (n)	Percentage (%)
Hospital		
Siloam Hospital	77	47
Prof. Dr. W.Z Johannes Regional General Hospital	67	41
Dr. Ben Mboi Central General Hospital	19	11.7
Gender		
Male	91	55.8
Female	72	44.2
Age		
18-25 years	6	3.7
26-35 years	20	12.3
36-45 years	44	27
46-60 years	93	57.1
Education Level		
Elementary	15	9.2
Junior High School	21	12.9
High School	70	42.9
D3	6	3.7
D4	2	1.2
Bachelor's Degree	47	28.8
Master's	2	1.2
Occupation		
Not working	24	14.7
Civil servant	21	12.9
Housewife	45	27.6
Private Employee	41	25.2
Indonesian National Police	3	1.8

Teachers	8	4.9	
Farmer	11	6.7	
Monk	6	3.7	
Retired	4	2.5	
Duration of hemodialysis			
<12 months	62	38	
12-24 months	44	27	
>24 months	57	35	
Total	**163**	**100**	

Family support was classified as good in 95.7% of respondents (Table 2). Hemodialysis adherence was classified as good, with 82.8% of respondents categorized as adherent based on the ESRD-AQ (Table 3). These results indicate that most respondents received adequate family support and adhered well to their treatment regimen.

Table 2. Distribution of Respondents Based on Family Support

Family Support	Frequency(n)	Percentage (%)
Good	156	95.7
Poor	7	4.3
Total	163	100

Table 3. Distribution of Respondents Based on Hemodialysis Adherence

Hemodialysis Adherence	Frequency (n)	Percentage (%)
Compliant	135	82.8
Non-compliant	28	17.2
Total	163	100

Fisher's exact test showed a p-value of 0.345, indicating no significant relationship between family support and hemodialysis adherence. The difference in adherence between patients with good and poor family support was not statistically significant.

Table 4. Statistical Analysis of the Relationship Between Family Support and Hemodialysis Adherence

Family Support	Hemodialysis Adherence	Frequency (n)	Percentage (%)	p
Good	Compliant	130	83.3%	
	Non-compliant	26	16.7	
Subtotal Good		156	100	
Poor	Compliant	5	71.4	0.345
	Non-compliant	2	28.6	
Subtotal Deficient		7	100	
Total		163	100	

DISCUSSION

Based on statistical test results using *Fisher's exact test*, *a p-value > 0.05* was obtained, which means that there is no significant relationship between family support and hemodialysis adherence. The study shows that most respondents receive good family support. Previous similar studies have shown that family support is not always a determining factor in adherence.[14] Adherence involves complex aspects such as risk perception, clinical experience, personal motivation, and interaction with health workers.[9] Hemodialysis patients tend to feel the impact when they do not undergo therapy according to schedule, for example, edema, shortness of breath, or

severe fatigue.[6] In addition, long-term experience and adaptation to hemodialysis therapy are also thought to play a role in shaping adherence behavior. Patients who have undergone hemodialysis for a certain period of time tend to develop self-management mechanisms, routines, and the perception that hemodialysis is essential for maintaining quality of life. Research by Peng et al. and LNU et al. indicate that patients with longer hemodialysis durations have better adherence rates because they have adapted to the demands of long-term therapy.[15]

Family support continues to have a positive impact even though it is not directly related to adherence with hemodialysis. Emotional support has been shown to reduce anxiety, increase psychological resilience, and improve patients' quality of life.[16] Psychological stability has the potential to make it easier for patients to undergo therapy consistently.[17]

Various research findings on the relationship between family support and adherence can be influenced by culture, education level, access to services, and communication patterns between patients and health workers. These factors affect perceptions of the importance of adherence with hemodialysis.[14,18] Interventions to improve adherence need to be multidimensional. Structured education, individual counseling, and improving the quality of hemodialysis services are considered important for strengthening patients' internal motivation and adherence behavior. This approach is more effective than relying solely on family support. [7,14,18]

CONCLUSION

Family support is not significantly related to adherence with hemodialysis in patients with Chronic Kidney Disease in Kupang City. High adherence is more influenced by clinical experience and internal motivation of patients.

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