

The Relationship of Self-Efficacy with Adherence in Restricting Fluid Intake in Middle Adult Hemodialysis Patients

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Abstract—An indicator of the success of ESRD (End-Stage Renal Disease) patients undergoing hemodialysis is adherence to fluid intake restrictions. Several studies showed that one of the factors related to the adherence of fluid restriction is self-efficacy, but the study about this adherence in middle-aged still limitation. The purpose of this study was to identify the relationship between self-efficacy and fluid intake restriction on adult hemodialysis patients in Al-Islam Hospital Bandung. This study used a quantitative method with a cross-sectional design, with 48 respondents recruited by purposive sampling. Collecting data was conducted by questionnaires about self-efficacy and fluid intake restriction adherence on ESRD patients. This bivariate analysis using the Spearman Rank correlation test. The results showed that respondents have high self-efficacy (58.3%) and adherence to restrictions on fluid intake (72.9%). here is a relationship between self-efficacy and respondent adherence to fluid intake restrictions ($r = 0.535$, p -value 0.000), which means that the higher the self-efficacy, the higher the level of adherence to fluid intake restrictions and vice versa. Therefore nurses need to improve patient self-efficacy through providing education about the management of fluid restrictions in patients in all range of age.

Keywords—*Seld-Efficacy, Adherence, Fluid Intake, Middle Adult, Hemodialysis*

I. INTRODUCTION

End-Stage Renal Disease (ESRD) is the final stage of chronic kidney disease (CKD) which is characterized by permanent and irreversible kidney damage. As many as 98% of ESRD sufferers undergo hemodialysis therapy [1]. An important part of hemodialysis (HD) is the adherence to fluid intake restrictions [2], which aims to prevent circulatory overload [3]. Some studies show that fluid restriction is difficult [4], also evoking psychological stress for patients [3]. Non-adherence to fluid restriction is a common problem in HD patients, it was found that about 69% of patients are non-adherence with fluid intake

restrictions [2].

Persistent non-adherence leads to the development of comorbidities such as cardiovascular disease, which account for up to 50% of deaths [5].

Al Islam Hospital Bandung as one of the referral hospitals in West Java recorded that in six ESRD patients who underwent treatment between the time of dialysis, three patients were diagnosed with edema and pleural effusion, two patients had ascites while one patient was diagnosed with pulmonary TB. Based on interviews, information was obtained that almost all patients said they could not obey the programmed fluid restrictions. This is mainly due to thirst, especially when undergoing HD. Most patients feel unsure of being able to eradicate fluid intake.

One internal factor that contributes to adherence to fluid intake restrictions is self-efficacy [6], which includes a positive attitude and increasing patient perceptions of behavioral control over adherence to fluid and dietary restrictions [7]. Age is one of the factors that influence self-efficacy [8]. Increasing age will also increase a person's ability to make decisions, think rationally, control emotions, be tolerant, and be more open to the views of others including his decision to follow therapeutic programs that have an impact on his health [9].

Research has found that older patients are more adherence to fluid intake restrictions [10]. However, other researchers found that there was no effect between the age of patients with adherence to fluid intake restrictions [11].

II. METHOD

This study used quantitative research with a cross-sectional design. This study aimed to identify the relationship of self-efficacy with adherence to fluid intake restrictions in hemodialysis patients in middle adulthood at Al Islam Hospital Bandung. The number of samples in

this study 48 hemodialysis patients. The sampling technique was total sampling. Inclusion criteria include middle adulthood $\geq 40 - \leq 60$ years, hemodialysis 2 times a week, undergoing hemodialysis ≥ 5 years. Exclusion criteria include respondents having decreased consciousness, having complications due to overloads such as edema, pleural effusion, and ascites. The study was conducted at the Hemodialysis Unit of Al Islam Hospital Bandung, in December 2019. This study was approved for passing the ethical test from the Ethics Research Committee of STIKes Aisyiyah Bandung with Number: 054/AKD/STIKes-AB/XII/2019.

Data collection tool using the self-efficacy instrument from previous researchers [12]. Adherence to fluid intake restrictions uses the instrument of adoption from previous researchers to measure self-efficacy and adherence to fluid intake restrictions in ESRD patients [13]. The univariate analysis aimed to describe the characteristics of respondents consisting of age, gender, education, employment, and history of hemodialysis. Bivariate analysis using *Spearman Rank* aimed to determine the relationship of self-efficacy with adherence in intake fluid restriction.

III. RESULT

TABLE I. CHARACTERISTICS OF RESPONDENT (N=48)

Characteristics of the respondent	Frequency (f)	Percentage (%)
Age		
40 – 45 years	10	20.8
46 – 55 years	13	27.1
56 – 60 years	25	52.1
Gender		
Male	28	58.3
Female	20	41.7
Education		
Primary school	7	14.6
Secondary school	8	16.7
High school	20	41.7
Colledge	13	27.1
Employment		
Employed	6	12.5
Unemployed	42	87.5
HD history		
5 - 10 years	46	95.8
11 - 15 years	1	2.1
16 - 20 years	1	2.1

Based on the table above shows that the majority of patients have undergone hemodialysis for 5-10 years (95.8%), unemployed (87.5%), more than half were male

(58.3%), aged 56-60 years (52.1%), and less than half had high school education (41.7%).

TABLE II. FREQUENCY DISTRIBUTION SELF-EFFICACY (N=48)

Self-efficacy	Frequency (f)	Percentage (%)
High	28	58.3
Moderate	20	41.7
Low	0	0

The table above shows that the majority of respondents have high self-efficacy (58.3%).

TABLE III. FREQUENCY DISTRIBUTION RESPONDENT ADHERENCE (N=48)

Adherence	Frequency (f)	Percentage (%)
Adherent	35	72.9
Non-adherent	13	27.1

The table above shows that the majority of respondents (72.9%) adhere to fluid restrictions.

TABLE IV. THE RELATIONSHIP BETWEEN SELF-EFFICACY TO ADHERENCE WITH FLUID RESTRICTION (N=48)

		Fluid Restriction				Total		r	p-value
		Adherent		Non-adherent		f	%		
		f	%	f	%				
Self-efficacy	High	26	54.2	2	4.2	28	58.3	0.535	0.000
	Moderate	9	18.8	11	22.9	20	41.7		
	Low	0	0	0	0	0	0		

The table above shows that most of the respondents have high self-efficacy with adherent as many as 26 respondents (54.2%) and non-adherent as many as 2 respondents (4.2%). Moderate self-efficacy with an adherent of 9 respondents (18.8%) and non-adherent as many as 11 respondents (22.9%). Spearman Rank statistical test results there is a relationship between self-efficacy and respondent adherence to fluid intake restrictions ($r = 0.535, p < 0.05$).

IV. DISCUSSION

The results of the study show that there was a relationship between self-efficacy and respondent adherence to fluid intake restrictions ($r = 0.535, p < 0.05$). This is in line with a previous study that shows self-efficacy has a positive correlation with adherence to fluid intake restrictions [5]. The results of this study were supported by the majority of respondents having high self-efficacy (58.3%) and adhering to fluid restrictions (72.9%). Self-efficacy was one's assured success in doing self-care to achieve the desired result [14]. High and low self-efficacy varies in each person, this is because it is influenced by several factors that influence in perceiving abilities in individuals. These factors are age, sex, education, and experience [15].

The results of the study found that the majority of respondents (95.8%) had undergone hemodialysis for 5-10 years. This is in line with the previous study found that the longer HD duration was associated with a reduced risk of non-adherence to treatment. The reason may be that patients evaluate the effects of dialysis on their bodies and learn to cope with complications by talking to other patients and the healthcare staff [16].

Majority of respondent aged 56-60 years (52,1%), this is in line with study found that individuals in the 20-39 year age group to experience more non-adherent to treatment than the 40-59 year age group [17] although other study found there is no association with different categories of age and sex with adherence level [16], but it was found that younger male patients were at highest risk for non-adherence [18], it is similar that younger people were more non-adherent to the therapeutic regimen compared to their older age counterparts [19]. Young people are reported to experience intense feelings of being independent and therefore not wanting to accept being dependent on the HD machine and fluid restrictions [17]. It can be said that one of the factors that affect adherence to HD treatment is age [20].

This study founded that more than half of the respondents are men (58.3%). This is not similar to another study that found the risk of non-adherence to HD treatment was found to be higher in men [16] women were more adherent to diet and fluid restriction than men [19].

This study found that respondent majority is unemployed. Previous study showed that employment status was found to be inversely related to fluid restriction adherence. These results suggested that subjects who were employed were more likely to be non-adherent to dietary and fluid restrictions [19].

Less than half of the respondents have a high school education. Some studies have identified a low level of

education as a risk factor for non-adherence [16]. In dialysis patients, knowledge has been associated with improved adherence [21]. This is similar to another study found that level of education affects adherence [19] even that understanding treatment instructions and the importance of treatment is probably relatively more important [16].

V. CONCLUSIONS

The results of this study indicate that there is a relationship between self-efficacy and respondent adherence to fluid intake restrictions ($r = 0.535, p\text{-value} = 0.000$), which means that the higher the self-efficacy, the higher the level of adherence to fluid intake restrictions and vice versa. The closeness of the relationship is categorized as moderate ($0.4 - < 0.6$), which means the closeness of the relationship of self-efficacy with adherence of middle-aged adult hemodialysis patients in adherence to fluid intake restrictions is moderate. Therefore nurses need to improve patient self-efficacy through providing education about the management of fluid restrictions in patients in all of age range.

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