

ORIGINAL ARTICLE

Analysis of Self-Efficacy and Characteristics of Patients with Chronic Kidney Disease Underwent Hemodialysis

Rahma Edy Pakaya^{a*} | Yuliana Syam^b | Sahrul Sahrul^c

^aMaster of Nursing Program, Faculty of Nursing, Hasanuddin University, Indonesia

^bDepartment of Medical Surgical Nursing, Faculty of Nursing, Hasanuddin University, Indonesia

^cDepartment of Community and Family Nursing, Faculty of Nursing, Hasanuddin University, Indonesia

*Corresponding author: rahmapakaya78@yahoo.co.id

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ABSTRACT

Introduction: Increased awareness and understanding of the overall burden of CKD are required in managing disease independently. Self-efficacy can support self-management behavior. **Objectives:** This study aims to determine patients' self-efficacy with chronic kidney disease undergoing hemodialysis based on patient characteristics. **Methods:** This study used an analytic survey method with a cross-sectional study approach—sampling with purposive sampling with a sample size of 80 people. Data were analyzed with Mann Whitney, Kruskal-Wallis, Spearman Correlation depending on the type of data available with a confidence level of 95%. **Result:** The results of self-efficacy analysis based on the characteristics of patients with chronic kidney disease undergoing hemodialysis found that there was a correlation between the length of HD and the patient's self-efficacy ($p: 0.008$) where the patient's self-efficacy would increase along with the addition of the patient's HD duration ($r: 0.293$). As for age, several co-morbidities, gender, education, marriage status, employment, financing, religious activities, social activities, blood pressure, and body weight were not related to patient self-efficacy ($p > 0.05$). **Conclusions:** Patient self-efficacy was about blood pressure. As for age, the number of co-morbidities, gender, education, marriage status, employment, financing, religious activities, social activities, length of HD, and body weight was not related to patient self-efficacy.

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1. Introduction

An exciting phenomenon lately is the increasing number of patients suffering from chronic diseases. One of the chronic diseases that has attracted attention is chronic kidney failure (CKD). Prevalence of Chronic Kidney Disease (CKD) worldwide is estimated 13.4% (Hill, et al., 2016) or 8-16% of the entire population (Jha et al., 2013). In Indonesia, based on Riskesdas results in 2018, the population aged 15 years diagnosed with chronic kidney failure in 2018 was 3.8 %, increasing from 0.2 in 2013 (Infodatin, 2017). As for data in Central Sulawesi, the population aged 15 years diagnosed with chronic kidney failure based on Riskesdas of 4.8% more than CKD patients at the national level, namely 3.8% (Riskesdas, 2018).

Increased awareness and understanding of the overall burden of CKD is needed, which can lead to increased knowledge, trust, and involvement in managing the disease independently (Mousa, Ataba, Al-ali, Alkaiyat, Zyoud, 2018). The self-efficacy of CKD patients has a positive relationship with health outcomes and quality of life. Perceived disease-related self-efficacy (DSE) is essential for successfully treating chronic diseases, including CKD (Mousa, Ataba, Al-ali,

[Alkaiyat, Zyoud, 2018](#)). Various forms of self-efficacy can support self-management behavior by people with CKD. Understanding the function and concept of self-efficacy is vital in developing targeted and straightforward implementations and helping the efforts of CKD patients to manage their disease ([Sorat, 2018](#)).

Many studies have been carried out to improve patients' self-efficacy undergoing hemodialysis, but there are no studies that have assessed the relationship between patient characteristics and self-efficacy in patients with chronic kidney disease undergoing hemodialysis. This study aims to analyze self-efficacy in chronic kidney disease patients undergoing hemodialysis based on patient characteristics.

2. Methods

This study is an analytical survey with a cross-sectional approach conducted at Undata Palu Hospital and Anutapura Hospital from January to March 2020. Our population consisted of 148 chronic kidney disease patients who underwent hemodialysis during this period. Using purposive sampling technique with inclusion criteria: diagnosed with CKD stage 5, aged 19-65 years, and willing to be a respondent by signing a consent letter. We included 80 patients (50 samples at Undata Palu Hospital and 30 samples at Anutapura Hospital Palu) in our study.

3. Research Instruments

The research instrument used in this study was a self-efficacy questionnaire. Self-efficacy was assessed with The chronic kidney disease self-efficacy (CKD-SE) instrument consisting of several questions to obtain information from respondents taken from The chronic kidney disease self-efficacy (CKD-SE) instrument composed of 25 question items consisting of on aspects (Autonomy: 8 questions, Self-Integration: 7 questions, Problem Solving: 6 questions, and Seeking Social Support: 4 questions). This questionnaire has been tested for validity and reliability with a value of 64.348% of the total variance. Cronbach's alpha coefficient for the subscale ranges from 0.843 to 0.901 ([Lin et al, 2012](#)).

We used Mann Whitney, Kruskal-Wallis, Spearman Coreelatiom depending on the type of data available. We used an alpha of 0.05 as the level of significance—data analysis using SPSS version 21 software.

The ethical license was approved by the Biomedical Research Ethics Committee, Faculty of Medicine, Hasanuddin University, Makassar. In conducting the research, informed consent was given and informed to be signed by the previous respondent.

4. RESULTS AND DISCUSSION

The description of the characteristics of the respondents showed that the average body weight was 56.7 ± 9.28 kg, the average length of HD was 20.89 ± 28.87 months, the average age of the respondents was 52.88 ± 11.93 years, more than half of the respondents (53.1%) had one disease. The participants, most of them were male (61.2%), most of them had high school education (50.0%), and most were married (80.0%), most of them regularly participated in worship activities (80.0%), most of them had no social activities (72.5 %), and most of their blood pressure was uncontrolled (65.0%), and the average self-efficacy score was 104.45 ± 10.42 (Table 1).

Table 1 Characteristics and Self-Efficacy of Respondents with Chronic Kidney Disease Undergoing Hemodialysis (n=80)

Characteristics and Self-Efficacy	n	%	Mean±SD	Min-Max
Weight (Kg)			56.7±9.28	28-84
HD Length (Month)			20.89±28.87	2-96
Age (Years)			52.88±11.93	18-76
Adult (< 60 Years Old)	55	68.8		
Elderly (≥ 60 Years)	25	31.2		
Number of Co-morbidities			1.34±0.61	0-2
Nothing	6	7.5		
1	41	51.3		
2	33	41.3		
Gender				
Man	49	61.2		
girl	31	38.8		
Education				
SD	9	11.3		
middle school	13	16.3		
high school	40	50.0		
College	18	22.5		
Marital status				
Married	64	80.0		
Single	6	7.5		
Widower widow	10	12.5		
Religious activities				
Routine	64	80.0		
Not a routine	16	20.0		
Social activities				
There is	22	27.5		
Nothing	58	72.5		
Blood pressure				
Controlled (BP< 140/90mmHg)	28	35.0		
Uncontrol (BP≥140/90mmHg)	52	65.0		
Self Efficacy			104.45±10.42	71-124
High	78	97.5		
Low	2	2.5		

The results of the self-efficacy analysis based on the characteristics of Chronic Kidney Disease patients undergoing hemodialysis found a correlation between the length of HD and the patient's self-efficacy ($p:0.008$), where the patient's self-efficacy increased with the increase in the length of HD ($r=0.293$). As for age, the number of co-morbidities, gender, education, marital status, occupation, financing, religious activities, social activities, blood pressure, and body weight were not related to the patient's self-efficacy ($p> 0.05$) (Table 2).

Table 2 Self-Efficacy Based on Characteristics of Respondents of Chronic Kidney Disease Patients Undergoing Hemodialysis (n=80)

Characteristics	Self Efficacy		
	n	Mean±SD	p
Number of Co-morbidities			
Nothing	6	103.17±12.40	0.791**
1	41	104.41±9.44	
2	33	104.73±11.49	
Gender			
Man	49	103.49±11.11	0.384*
girl	31	105.97±9.18	
Education			
SD	9	96.56±12.81	0.065**
middle school	13	100.62±12.36	
high school	40	105.80±9.29	
College	18	108.17±7.60	
Marital status			
Married	64	103.88±10.42	0.787**
Single	6	108.17±8.37	
Widower widow	10	105.90±11.78	
Profession			
civil servant	8	109.50±9.10	0.662**
Private	14	105.00±8.92	
entrepreneur	17	101.65±12.86	
Retired	13	105.00±12.64	
Farmer	5	104.60±9.37	
Student	2	113.00±14.14	
IRT	21	103.24±8.12	
Financing			
BPJS Mandiri	29	102.52±9.65	0.539**
BPJS ASN	40	104.90±11.27	
BPJS PBI	6	108.17±10.30	
Other Insurance	4	106.50±8.34	
Jamkesda	1	112.00±0.0	
Religious activities			
Routine	64	104.61±10.36	0.824*
Not a routine	16	103.81±10.96	
Social activities			
There is	22	103.45±12.57	0.754*
Nothing	58	104.83±9.57	
Blood pressure			
Controlled	28	105.39±8.77	0.599*
Not controlled	52	103.94±11.25	
Age (years)		r: -0.164; p:0.147***	
Weight (Kg)		r: -0.031; p:0.782***	
HD Length (Month)		r: 0.293; p:0.008***	

*Mann Whitney **Kruskal-Wallis ***Spearman Correlation

In this study, 97.5% of patients had high self-efficacy. Self-efficacy or self-belief can be obtained, changed, increased or decreased, through one or a combination of four sources: performance experience, vicarious experience, social persuasion, and emotional arousal. Therefore, one of these things can lead to high self-efficacy. The patient's performance experience or experience achieved in the patient's past has been well fulfilled. Experience can increase efficacy expectations, whereas failure will reduce efficacy. The question experiences in undergoing treatment before hemodialysis is carried out, whether the patient is able to handle it well or not (Wakhid, Wijayanti, & Liyanovitasari, 2018).

The results of the self-efficacy analysis based on the characteristics of Chronic Kidney Disease patients undergoing hemodialysis found that there was a correlation between the length of HD and the patient's self-efficacy (p:0.008) where the patient's self-efficacy increased with the increase in the length of HD of the patient (r:0.293).

Self-efficacy in CKD patients in adults has a positive relationship with patient outcomes. Perceived self-related efficacy (DSE) is essential for the success of chronic disease management. A recent study discusses how ESRD patients treated with HD perform self-management activities in their daily lives (Mousa, Ataba, Al-ali, Alkaiyat, & Zyouid, 2018). Improvements in different aspects of HD patients have been demonstrated by increased self-efficacy, decreased hospitalizations, decreased amputations, interdialytic weight gain control, and improved quality of life of DM patients undergoing HD (Curtin, Walters, Schatell, Pennell, Wise, & Klicko, 2008).

Increased patient self-efficacy can improve self-confidence and support self-care behavior (Wu et al., 2016). Self-efficacy and self-care behavior are closely related. Both have specific effects on the other (Wu et al., 2016) develop a self-efficacy improvement program using self-efficacy as a framework and help patients build self-confidence by applying problem-solving techniques. These patients then shared their experiences with diabetic patients and obtained good results. For CKD patients, the introduction of similar programs to increase self-efficacy can assist in the implementation of healthy behaviors and improve disease management (Wu et al., 2016).

In conducting this study, the researchers found limitations of the study where at the time of the survey, the covid 19 pandemics occurred, which impacted the psychological condition of patients and staff so that it could affect the patient's self-efficacy. In addition, researchers made minimal contact with patients considering the minimal availability of PPE so that researchers could not dig up more detailed information regarding the patient's condition. Nevertheless, this research can provide implications in nursing science in general related to hemodialysis patient care to pay attention to patient self-efficacy to offer holistic services.

5. CONCLUSIONS

Patient self-efficacy is related to blood pressure. As for age, the number of co-morbidities, gender, education, marital status, occupation, financing, religious activities, social activities, duration of HD, and body weight was not related to the patient's self-efficacy. Therefore, it is hoped that health workers, especially nurses, will provide holistic treatment for CKD patients and improve the patient's self-efficacy so that the patient's condition can be more optimal.

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