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

Rahma Edy Pakaya⁎ | Yuliana Syamb | Sahrul Sahrucl

⁎Master 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

ARTICLE INFORMATION

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%. Results: 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.

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,
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, Kruskall-Wallis, Spearman Corelation 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|         |         |
| Uncontrolled (BP≥140/90mmHg)      | 52 | 65.0|         |         |
| Self Efficacy                     |   |     |         |         |
| 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±9.10  |         |
| Education                                            |               |    |               |         |
| SD                                                   | 9             | 96.56±12.81  |         |
| middle school                                        | 13            | 100.62±12.36 | 0.065** |
| 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  |         |
| Private                                              | 14            | 105.00±8.92  |         |
| entrepreneur                                         | 17            | 101.65±12.86 |         |
| Retired                                              | 13            | 105.00±12.64 | 0.662** |
| 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  |         |
| BPJS ASN                                             | 40            | 104.90±11.27 |         |
| BPJS PBI                                             | 6             | 108.17±10.30 | 0.539** |
| 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*** |     |         |

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, & Zyoud, 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.

6. REFERENCES

Bag, E., & Mollaog, M. (2010). The evaluation of self-care and self-efficacy in patients undergoing hemodialysis, 16, 605–610. https://doi.org/10.1111/j.1365-2753.2009.01214.x
Banfield, J., & Wilkerson, B. (2014). Increasing Student Intrinsic Motivation And Self-Efficacy Through Gamification Pedagogy. Contemporary Issues In Education Research, 7(4), 291–298. https://doi.org/10.19030/cier.v7i4.8843
Curtin, R. B., Walters, B. A. J., Schatell, D., Pennell, P., Wise, M., & Klicko, K. (2008). in Patients With Chronic Kidney Disease, 15(2), 191–205. https://doi.org/10.1053/j.ackd.2008.01.006
Hill, N. R., Fatoba, S. T., Oke, J. L., Hirst, J. A., O’Callaghan, C. A., Lasserson, D. S., et al. (2016). Global Prevalence of Chronic Kidney Disease–A Systematic Review and Meta-Analysis. PLOS ONE, DOI:10.1371/journal.pone.0158765.
Infodatin. (2017). Situasi Penyakit Ginjal Kronis. Jakarta: Pusat Data dan Informasi, Kementerian Kesehatan RI.
Jha, V., Garcia-Garcia, G., Iseki, K., Li, Z., Naicker, S., Plattner, B., ... Yang, C. W. (2013). Chronic kidney disease: Global dimension and perspectives. The Lancet, 382(9888), 260–272. https://doi.org/10.1016/S0140-6736(13)60687-X
Kusumastuti, H. (2016) Hubungan Antara Efikasi Diri dalam Perawatan Kesehatan Mandiri dengan Kualitas Hidup Pasien Penyakit Ginjal Kronik yang Menjalani Hemodialisis di RSUD Tugurejo Semarang Universitas Diponegoro Semarang
Lin, C. C. Chia-Chen Wu, Robert M. Anderson, Chao-Sung Chang, Shu-Chen Chang (2012) The Chronic Kidney Disease Self-Efficacy (CKD-SE) Instrument: Development and Psychometric Evaluation. Nephrol Dial Transplant, (27): 3828–3834. doi: 10.1093/ndt/gfr788
Mousa, I., Ataba, R., Al-ali, K., Alkaiyat, A., & Zyoud, S. H. (2018). Dialysis-Related Factors are Affecting Self-Efficacy and Quality of Life in Patients on Hemodialysis: A Cross-Sectional Study From Palestine. *Renal Replacement Therapy*, (21):1-12. https://doi.org/10.1186/s41100-018-0162-y.

Riskesdas. (2018). *Riset Kesehatan Dasar Tahun 2018*. Jakarta: Badan Penelitian dan Pengembangan Kesehatan Kementerian Kesehatan RI

Sorat W. (2018). The Association of Self-Efficacy and Self-Management Behavior in Adult Patients with Chronic Kidney Disease: An Integrative Review. *J Kidney Treat Diagn 2018;1(1):33-40*

Wakhid, A., Wijayanti, E. L., & Liyanovitasari. (2018). Hubungan Efikasi Diri dengan Kualitas Hidup Pasien Gagal Ginjal Kronik yang Menjalani Hemodialisis. *Journal of Holistic Nursing Science (JHNS), Volume 5 No.2 Juli 2018:56-63.*

Wu, S.-F. V., Lee, M., Liang, S., Lu, Y.-Y., Wang, T.-J., & Tung, H.-H. (2011). Effectiveness of a self-efficacy program for persons with diabetes: A randomized controlled trial. 335–343. https://doi.org/10.1111/j.1442-2018.2011.00625.x

Wu, S. V., Hsieh, N., Lin, L., & Tsai, J. (2016). Prediction of Self-Care Behavior on The Basis of Knowledge About Chronic Kidney Disease Using Self-Efficacy as a Mediator. (1), 1–10. https://doi.org/10.1111/jocn.13305

Yuliastuti. E &Suhartini. (2018). Case Study: Awarding Education of Fluids Restriction Management on Impaired Kidney Perfusion for Improving Self-Efficacy of Patients and Families, *IJNHS. 1(1): 49-59*