



Dietary and Fluid Non-Adherence, Self-efficiency, and Inter-Dialytic Weight among Hemodialysis Patients

Adelia Rochma^{1*}, Kusnanto², Suprajitno³

^{1,2}Faculty of Nursing, Universitas Airlangga, Indonesia

³Politeknik Kesehatan Kementrian Kesehatan, Malang, Indonesia

Artikel info

Article history:

Received; July 15th, 2020

Revised: August 04th, 2020

Accepted: August 10th, 2020

Correspondence author:

Adelia Rochma

E-mail: adeliarochma@gmail.com

DOI:

<http://doi.org/10.35654/ijnhs.v3i3.226>

Abstract. Chronic Kidney Disease needs to continue treatment. It can cause some problems for patients. This research was conducted to analyze dietary and fluid non-adherence, Self-efficacy, and IDWG among patients Undergoing hemodialysis. The method used in this study is descriptive with a quantitative research approach. Instruments used in this research were closed questionnaire. The average value of diet and fluid adherence in the participants is 6.18, SE value of the respondents is 65.91, the Percentage of average IDWG, the respondents, are 4.72%. Recommendation: Further research is needed on interventions that can be applied to respondents

Keyword: hemodialysis, dietary and fluid adherence, self-efficacy, inter-dialytic weight



This is an Open Access article distributed under the terms of the Creative Commons Attribution 4.0 International License CC BY - 4.0

INTRODUCTION

Dietary and fluid restrictions are a significant problem in patients with Chronic Kidney Disease (CKD) who undergoing Hemodialysis (HD) (1). Low dietary adherence and fluid restriction in patients can result in complications such as heart disease, impaired cognitive function, increased hospitalization, and mortality (2). Compliance with fluid and dietary controls is the main focus of CKD sufferers to reduce morbidity and mortality (3). Compliance with diet and fluids is still quite low, namely 2% -57% for diet compliance and 10-60% for fluid adherence (4). Based on data obtained from the Indonesian Renal Registry (IRR), 2014 stated that 32% of HD participants experienced a dropout.

Inter-dialytic Weight Gain (IDWG) is one way to evaluate fluid intake in HD patients. IDWG is measured through dry weight or weight after the previous HD is reduced to the next pre HD weight. IDWG exceeds 6% of dry weight (weight after HD) can cause various complications in patients (5). Several factors can influence individual health behavior, namely

knowledge, skills, trust in health (Health Belief), and social support. Research conducted by Wu et al. in 2016 shows that individual health behavior is influenced by the level of knowledge and self-efficacy (SE)

OBJECTIVE

To describe the dietary and fluid non-adherence, Self-efficacy, and IDWG among HD patients in RS Dr. Ramelan Surabaya.

METHOD

The method used in this study is descriptive with a quantitative research approach. The study was conducted at the HD unit of Rumkital Dr. Ramelan Surabaya. We recruited from a dialysis room in Rumkital Dr. Ramelan Surabaya. Inclusion criteria in this research including 1) CKD patients who undergo HD twice a week for > 3 months; 2) 26-55 years old; 3) Having an IDWG increase > 2% for the past four weeks; 4) CKD patients who use Indonesian in communicating; and 5) Stable patient (controlled hypertension, no angina disease, CVA). This research used a random sampling technique and used 108 samples.

Measurements of dietary and fluid adherence were carried out using a compliance questionnaire developed by Lusviana in 2012. The research used a self-efficacy questionnaire on CKD (CKD-SE), which was translated into Indonesian by Pebriyanti in 2016 to measure SE in respondents. IDWG was measured before and after dialysis every week.

This study was approved by the institutional review board (No.19/EC/KERS/2019) in the hospital before participant recruitment.

RESULTS

Characteristic of respondents

Table 1 shows the age range of participants was mostly 46-55 years (57.41%), 61.11% of respondents were male, and most of the respondents had the last education of high school (76.85%). The majority of participants were unemployed 38.89%, and 43.52% of respondents had undergone HD for 13-24 months.

Table 1. Characteristic of respondents

Characteristics	N	%
Age		
26 – 35	9	8.33%
36 – 45	37	34.26%
46 – 55	62	57.41%
Gender		
Man	66	61.11%
Woman	42	38.89%
Education		
High School	83	76.85%
Bachelor	25	23.15%

Occupation		
Civil Servant	16	14.81%
Indonesian National Army	5	4.63%
Employee	11	10.19%
Entrepreneur	34	31.48%
Unemployed	42	38.89%
Duration undergo HD		
3 – 12 months	33	30.56%
13 – 24 months	47	43.52%
>24 months	28	25.92%

Dietary, and fluid adherence, self-efficacy, and IDWG score

Table 2 shows the value of diet and fluid, SE, and IDWG compliance in all participants. The average value of diet and fluid adherence in the participants is 6.18, while the lowest value is four, and the highest value is 9. The average SE value of the respondents is 65.91, while the lowest value is 53, and the highest value is 76. The percentage of average IDWG, the respondents, is 4.72%, while the lowest rate is 3.58%, and the highest percentage is 6.14%.

Table 2. The average of IgA hormone level before and after intervention between the experimental group and the control group

Variable	N	Minimum	Maximum	Mean
Dietary and fluid adherence	108	4.00	9.00	6.18
SE	108	53.00	76.00	65.91
IDWG	108	3.58%	6.14%	4.72%

DISCUSSION

Patients who undergo hemodialysis must pay attention to nutrient and fluid intake every day. Inappropriate nutritional intake and excessive fluid intake can lead to complications in patients. This study's results show the average value of dietary compliance, and respondent's fluid is 6.8, this value is included in the non-adherent category. The research conducted by Bellomo in 2015, showed that adherence was influenced by one of them by sex; namely, men tended to have lower levels of adherence (17).

SE is a person's assessment of his ability to carry out an expected action. SE becomes an essential mediator in individual behavior to conduct appropriate health behavior (5). Patients with HD who have a high SE will encourage individuals to improve their ability to limit nutrition and fluids as recommended.

Excessive IDWG increase can increase the risk of complications in patients undergoing HD, so the IDWG becomes a component that must be evaluated regularly. The percentage of IDWG is stated to be good if it is below 4%, while the percentage of IDWG > 6% is said to be wrong because it has the potential to increase the risk of complications in patients (3). The average IDWG percentage of respondents is 4.72%. This condition indicates that efforts are needed to reduce the rate of IDWG for respondents.

CONCLUSION

Dietary and fluid compliance, SE, and IDWG are the primary keys to health management in patients undergoing HD. For respondents, nutrition and fluid compliance, SE, and IDWG need to be improved to maximize the patient's health condition. Further research is needed on interventions that can be applied to respondents.

REFERENCES

- (1) Cheng T, Tarng D, Liao Y, Lin P. 2016. Effects of systematic nursing instruction on a low-phosphorus diet, serum phosphorus level, and pruritus of patients on hemodialysis. *Journal of Clinical Nursing*. <https://doi.org/10.1111/jocn.13471>.
- (2) Griva K, Nandakumar M, Ng JH, Lam KFY, Mcbain H, Newman SP. 2017. Hemodialysis self-management intervention randomized trial (HED-SMART): a practical, low-intensity intervention to improve adherence and clinical markers in patients receiving hemodialysis. *American Journal of Kidney Disease*. <https://doi.org/10.1053/j.ajkd.2017.09.014>.
- (3) Howren MB, Cozad AJ, Christensen AJ. 2016. The interactive effects of patient control beliefs on adherence to fluid-intake restrictions in hemodialysis : results from a randomized controlled trial. *Journal of Behavioral Medicine*. <https://doi.org/10.1177/1359105316631813>.
- (4) Diamantidis CJ, Zuckerman M, Fink W, Hu P, Yang S, Fink JC. 2012. Article usability of a CKD educational website targeted to patients and their family members. *Clinical Journal of the American Society of Nephrology*. <https://doi.org/10.2215/CJN.03690412>.
- (5) Wu SV, Hsieh N, Lin L, Tsai J. 2016. Prediction of self-care behavior based on knowledge about chronic kidney disease using self-efficacy as a mediator. 2016;(1):1–10.
- (6) Welch JL, Astroth KS, Perkins SM, Johnson CS, Connelly K, Siek KA, et al. 2013. Using a Mobile Application to Self-Monitor Diet and Fluid Intake Among Adults Receiving Hemodialysis. *Journal of Clinical Nursing*. <https://doi.org/10.1111/jocn.13305>.
- (7) Timmerman GM, Tahir MJ, Lewis RM, Samoson D, Temple H, Forman MR. 2017. Self-management of dietary intake using mindful eating to improve dietary intake for individuals with early-stage chronic kidney disease. *Journal of Behavioral Medicine*. <https://doi.org/10.1007/s10865-017-9835-1>.
- (8) Teng H, Yen M, Fetzer S, Sung J, Hung S. 2013. Effects of Targeted Interventions on Lifestyle Modifications of Chronic Kidney Disease Patients : Randomized Controlled Trial. *American Journal of Kidney Disease*. <https://doi.org/10.1053/j.ajkd.2016.01.018>.
- (9) Agapito G, Simeoni M, Calabrese B, Car I, Lamprinoudi T, Guzzi PH, et al. 2018. Computer Methods and Programs in Biomedicine DIETOS : A dietary recommender system for chronic disease monitoring and management. *Computer Methods and Programs in Biomedicine*, 153, 93–104. <https://doi.org/10.1016/j.cmpb.2017.10.014>.
- (10) Navis G, Vogt L, Boog PJM Van Der. 2017. Original Investigation Sodium Restriction in Patients With CKD: A Randomized Controlled Trial of Self-management Support. 2017;69(5):576–86.
- (11) Ann M, Woolf K, Mattoo A, Katz SD, Li H, St-jules DE, et al. .2017. The Healthy Hearts and Kidneys (HHK) study : Design a 2 × 2 RCT of technology-supported self-monitoring and social cognitive theory-based counseling to engage overweight people with diabetes and chronic kidney disease in multiple lifestyle changes. 2017;(August)
- (12) Nauta JM, Boog PJM Van Der, Slegten JT, Janssen R, Hettinga M. 2013. Web-based

- Lifestyle Management for Chronic Kidney Disease Patients in a Clinical Setting. 2013;(c):141–6.
- (13) USRDS. 2015.Chapter 1: Incidence, prevalence, patient characteristics, and treatment modalities. 2015 Annu Data Rep. 2015;2:139–58.
 - (14) Sabate, E., 2011. WHO Adherence Meeting Report. Geneva: World Health Organization.
 - (15) Ishani A, Christopher J, Palmer D, Otterness S, Clothier B, Nugent S, et al. 2016. Original investigation telehealth by an interprofessional team in patients with CKD: A randomized controlled trial. *American Journal of Kidney Disease*.<https://doi.org/10.1053/j.ajkd.2016.01.018>.
 - (16) Aliasgharpour M, Shomali M, Moghaddam MZ, Faghihzadeh S, Hospital AM. 2012.Effect of a self-efficacy promotion training program on body weight changes in patients undergoing hemodialysis. *J Ren Care* **38**(3), 155-161. 2012;155–61.
 - (17) Bellomo G, Coccetta P, Pasticci F, Rossi D, et al. 2015. The Effect of Psychological Intervention on Thirst and Interdialytic Weight Gain in Patients on Chronic. *J Ren Nutr* [Internet]. 2015;1–7. Available from: <http://dx.doi.org/10.1053/j.jrn.2015.04.005>
 - (18) Pamungkas RA, Chinnawong T, Kritpracha C. Dietary behavior among Muslim patients with poorly controlled type 2 diabetes mellitus in a community setting in Indonesia. *International Journal of Medical and Pharmaceutical Science*. 2015, 5(10): 08-13.