Lifestyle of Chronic Kidney Failure Patients before Undergoing Hemodialysis in Medan, Indonesia

Cholina Trisa Siregar[1], Novi Yulisa Harahap[1], Siti Zahara Nasution[1], Zulkarnain[2], M. Pahala Hanafi Harahap[3] and Muhammad Taufik[4]

[1]*Faculty of Nursing, Universitas Sumatera Utara, Medan, Indonesia*
[2]*Faculty of Psychology, Universitas Sumatera Utara, Medan, Indonesia*
[3]*Faculty of Medicine, Universitas Sumatera Utara, Medan, Indonesia*
[4]*Department of Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Sumatera Utara, Medan, Indonesia*

Keywords: Healthy lifestyle, Renal dialysis, Habits, Humans

Abstract: Changes in a person's lifestyle or habits can result in changes in body rhythm and can cause balance disorders, resulting in a decrease in bodily functions. The aim of the study was to describe the habits of the patients before chronic kidney failure. Design with sampling using purposive sampling. The inclusion criteria of this study were chronic kidney failure patients who underwent hemodialysis for less than 6 months, had chronic kidney failure not due to diabetes mellitus and hypertension. The number of samples is 50 respondents. Data collection tools using questionnaires made based on the literature Result: The study obtained data on the lifestyle of patients before suffering from chronic kidney failure that is an unhealthy lifestyle as many as 44 people (88%). This lifestyle is judged by 4 habits, namely the habit of consuming food that is not good as many as 45 people (90%), amounting to 45 people (90%) lack of physical activity, bad daily life of 40 people (80%) and resting less by 37 people (74%). A healthy lifestyle requires the attention of health workers, especially for patients who are at risk of decreased organ function.

1 INTRODUCTION

Changes in the body's homeostasis can be caused by a decrease in kidney function, a continued decline in kidney function resulting in chronic kidney failure that is at risk of causing a high rate of morbidity and mortality. Decreased kidney function requires permanent kidney replacement therapy, namely dialysis or kidney transplantation (Gansevoort et al., 2013). Chronic kidney failure has increased and is becoming a very serious health problem in the world. Chronic renal failure caused the death of the 27th sequence in the world in 1990 and increased to 18th in 2010 (Mills et al., 2015). Chronic kidney failure sufferers who undergo dialysis therapy or kidney transplantation are more than 2 million and only around 10% experience it routinely, so that millions of people die every year because they don't have access to treatment (Ri, 2018). Basic health data (Kesehatan, 2018) patients with chronic failure based on the most age is 65-74 years, the most sex is Male (4.17%). According to the Indonesian Minister of Health that risk factors for chronic kidney failure can be caused by hypertension (25.8%), obesity (5.40%), diabetes mellitus (2.3%)(Ri, 2018). Indonesian Renal Registry (IRR), 2015 data on risk factors for chronic kidney failure that occur in young adults is caused by Diabetes Mellitus, hypertension, smoking habits and consumption of supplement drinks.

Chronic kidney failure can be caused by changes in modern lifestyle that do not pay attention to health such as lack of activity, consuming unhealthy eating and drinking (Susanto, 2003). Changes in lifestyle of patients with chronic kidney failure are caused by a lot of the wrong lifestyle by consuming energy drinks, lack of rest, consuming excessive supplement drinks and foods containing preservatives consuming fast food, stressful busyness, sitting all day in the office, often drinking coffee, energy drinks, rarely consuming water is a bad habit is a risk factor for kidney damage (White et al., 2009). The economic level can affect the pattern or type of food consumed, changes in lifestyle or habits of a person must be able to change the way of thinking by changing one's paradigm

Trisa Siregar, C., Yulisa Harahap, N., Zahara Nasution, S., Zulkarnain, ., Pahala Hanafi Harahap, M. and Taufik, M.
Lifestyle of Chronic Kidney Failure Patients before Undergoing Hemodialysis in Medan, Indonesia.
DOI: 10.5220/0010137600002775
In *Proceedings of the 1st International MIPAnet Conference on Science and Mathematics (IMC-SciMath 2019)*, pages 138-142
ISBN: 978-989-758-556-2

(Suhardjo, 2008).

This habit change resulted in a decrease in kidney function and increased mortality and morbidity in the world (Howden et al., 2013). Chronic kidney failure has a risk of 3 to 4 contracting infectious diseases such as influenza, pneumococcal pneumonia, hepatitis and other diseases due to decreased immune system (Naqvi & Collins, 2006). (Levey & Coresh, 2012) said the decline in the ability of the kidneys to perform their functions causes a high risk of complications such as cardiovascular, acute kidney injury, infection, cognitive impairment, and impaired physical function . Complications can occur at any stage of decline in kidney function and cause death.

Chronic kidney disease in addition to causing physiological changes also affects psychological and social changes in patients such as the addition of funds for hemodialysis actions that patients undergo (Muehrer et al., 2011). Increasing the number of hemodialysis patients each year also causes many complications such as increased interdialytic weight gain, nutrition, skin problems, and insomnia during or after undergoing hemodialysis sessions. Other complications experienced by patients when undergoing hemodialysis are interradial hypertension, hypotension, muscle cramps, access problems, chills, headaches, nausea and vomiting, itching, and others. This condition can result in a decrease in the quality of life of the patient. Hemodialysis therapy indirectly affects the quality of life of patients, such as physical, psychological, spiritual health, socioeconomic status and changes in the functioning of family (Cavalli, et al., 2010).

2 METHODS

The design used in this research is exploratory descriptive with a retrospective approach. This study aims to explore information about the lifestyle of the patient before undergoing chronic kidney failure. Sampling using a purposive sampling method involving 50 respondents. Criteria for inclusion are chronic kidney failure patients who have just undergone 6 months of hemodialysis, the cause of chronic kidney failure due to diabetes mellitus and hypertension. This research was conducted from March to July 2019. The instrument used was a questionnaire consisting of data on the characteristics of respondents and the lifestyle of patients before experiencing chronic kidney failure. The research questionnaire uses the Guttman scale, the statement yes given a score of 1 and given a value of 0 for no. Rating categories consisting of nutrients are stated in statements number 1, 2, 3, 4, 5 and 6; bad habits statements number 7, 8, 9, 10, 11, 12 and 13; physical activity statements number 14 and 15; Ability to break statement number 16.

The research instrument was based on a literature review and validation was tested with the CVI (Content Validity Index). The CVI result of the instrument is 1.00 so that the patient's lifestyle questionnaire before experiencing conic kidney failure is declared valid and can be used for research. The reliability test of the lifestyle instrument of the patient used KR 21 involving 30 people who had the same criteria as this study. If the KR 21 test results are obtained by 0.90 or more, then the lifestyle instrument is declared reliable for this study. Data collection was carried out when the respondent was undergoing hemodialysis therapy and respondents who were unwilling were not included in the study sample. Data analysis uses a frequency distribution to see the highest data that causes kidney function decline. The data submitted by the patient is kept confidential and this study has received ethical tests from the Faculty of Nursing, University of North Sumatra.

3 RESULTS

3.1 Characteristics of Respondents

Table 1 depicts the highest age data for middle adult as many as 37 (74%) respondents, 14 majority respondents with no work status as many as 35 (70%), most male sex as much as 32 (64%).

Table 1. Characteristics of respondents in the hemodialysis room in Medan City in 2019

Characteristics respondent	f	%
Age:		
Teenagar	6	12
Young Adult	7	14
Middle Adult	37	74
Occupation		
Work	15	30
Does not work	35	70
Gender:		
Female	18	36
Male	32	64

Table 1 shows the majority of male respondents as many as 64 people (54.7%), age range 41-60 years as many as 66 people (56.4%), 53 senior high school

education (45.3%), 48 self-employed (41%), the married status of 108 people (92.3%).

3.2 Patient's Lifestyle before Experiencing Chronic Kidney Failure.

Table 2 Ilustrates the lifestyle of respondents before experiencing the highest chronic kidney failure, which is a bad lifestyle of 44 people (88%).

Table 2. Lifestyle of patients before chronic renal failure Medan City in 2019

Lifestyle	f	%
Well	6	12
Not Good	44	88

Table 3. Lifestyle categories of patients before experiencing chronic kidney failure in Medan City in 2019

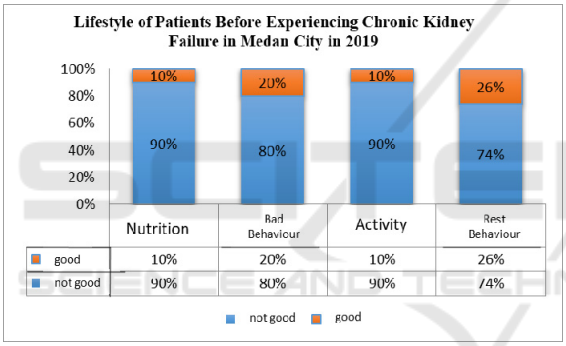

Table 3 illustrates 4 lifestyle categories of patients before experiencing chronic kidney failure, namely Nutrition 90% is not good and 10% is good, Bad Habits 80% is not good and 20% is good, Physical Activity 90% is not good and 10% is good, Resting Habits 74% not good and 26% good.

Table 4. Data on cross-tabulation of patient lifestyle before experiencing chronic kidney failure in Medan City in 2019

		Nutrition		Bad Behaviour		Activity		Rest Behaviour	
		G	NG	G	NG	G	NG	G	NG
Work	Not	2	13	4	11	2	13	4	12
	Work	4%	26%	8%	22%	4%	26%	8%	24%
	Work	3	32	6	29	3	32	9	25
		6%	64%	12%	58%	6%	64%	18%	50%

G = good
NG = Not good

Table 4 illustrates the cross table data between work and 4 aspects of the patient's lifestyle. based on 4 aspects. The results of cross-tabulation of jobs with the highest nutritional value that is not working with aspects of poor nutrition that is equal to 32 (64%); the results of the work of cross-tabulation of jobs with bad habits the highest value is work and bad habits that are not good is 29 (58%); cross-tabulation of the highest value of work with physical activity is 32 (64%; the highest value of cross-tabulation between work with the habit of resting the highest value is working with bad rest habits that are 25 (50%).

4 DISCUSSION

The results of this study obtained patient lifestyle data before experiencing chronic kidney failure which was studied as many as 50 patients with 4 lifestyle factors of patients before experiencing chronic kidney failures such as Nutrition, Bad Habits, Physical Activity, and resting habits. Patients with chronic kidney failure mostly have a history of bad lifestyle. The results of this study are similar to Dewi's research, from 40 patients who were examined from 3 lifestyle factors of chronic kidney failure such as Physical Activity, Substance Use, and Diet Patterns, having 23 patients (57.5%) having unhealthy lifestyles before undergoing hemodialysis therapy (Publikasi, 2018) .

Consuming bad nutrients is influenced by the work environment that makes them not care about good nutrition patterns, eating fast food such as canned foods, fried foods, packaged rice and everyday cooking using flavoring. Modern lifestyles change lifestyles such as eating fast food, canned foods, bottled chili sauce, canned drinks, fruits and vegetables that use preservatives, foods rich in fat, foods rich in cholesterol. People who do not pay attention to the composition of nutrients contained in daily food will be more susceptible to disease than those who are careful in consuming food. Foods that contain high carbohydrate content but lack of fiber such as fast food, accelerate the accumulation of fat in the body that triggers obesity. Obese individuals are prone to type 2 diabetes mellitus and cardiovascular disease. Fat accumulation in the abdominal area is one of the risk factors that trigger diabetes mellitus. An increase in diabetics will increase the number of people with kidney disease due to complications from diabetes, namely diabetes nephropathy (Ortiz et al., 2014).

Bad habits are carried out such as drinking alcohol from family and environmental factors that make them try to drink alcohol and wine so that it is addictive. Promotions and invitations of friends to try herbal medicines such as body administrators,

body massagers, to cure diseases and beautify themselves and types of herbal medicines that are often consumed, supplement drinks consumed by male patients work as drivers and consume water that does not meet the body's needs

Environmental factors including exposure to heavy metals such as lead, cadmium, arsenic, use of chemicals for plants (agrochemicals) and some Chinese herbal medicines, use of nonsteroidal anti-inflammatory drugs, and infectious diseases leptospirosis, hantavirus, leprosy, and malaria are endemic diseases in Indonesia. a cause of chronic kidney failure (Soderland, et al., 2010). The statement of Bruno & Langford that a bad lifestyle is seen from the use of substances is risky behavior such as smoking, using drugs not in accordance with the rules that have been given, the use of chemicals that are harmful to the body (Stack & Murthy, 2010). This behavior, if carried out by individuals in the long term, can result in disruption of kidney work that ends with chronic kidney failure. The results of this study indicate that people who take herbal medicines are 11.76 times more at risk of developing chronic kidney failure compared to those who do not consume herbal medicines (Gluba-brz, et al., 2017). Previous studies also mentioned that consumption of herbal medicines is a risk factor for kidney failure. The results of research on the majority of patients before experiencing chronic kidney failure are the physical activity of patients is not good because of the work factors that make them unable to do exercise every day and work at home. The results of this study are similar to Dewi's research, from 40 patients examined in 19 patients whose physical activity was 47.5% and 21 patients whose physical activity was not good, 52.5%. Individuals who have low physical activity are at risk of experiencing various diseases such as diabetes, hyperlipidemia, hypertension, and obesity (Publikasi, 2018).

Adequate rest is needed by our body. Lack of sleep can cause the body limp, no enthusiasm, irritability, and stress. Prolonged stress can result in a persistent increase in blood pressure (Sorat, 2019). Factor research results that resulted in respondents not paying attention to resting habits due to factors working and often out at night with friends so that the decreasing sleep act does not meet the body's needs.

5 CONCLUSION

A healthy lifestyle is important to prevent a decline in organs. Unhealthy lifestyles such as the intake of nutrients that do not fit the body's needs, poor abusive habits, lack of physical activity and resting habits that do not meet the body's needs are the cause of chronic kidney failure.

ACKNOWLEDGEMENTS

The authors thank the Ministry of Research, Technology, and Higher Education, the Republic of Indonesia for funding this research through Research Grant in 2019

REFERENCES

Cavalli, A., Vecchio, L. D. E. L., Manzoni, C., & Locatelli, F. (2010). HEMODIALYSIS : REVIEWS E, 62(1), 1–12.

Gansevoort, R. T., Correa-rotter, R., Hemmelgarn, B. R., Jafar, T. H., Heerspink, H. J. L., & Mann, J. F. (2013). Globa Kidney Disease 5 Chronic kidney disease and cardiovascular risk : epidemiology , mechanisms , and prevention. The Lancet, 382(9889), 339–352. https://doi.org/10.1016/S0140-6736(13)60595-4

Gluba-brz, A., Franczyk, B., & Rysz, J. (2017). Vegetarian Diet in Chronic Kidney Disease — A Friend or Foe, 1–16. https://doi.org/10.3390/nu9040374

Howden, E. J., Leano, R., Petchey, W., Coombes, J. S., Isbel, N. M., & Marwick, T. H. (2013). Article Effects of Exercise and Lifestyle Intervention on Cardiovascular Function in CKD, 8. https://doi.org/10.2215/CJN.10141012

Kesehatan, K. (2018). HASIL UTAMA RISKESDAS 2018.

Levey, A. S., & Coresh, J. (2012). Chronic kidney disease. The Lancet, 379(9811), 165–180. https://doi.org/10.1016/S0140-6736(11)60178-5

Mills, K. T., Xu, Y., Zhang, W., Bundy, J. D., Chen, C., Kelly, T. N., … He, J. (2015). A systematic analysis of worldwide population-based data on the global burden of chronic kidney disease in 2010, 950–957. https://doi.org/10.1038/ki.2015.230

Muehrer, R. J., Schatell, D., Witten, B., Gangnon, R., Becker, B. N., & Hofmann, R. M. (2011). Factors Affecting Employment at Initiation of Dialysis, 489–496. https://doi.org/10.2215/CJN.02550310

Naqvi, S. B., & Collins, A. J. (2006). Infectious Complications in Chronic Kidney Disease, 13(3), 199–204. https://doi.org/10.1053/j.ackd.2006.04.004

Ortiz, A., Covic, A., Fliser, D., Fouque, D., Goldsmith, D., Kanbay, M., … Lyon, D. (2014). Kidney disease 1

Epidemiology , contributors to , and clinical trials of mortality risk in chronic kidney failure, 1831–1843. https://doi.org/10.1016/S0140-6736(14)60384-6

Publikasi, N. (2018). Hubungan gaya hidup dengan kejadian gagal ginjal kronik di rumah sakit pku muhammadiyah yogyakarta naskah publikasi.

Ri, M. K. (2018). Nila F Moeloek.

Soderland, P., Lovekar, S., Weiner, D. E., Brooks, D. R., & Kaufman, J. S. (2010). Chronic Kidney Disease Associated With Environmental Toxins and Exposures. Advances in Chronic Kidney Disease, 17(3), 254–264. https://doi.org/10.1053/j.ackd.2010.03.011

Sorat, W. (2019). PREDICTORS OF QUALITY OF LIFE IN THAI ADULTS WITH EARLY-STAGE CHRONIC KIDNEY DISEASE.

Stack, A. G., & Murthy, B. V. R. (2010). Cigarette Use and Cardiovascular Risk in Chronic Kidney Disease : An Unappreciated Modifiable Lifestyle Risk Factor, 23(3), 298–305. https://doi.org/10.1111/j.1525-139X.2010.00728.x

Susanto, A. S. (2003). MEMBUAT SEGMENTASI BERDASARKAN LIFE STYLE (GAYA HIDUP), 1–6.

White, S. L., Polkinghorne, K. R., Cass, A., Shaw, J. E., Atkins, R. C., & Chadban, S. J. (2009). Alcohol consumption and 5-year onset of chronic kidney disease : the AusDiab study, (March), 2464–2472. https://doi.org/10.1093/ndt/gfp114

Tim Indonesian Renal Registry. (2015). 8th Report of Indonesian Renal Registry

Suhardjo. (2008). Perencanaan Pangan Dan Gizi. Jakarta: Bumi Aksara.