

The Relationship of Duration Undergoing Hemodialysis Therapy and the Quality of Life of Patients with Chronic Kidney Disease at the Rasyida Kidney Hospital

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Abstract

Background: Hemodialysis (HD) is a substitute therapy for kidney function considered to be able to extend the life of patients with chronic kidney disease. Hemodialysis therapy requires a long time, has complications, and requires patient compliance. This will give rise to physiological and psychological stressors for patients which will then affect their quality of life.

Objective: This study aimed to determine the relationship of duration of undergoing hemodialysis therapy and the quality of life of patients with chronic kidney disease at the Rasyida Kidney Hospital in 2020

Methods: Descriptive-analytical with a cross-sectional approach involving 32 respondents of patients with chronic kidney disease undergoing hemodialysis therapy. This study used primary data using the Kidney Disease Quality of Life 36 (KDQOL-36) questionnaire.

Results: There were 15 patients (46.9%) who underwent hemodialysis therapy for more than 12 months and 9 of them had a good quality of life and 6 others had a poor quality of life. Statistical test results using Fisher's Exact Test obtained p value = 0.02 ($p < 0.05$). It can be concluded that there is a significant relationship between the duration of undergoing hemodialysis therapy and the quality of life of patients with chronic kidney disease.

Keywords: Chronic Kidney Disease, hemodialysis, quality of life

1. INTRODUCTION

Chronic Kidney Disease (CKD) is a progressive and irreversible disorder of kidney function in which the body's ability cannot maintain metabolism and electrolyte balance.^{1,2}

Based on data from the World Health Organization (WHO), kidney and urinary tract infections have caused 850,000 deaths annually. This data shows that kidney disease ranked 12th of the highest mortality rate. According to the Society of Nephrology Indonesia (Pernefri) in 2009, the prevalence of chronic kidney disease in Indonesia was around 12.5%, which means that there were 18 million Indonesian adults who suffered from chronic kidney disease. Besides, according to the foundation of kidney care in 2008 in Indonesia, there were 40,000 patients with chronic kidney disease, and in 2010, it increased to 70,000 patients with chronic kidney disease.¹ Based on the results of

data from Basic Health Research in 2018, Chronic Kidney Disease increased from 2% to 3.8% in 2013.³

Among all chronic diseases that affect the population, chronic kidney disease is considered as a disease that gives no hope for healing with the characteristics of the disease that is progressive and triggers various reactions of patients and can endanger the quality of life.⁴

Hemodialysis (HD) is a substitute therapy for kidney function considered to be able to extend the life of patients with chronic kidney disease. However, hemodialysis can also potentially reduce the quality of life of patients undergoing this therapy and increase the mortality rate seven times compared to the general population.⁵ Hemodialysis therapy carried out in the long term will cause several complications, including hypotension and muscle cramps, in which the complications can give rise to

physiological stressors for patients undergoing the therapy. In addition to physiological stressors, the patients can also experience psychological stressors, in which these stressors include fluid restrictions, food consumption restrictions, sleep disturbances, uncertainty about the future, restrictions on daily activities, lack of social interaction with social life, time and place restrictions for work, as well as an economic factor. Patients who undergo this therapy should limit their activities due to the rules arranged by the health workers, resulting in unproductive patients and then their income will decrease and end. Consequently, this will affect the quality of life of patients undergoing hemodialysis therapy.⁶

Another factor influencing the quality of life of patients undergoing hemodialysis therapy is comorbidities. Research data results of Pakpour et al. (2010) obtained that 66% of 250 hemodialysis patients have comorbidities. Based on the results of the Society of Nephrology Indonesia (Pernefri), the highest prevalences of comorbidities in patients undergoing HD therapy are hypertension, diabetes mellitus (DM), primary glomerulopathy, and chronic pyelonephritis.⁶

Based on the explanation of the problem above, the researchers are interested to determine the relationship of duration of undergoing hemodialysis therapy and the quality of life of patients with chronic kidney disease.

2. METHOD

This study used a descriptive analytic research method with cross-sectional design. The independent variable is the duration of undergoing hemodialysis therapy. While the dependent variable is the quality of life in CKD patients. This study was conducted at the

Table1. *Distribution of sample characteristics*

Variable	Frequency	Percentage (%)
Gender		
Male	19	59.4
Female	13	40.6
Age		
<45 years old	3	9.4
45-60 years old	21	65.6
61-65 years old	8	25.0
Education level		
Elementary School	4	12.5
Junior High School	5	15.6
Senior High School	15	46.9
University	8	25.0
Occupation		
Employed	12	37.5

Rasyida Kidney Hospital in January 2020. The population in this study were all patients with chronic kidney disease who underwent hemodialysis therapy at the Rasyida Kidney Hospital. The sample in this study were all patients with chronic kidney disease who underwent hemodialysis therapy and met the inclusion and exclusion criteria. The Inclusion Criteria: above 18 years old, patients are willing to be the research subjects, patients with chronic kidney disease undergoing hemodialysis therapy, patients in the consciousness of compos mentis cooperative. Exclusion Criteria: above 65 years old, have an impaired sense of hearing or vision and psychiatric disorder.

The results of the study were obtained by interview using a questionnaire. The questionnaire used was Kidney Disease Quality of Life 36 (KDQOL-36) to determine the quality of life of patients with CKD undergoing HD therapy.

The data were analyzed statistically based on variables assessed using a computerized system, which was univariate and bivariate analysis. The univariate analysis was carried out to see the frequency distribution of each independent variable and the dependent variable. The bivariate analysis was carried out to analyze the relationship between the independent variable and the dependent variable. The relationship between the two variables was analyzed using Fisher's Exact Test and considered as significant if $p < 0.05$.

3. RESULTS

This study was conducted on 32 CKD patients who underwent hemodialysis therapy at the Rasyida Kidney Hospital.

3.1. Description of Sample Characteristics

The Relationship of Duration Undergoing Hemodialysis Therapy and the Quality of Life of Patients with Chronic Kidney Disease at the Rasyida Kidney Hospital

Unemployed	20	62.5
Duration of undergoing hemodialysis therapy		
< 12 months	19	59.4
> 12 months	13	40.6
Quality of life		
Good	14	43.8
Poor	18	56.2

Based on the frequency of hemodialysis, it shows that about 19 (59.4%) respondents have undergone hemodialysis for less than 12 months and 13 (40.6%) respondents have undergone hemodialysis for more than 12 months. For the quality of life, the majority of patients have poor quality with a total of 18 (56.2%) people and the rest have good quality with a total of 14 (43.8%) people.

Table 2. Fisher's exact test to determine the relationship of duration of undergoing hemodialysis therapy and the quality of life of patients with chronic kidney disease

Duration of Undergoing Hemodialysis Therapy	Quality of Life of Patients				Total		p value
	Good		Poor		n	%	
	n	%	n	%	n	%	
< 12 months	12	85.7	7	38.9	19	59.4	
> 12 months	2	14.3	11	61.1	13	40.6	0.02
Total	14	100	18	100	32	100	

4. DISCUSSION

4.1. Characteristics of Respondents

4.1.1. Gender

Based on the gender of the respondents, male patients are more than female patients, with a total of 19 (59.4%) people. This study is in line with the previous study at the Panembahan Senopati Hospital in Bantul, in which of the 44 respondents who underwent hemodialysis therapy, there were 24 respondents who were male.⁷ It is in contrast to the results of the previous study which found that female patients are more in kidney disease undergoing hemodialysis therapy at the Soeradji Hospital Klaten.⁸ The role of sex hormones in the pathogenesis of kidney disorder receives a lot of attention. From some animal studies, it is known that testosterone is associated with the development of kidney disorders through several mechanisms. This is what causes the development of CKD in male patients is more rapid compared to that in female patients.⁹ This is as revealed by Ganong (2003) in Satyaningrum (2011), that men are far more at risk of developing chronic kidney disease than women, because women have more estrogen hormones. The estrogen hormone serves to inhibit the formation of certain cytokines to inhibit osteoclasts so as not to excessively absorb bone, so that calcium levels are balanced. Calcium has a protective effect by preventing

3.2. Bivariate Analysis

The relationship of duration of undergoing hemodialysis therapy and the quality of life of patients with chronic kidney disease. Table 4.2 shows that there is a significant relationship between the duration of undergoing hemodialysis therapy and the quality of life in patients with chronic kidney disease.

the absorption of oxalate which can form kidney stones as one of the causes of chronic kidney disease.¹⁰

Lifestyle between men and women can also be a reason why sex is a risk factor for CKD. The high intake of dietary protein and calories in men affects the occurrence of kidney disorders. High levels of LDL, triglycerides, uric acid, and low HDL will also accelerate damage to kidney function. Nutrition and lifestyle factors are a tendency that occurs in men.¹¹ The time to begin a low protein diet in chronic kidney disease is still debated, but most nephrologists recommend that a low protein diet begins when the LFG <60 ml/min/1.73 m (stage 3 of CKD). Modifications of protein diets in CKD patients can be divided into: very low protein, less than 0.3 g/kg of body weight; low protein diet, 0.6-0.8 g/kg of body weight, and normal protein diet, 1-1.2 g/kg of body weight.¹²

4.1.2. Age

Seen from the age distribution, the majority of respondents in this study were 45-60 years old, with a total of 21 (65.6%) people. This is in line with a previous study that found that the older respondents were 51 (53.7%) people compared to the younger respondents of 44 (46.3%) people.¹³ The age of respondents who were found as elderly or above 45 years old was also associated with a risk of kidney function decline. There is a change in kidney function

along with age after 40 years old, in which there is a progressive decrease in GFR until the age of 70 years old, which is approximately about 50% of normal conditions.¹⁴

4.1.3. Education Level

For the education level of respondents, it shows that the majority of respondents are a high school level education of 15 (46.9%) people. Patients who have higher education levels will have broader knowledge to enable self-mastery in dealing with problems, easy to understand what is recommended by health workers and can reduce anxiety so that it can help the individual in making decisions.¹⁵ Previous studies indicate that the higher a person's education, he or she will tend to behave positively because the education obtained can lay the foundations of understanding (comprehending) and behavior of the person.¹⁶ In this study, the researchers did not find that the level of education influences the quality of life of patients undergoing hemodialysis therapy. This may be because hemodialysis workers provide a good explanation to patients, so patients with any level of education can understand the procedure in undergoing hemodialysis therapy.

4.1.4. Occupation

Based on occupation, the majority of respondents are unemployed, with a total of 20 (62.5%) people. In line with previous studies, it was found that respondents who underwent hemodialysis therapy were mostly unemployed.¹⁷ Previous studies revealed that the respondents were considered not to have the ability to do activities and also in terms of giving an opinion.¹⁸ Individuals who have to undergo HD therapy often feel worried about their unpredictable illness and disruption in their lives, so that usually patients will experience financial problems and difficulties in maintaining their work.¹⁴

4.1.5. Duration of Undergoing Hemodialysis Therapy

For the duration of respondents in undergoing hemodialysis therapy, it was found that the majority of respondents who underwent hemodialysis in <12 months are 19 (59.4%) people. These results are consistent with the results of previous studies, in which patients who have not undergone HD therapy in a long period (<10 months) are more than the other group, with a total of 47 people (49.5%).¹³ The longer patients undergo HD therapy, the more obedient patients will undergo HD therapy

because usually respondents have reached the stage of accepting. In addition, they are also likely to get a lot of health knowledge from nurses and also doctors about the disease and the importance of carrying out regular HD therapy for them.¹³ Based on other studies, patients who have recently undergone HD therapy have varying degrees of depression from no depression, mild depression, moderate depression or even severe depression, whereas patients who have long undergone hemodialysis therapy continue to have depression but only mild ones.¹⁹

Hemodialysis patients have the lowest survival ability compared to CAPD or kidney transplants.²⁰ The ability of hemodialysis patients to survive is influenced by many aspects, including: family support, compliance to fluid and dietary restrictions, compliance with hemodialysis, comorbidities. These aspects will positively influence the quality of life of patients and reduce 67 mortality rates.^{21, 22}

In this study, the researchers still describe the frequency of duration of patients undergoing hemodialysis therapy in general. The weaknesses in this study are the lack of details on the characteristics of the duration of hemodialysis therapy, the effect of the number of hemodialysis therapy schedules or the factors of respondents based on GFR values.

4.1.6. Quality of Life

For the quality of life of respondents who undergo hemodialysis therapy, most have a poor quality of life with a total of 18 (56.2%) people. This is not in line with previous studies, in which the majority of respondents have an adequate quality of life with a total of 71 (68.9%) people.²³

Quality of life is defined as an individual's perception of their position in life in the cultural context and value system in which they live and concerning their goals, standard expectations and concerns. This definition reflects the view that quality of life is focused on the quality of life that is "accepted" by respondents.²⁴ Factors that affect quality of life include social demographic factors, such as sex, age, education level, and marital status as well as other factors, such as depression, stage of disease, duration of hemodialysis therapy, adequacy of hemodialysis, etc.²⁵

4.1.7. The relationship of duration of undergoing hemodialysis therapy and the quality of life of patients with chronic kidney disease

Statistical test results using the Fisher's Exact Test obtained p value = 0.02 ($p < 0.05$). The results of this study show that there is a relationship between the duration of undergoing hemodialysis therapy and the quality of life in patients with chronic kidney disease at the Rasyida Kidney Hospital. This is in line with previous studies which states that there is a relationship between the duration of undergoing HD therapy and the quality of life of respondents at the RSI Fatimah Cilacap and RSUD Banyumas. However, different results were obtained in the previous study, in which respondents who had recently undergone hemodialysis had a 2.7 times poorer quality of life than those who had long undergone hemodialysis therapy.¹³

The duration of undergoing hemodialysis therapy influences the quality of life. Each patient needs different time in adapting to the changes they experience, such as symptoms, complications and life-long therapy. Thus, the quality of life in patients with chronic kidney disease also fluctuates according to the time needed for each stage of adaptation to hemodialysis therapy. The poor quality of life of respondents is due to the progressive course of CKD and stressors arisen during HD therapy.¹³

The quality of life of patients undergoing HD therapy often decreases because it causes patients to change their routine life habits as well as endurance that continues to decline along with age. Other studies have shown that the quality of life of patients undergoing HD therapy > 5 years is worse in physical and mental components compared to ≤ 5 years. This is related to patients undergoing longer HD therapy, in which it is the same as older patients, a factor that indirectly affects the quality of life of patients.²⁶

5. CONCLUSION

Based on the results of the study and discussion, it can be concluded that most respondents of chronic kidney disease undergoing hemodialysis therapy include men aged 45-60 years old and senior high school education level and the majority are unemployed and have undergone hemodialysis for less than 12 months and most respondents have a poor quality of life and it can be concluded that there is a relationship between the duration of undergoing hemodialysis therapy and the quality of life of patients with chronic kidney disease at the Rasyida Kidney Hospital.

6. SUGGESTION

a. For Patients with Chronic Kidney Disease

Patients with chronic kidney disease are expected to routinely undergo hemodialysis therapy and obey the prohibitions and recommendations explained, so that it is expected that the quality of life of patients with chronic kidney disease will be better.

b. For Nurses

Based on the results of the study, it was found that the majority of respondents had poor quality of life. Nurses are expected to maintain the adequacy of hemodialysis therapy and always remind patients about the diets given, so that the levels of BUN and SC are expected to be stable.

c. For Future Researchers

It is expected that further researchers can continue to carry out the research by focusing more on examining the factors that are biased in this study, such as the influence of the duration of undergoing hemodialysis therapy, the influence of the number of hemodialysis schedules or from respondent factors based on GFR values. In addition, further researchers are also expected to use a larger sample.

REFERENCES

- [1] Rivandi J, Yonata A. Hubungan Diabetes Melitus Dengan Kejadian Gagal Ginjal Kronik. 2015; 4:28.
- [2] Kurniawati A, Asikin A. Gambaran Tingkat Pengetahuan Penyakit Ginjal Dan Terapi Diet Ginjal Dan Kualitas Hidup Pasien Hemodialisis Di Rumkital Dr . Ramelan Surabaya. 2018:126.
- [3] Kementerian Kesehatan Republik Indonesia (Ministry of Health Republic Of Indonesia). Potret sehat dari Riskesdas 2018. 2018.
- [4] Costa, Arruda G M. Quality of life of patients with kidney disease undergoing hemodialysis. *Enfermería Glob.* 2016;15(43):88.
- [5] Fitri I, et al. Gambaran Klinis dan Kualitas Hidup Pasien Penyakit Ginjal Tahap Akhir yang Menjalani Hemodialisis Dua Kali Dibandingkan Tiga Kali Seminggu. 2017;4(3):128-136.
- [6] Wahyuni P, Miro S, Kurniawan E. Hubungan Lama Menjalani Hemodialisis dengan Kualitas Hidup Pasien Penyakit Ginjal Kronik dengan Diabetes Melitus di RSUP Dr. M Djamil Padang. 2018;7(4):481.
- [7] Tjekyan, R.M Suryadi. Prevalensi dan Faktor Risiko Penyakit Ginjal Kronik di RSUP Dr .

- Mohammad Hoesin Palembang Tahun 2012. 2014;(4):277.
- [8] Penyakit Ginjal Kronik. Suwitra, Ketut. In: Siti Setiati, Idrus Alwi, Aru W, Sudoyo D, editors. Buku Ajar Ilmu Penyakit Dalam. Edisi V. Jilid II. Jakarta: InternaPublishing; 2009.
- [9] InfoDATIN Pusat Data dan Informasi Kementerian Kesehatan RI. Situasi Penyakit Ginjal Kronis. 2017 © World Kidney Day 2006-2017.
- [10] Zasra R, Harun H, Azmi S. Indikasi dan Persiapan Hemodialis Pada Penyakit Ginjal Kronis Tinjauan Pustaka. *Jurnal Kesehatan Andalas*. 2018;7 Suppl 2:183.
- [11] Issued by: Indonesian Renal Registry. 10 thReport Of Indonesian Renal Registry 2017.2018.
- [12] NKF-KDIGO. KDIGO 2012 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease. 2013;3(1):116-118.
- [13] Agustin I, Haryanti P, Nisa K. Terapi Konservatif dan Terapi Pengganti Ginjal sebagai Penatalaksanaan pada Gagal Ginjal Kronik. 2015;4(7):49.
- [14] O'Callghan C. The Renal System at a Glance. 2nd ed. Jakarta: Penerbit Erlangga; 2009.
- [15] Kharisma Putri N, Evy Tyaswati J, Santosa. Hubungan antara Tingkat Depresi dengan Kualitas Hidup Pasien. *e-Jurnal Pustaka Kesehatan*. 2016;4(3):459.
- [16] National Kidney Foundation. KDOQI Clinical Practice Guideline for Hemodialysis Adequacy: 2015 Update. *Am J Kidney Disease*. 2015;66(5):884-930.
- [17] Moch. T. S. A. Rahman Theresia M. D. Kaunang Christofel Elim. Hubungan antara lama menjalani hemodialisis dengan kualitas hidup pasien yang menjalani hemodialisis di Unit Hemodialisis. 2016;4:39.
- [18] Adriani E, Yakti K. Beberapa faktor risiko yang berhubungan dengan hipertensi intradialisis pada pasien gagal ginjal kronik di rsud abdul wahab sjahranie samarinda. 2018;5(2):51.
- [19] Issued by: World Health Organization. Measuring Quality of Life. 1997.
- [20] Rand. Kidney Disease Quality Of Life Instrumen (KDQOL). California: Rand Health Care. Available from:https://www.rand.org/health-care/surveys_tools/kdqol.html.
- [21] Julie Y. Chen, Edmond P.H.Choi, Eric Y.F. Wan, et al. Validation of the Disease-Spesific Components of the Kidney Disease Quality of Life-36 (KDQOL-36) in Chinese Patients Undergoing Maintenance Dialysis. 2016.
- [22] Soelistyoningsih,D. Daramatasia,W. Kualitas hidup Pasien Penyakit Ginjal Kronik yang menjalani Hemodialisis dan CAPD di RSSA Malang.*Jurnal ilmiah kesehatan*.2019;8.
- [23] Mustikasari I, dan Noorratri ED. Faktor-Faktor yang Mempengaruhi Nilai Interdialytic Weight Gain Pasien Hemodialisa di RSUD Panembahan Senopati Bantul. *Jurnal Ilmu Kesehatan GASTER*. 2017. Vol. XV, No. 1.
- [24] Daryani. Faktor-Faktor yang Mempengaruhi Keputusan Inisiasi Dialisis Pasien Gagal Ginjal Tahap Akhir di RSUP Dr. Soeradji Tirtonegoro Klaten. Thesis. 2011
- [25] Goldberg I, dan Krause I. The Role of Gender in Chronic Kidney Disease. *European Medical Journal*, 2016. 1 (2) : 58-64.
- [26] Satyaningrum, M. Hubungan Dukungan Keluarga dengan Kepatuhan Diet pada Pasien Gagal Ginjal Kronis dengan Terapi Hemodialisa di RS PKU Muhammadiyah Yogyakarta. Skripsi tidak dipublikasikan. STIKES, Aisyiyah Yogyakarta. 2011
- [27] Kummer, S. The Influence of Gender and Sexual Hormones on Incidence and Outcome of Chronic Kidney Disease. *Pediatr Nephrol*. 2012. 27(8):1213-9.
- [28] PERNEFRI 2011. Konsensus Nutrisi Pada Penyakit Ginjal Kronik. Perhimpunan Nefrologi Indonesia. Jakarta
- [29] Nurhayati S. Analisis faktor-Faktor yang Berhubungan dengan Kualitas Hidup Pasien Penyakit Ginjal Kronik yang Menjalani Hemodialisis di Rumah Sakit Islam Fatimah Cilacap dan Rumah Sakit Umum Daerah Banyumas (tesis). Depok: Universitas Indonesia; 2011.
- [30] Smeltzer, dan Bare, Buku Ajar Keperawatan Medikal Bedah, alih bahasa: Waluyo Agung., Yasmin Asih., Juli, Kuncara., I.made karyasa, EGC, Jakarta; 2008.
- [31] Dewi SP. Hubungan Lamanya Hemodialisis dengan Kualitas Hidup Pasien Gagal Ginjal di RS PKU Muhammadiyah Yogyakarta. 2015
- [32] Azwar S. Sikap Manusia:Teori dan Pengukurannya. Pustaka Pelajar. Yogyakarta. 2005
- [33] Wahyuni P. Hubungan Lama Menjalani Hemodialisis dengan Kualitas Hidup Pasien Penyakit Ginjal Kronik dengan Diabetes Mellitus di RSUP Dr. M Djamil Padang. 2018
- [34] Supriyadi; Wagiyono; Widowati SR. Tingkat Kualitas Hidup Pasien Gagal Ginjal Kronik Terapi Hemodialisis. *Jurnal Kesehatan Masyarakat*. 2010
- [35] Sompie EM, Kaunang TMD, Munayang H. Hubungan antara lama menjalani hemodialisis dengan depresi pada pasien PGK di RSUP Prof. Dr. R. D. Kandou Manado. *Journal e-Clinic (eCl)*. 2015;3(1):1-5.

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- [36] Makkar V, Kumar M, Mahajan R, Khaira NS. Comparasion of Outcomes and Quality of Life between Hemodialysis and Peritoneal Dialysis Patients in India ESRD Population. *Journal of Clinical and Diagnostic Research*. Mar, 2015. Vol -9(3): OC28-OC31.
- [37] Van KN, Duangpaeng S, Deenan A, & Bonner A. Examining the health-related quality of life of people with end-stage kidney disease living in Hanoi, Vietnam. *Renal Society of Australasia Journal*, 2012. 8(3), 140-145.
- [38] Ghaderian SB, Beladi-Mosavi SS. The Role of Diabetes Mellitus and Hypertension in Chronic-Kidney Disease. *J Renal Inj Prev*. 2015. 3(4):109-110.
- [39] Purwati H. Hubungan antara Lama Menjalani Hemodialisis dengan Kualitas Hdiup Pasien Gagal GInjal Kronik di RS Gatoel Mojokerto. 2016
- [40] Nursalam. *Metode Penelitian Ilmu Kesehatan*. Jakarta : Salemba Medika. 2013.
- [41] Mailani F. Kualitas Hidup Pasien Penyakit Ginjal Kronik yang Menjalani Hemodialisis: Systematic Review. *Ners Jurnal Keperawatan*, 2015, 1-8.
- [42] Pakpour A, Saffari M, Yekaninejad S, Panahi D, Harrison A, Moisted S. Health-related quality of life in a sample of Iranian patients in hemodialysis. *Iranian Journal of Kidney Disease*. 2010;4(1).
- [43] Indonesian Renal Registry (IRR). 2018. 11th Report of Indonesian Renal Registry. Diakses di <https://www.indonesianrenalregistry.org/data/IRR%202018.pdf>.
- [44] Donald, A. What is quality of life?. 2009;1.No.9.Ed:2.
- [45] Dani Kartika,S. Hubungan Lama Menjalani Terapi Hemodialisi dengan Kualitas Hidup Pasien Penyakit Ginjal Kronik di Instalasi Hemodialisis RSUD Abdul Moeloek. Bandar Lampung. 2017.

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