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The Relationships between Family Support, Age, and Gender with Quality of Life in Chronic Kidney Failure Patients at Dr. Moewardi Surakarta Hospital

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ABSTRACT

Background: Chronic kidney failure (CKD) is a non-communicable disease in which kidney function begins to decline progressively in a matter of months or even years and can affect the patient's quality of life. The purpose of this study is to determine the effect of family support, gender and age on the quality of life of patients with chronic kidney failure at Dr. Moewardi Hospital Surakarta.
Subjects and Method: This study used a cross-sectional design conducted at Dr. Moewardi Surakarta Hospital in June 2024. The target population of the study was 920 patients with chronic kidney failure at Dr. Moewardi Hospital Surakarta. A total of 200 study subjects were selected using simple random sampling. The dependent variables are family support, age, and gender. The independent variable is quality of life. The study instruments used were questionnaires and checklists and the data was analyzed using multiple linear regression analysis and processed using Stata 13.
Results: There was a statistically significant relationship between family support and quality of life in patients with chronic kidney failure. Each increase in family support score by one unit will be followed by an improvement in the quality of life of chronic kidney failure patients by 0.31 units (b = 0.31; CI 95% = 0.42 to 0.57; p = 0.023). Statistically, there is a significant relationship between age and quality of life of patients with chronic kidney failure. Each one-year increase in age will be followed by an improvement in the quality of life of chronic kidney failure patients by 0.02 units (b = 0.02; CI 95% = 0.05 to 0.38; p = 0.012). There is a very small difference in quality of life between female and male chronic kidney failure patients. Female patients with chronic kidney failure were 0.01 years lower than men, but the difference was statistically very insignificant (b = -0.80; CI 95% = -0.51 to 0.50; p = 0.975).
Conclusion: There was a positive relationship between family support and age and quality of life in patients with chronic kidney failure and there was no significant difference by gender between women and men.

Keywords: Chronic kidney failure, quality of life, family support, multiple linear regression analysis

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BACKGROUND

Chronic Kidney Failure (CKD) is a non-communicable disease that is a global health problem with increasing frequency and prevalence of kidney failure, poor prognosis, and high cost. In 2016, of the total patients with kidney failure, only 25% of patients received treatment. Of this percentage, only 12.5% are well-treated (Nasution et al., 2020). WHO (2019) estimates that globally more than 500 million people suffer from chronic kidney disease. About 1.5 million people have to live a life dependent on dialysis (Firman et al., 2016). The results of a systematic review and meta-analysis conducted by Hill et al. (2016), show that the global prevalence of chronic kidney disease is 13.4% every year.

The Indonesian Nephrology Society (Pernefri) has a group in the collection of dialysis data throughout Indonesia. Indonesia Renal Registry (IRR) is a group of programs related to edidemiology data collection. One of the big problems with HD failure is the issue of patient compliance. Compliance is very necessary in undergoing hemodialysis to achieve success in the treatment of chronic kidney failure (Andriani et al., 2021).

According to Indonesian Renal Registry (IRR) data, in 2019 there was an increase in new patients as well as active patients. Active patients are the total number of patients (both new and old patients) who are still undergoing hemodialysis regularly. There are 66,433 new patients and 132,142 active patients. In Central Java in 2018, there was also a significant increase in chronic kidney failure patients, namely 7,906 new patients with chronic kidney failure (Wati and Kurniawati, 2021).

Chronic kidney failure (CKD) is a non-communicable disease that is still a global health problem with increasing frequency and prevalence, poor prognosis, and high cost. Hemodialysis is a series of kidney substitution treatments and is a process of cleansing the blood by the accumulation of waste waste. Patients undergoing hemodialysis will feel pain and discomfort during the hemodialysis process (Nasution et al., 2020)

The compliance of chronic kidney failure patients in undergoing therapy and treatment can be influenced by several factors, namely family support, age, and gender. Dependence caused by hemodialysis patients occurs when the effects are physiological, emotional, and psychological. Therapy severely limits the patient's activities so that they lose their independence. Family support means being kind and helping sick families (Andriani et al., 2021). Based on the problems in patients undergoing hemodialysis therapy above, this study was conducted to determine the influence of family support, gender, and age on the quality of life of patients with chronic kidney failure at Dr. Moewardi Surakarta Hospital.

SUBJECTS AND METHOD

1. Study Design

The type of study used is observational analysis with a cross sectional design, namely by observing the population and samples at the same time conducted at the dr Moewardi Surakarta Hospital in June 2024.

2. Population and Sample

The population in this study is patients with chronic kidney failure who undergo hemodialysis therapy at Dr. Moewardi Hospital Surakarta. The target population of the study was 920 patients with chronic kidney failure and as many as 200 study subjects were selected using simple random sampling to study the relationship between family support, age, and gender and the quality of life of patients with chronic kidney failure at Dr. Moewardi Hospital Surakarta.

3. Study Variables

The dependent variable is quality of life. The independent variables were family support, age, and gender.

4. Operational Definition of Variables

The operational definition in this study is:

Quality of Life: defined as the perception of people with chronic kidney failure about how they are doing.

Family Support: defined as the support provided by the family to patients with chronic kidney failure in carrying out therapy and living daily life.

Age: defined as the period of time that a person or something has passed since it was born, created, or started until a certain time.

Gender: is defined as a concept that refers to roles, behaviors, activities, and attributes that are considered appropriate by society. The study subjects in this study are male and female.

5. Study Instruments

The study instrument used for data collection is using a questionnaire.

6. Data Analysis

The data was analyzed by multivariate analysis. Univariate analysis was carried out to determine the frequency distribution and percentage of each variable studied, namely family, age, and gender support for the lives of chronic kidney failure patients. The next analysis is bivariate which is carried out on each independent variable, namely family background, age, and gender. And multivariate analysis uses multiple linear regression analysis and is processed using Stata 13.

7. Research Ethics

Study ethics include informed consent, anonymity, and confidence. Handled with care during the study process. The researcher has received a letter of ethical feasibility from the Health Study Ethics Commission of Dr. Moewardi Hospital, Surakarta City on April 4, 2024, with the number 921/IV/HREC/2024

RESULTS

This study was carried out from June to July 2024 on 200 patients with chronic kidney failure who underwent hemodialysis therapy at Dr. Moewardi Hospital Surakarta.

1. Univariate Analysis

Table 1 shows that as many as 80 study subjects (40%) are female and 120 study subjects (60%) are male. Patients aged <20 years were 6 study subjects (3%) and 194 study subjects (97%) were ≥20 years old. Patients with elementary education were 31 study subjects (15.5%), junior high school education as many as 21 study subjects (10.5%), high school education as many as 126 study subjects (63%), and as many as 22 study subjects (11%) with university education. For the type of work of patients who do not work, there are 35 study subjects (17.5%), as housewives as many as 21 study subjects (10.5%), farmers or traders as many as 30 study subjects (15%), civil servants/ employees as many as 59 study subjects (29.5%), self-employed as many as 54 study subjects (27%), and as retirees as many as 1 study subject (0.5%).

Table 1. Univariate analysis of chronic kidney failure patients at Dr. Moewardi Surakarta Hospita

Variables	Category	Frequency (n)	Percentage (%)
Support Family	Strong	196	98
	Weak	4	2
Gender	Woman	80	40
	Man	120	60
Age	<20 years	6	3
	≥20 years	194	97

Variables	Category	Frequency (n)	Percentage (%)
Level of education	Elemtary School	31	15.5
	Junior High School	21	10.5
	Senior High School	126	63.0
	College	22	11.0
Type of work	Doesn't work	35	17.5
	Housewife	21	10.5
	Farmer / Trader	30	15.0
	ASN/ Employee	59	29.5
	Self-employed	54	27.0
	Retired	1	0.5

2. Bivariate Analysis

Table 2 shows that there is a positive relationship between family support and quality of life in patients with chronic kidney failure and that the relationship is statistically significant. Each increase in family support score by one unit will be followed by an improvement in the quality of life of chronic kidney failure patients by 0.31 units (OR = 0.31; CI 95% = 0.42 to 0.57; p = 0.023). With a confidence level of 95%, every increase in one family support unit will be followed by an improvement in the quality of life of chronic kidney failure patients from 0.42 to 0.57.

Based on the age variable, it was shown that there was a positive relationship between age and quality of life of patients with chronic kidney failure and the relationship was statistically significant. Each one-year increase in age will be followed by an improvement in the quality of life of chronic kidney failure patients by 0.02 units (OR = 0.02; CI 95% = 0.05 to 0.38; p = 0.012). With a confidence level of 95%, every increase in age will be followed by an improvement in the quality of life of chronic kidney failure patients from 0.05 to 038.

Based on gender variables, it was shown that there was a very small difference in quality of life between female and male chronic kidney failure patients. Female patients with chronic kidney failure were 0.01 years lower than men, but the difference was statistically very insignificant (OR= -0.80; CI 95% = -0.51 to 0.50; p = 0.975).

Table 2. Results of bivariate analysis of family, age, and gender support on the quality of life of patients with chronic kidney failure

Study Variables	OR	CI 95%		p
		Lower limit	Upper limit	
Family Support	0.31	0.42	0.57	0.023
Age	0.02	0.05	0.38	0.012
Gender	-0.80	-0.51	0.50	0.975

3. Multivariate Analysis

Table 3 shows a double linear regression analysis of the relationship between the quality of life of chronic kidney failure patients and age, gender, and family support at Dr. Moewardi Hospital Surakarta. In the double linear regression analysis, only independent variables that show statistical significance are included, with the results of the analysis as follows:

a. Family Support

Table 3 shows that there is a positive relationship between family support and quality of life of patients with chronic kidney failure,

and the relationship is statistically significant. Patients with chronic kidney failure with good family support had an improvement in quality of life of 0.31 units compared to patients with chronic kidney failure with poor family support (b= 0.31; CI 95% = 0.42 to 0.57; p = 0.023).

b. Age

Table 3 shows the results of a positive relationship between age and quality of life of patients with chronic kidney failure. Each one-year increase in age will be followed by an increase in the quality of life of chronic kidney failure patients by 0.02 units (b= 0.02; CI 95% = 0.05 to 0.38; p = 0.012).

c. Gender

Table 3 shows that there is a very small difference in quality of life between chronic kidney failure patients and female and male genders. Patients with chronic kidney failure with the female gender had a 0.01-year lower quality of life compared to patients with chronic kidney failure with the male gender, but the difference was statistically very insignificant (b = -0.80; CI 95% = -0.51 to 0.50; p = 0.975).

Table 3 also shows a double linear regression analysis of the relationship between the quality of life of chronic kidney failure patients and age, gender, and family support at Dr. Moewardi Surakarta Hospital which includes all independent variables both those that show the statistical significance and those that do not. After including all the independent variables in the multiple linear regression analysis, the independent variable that showed a statistically significant relationship, were family support (b = 0.31; CI 95% = 0.42 to 0.57; p = 0.023), age (b = 0.02; CI 95% = 0.05 to 0.38; p = 0.012).

In this study, the gender variable did not show a statistically significant relationnship with the quality of life of patients with chronic kidney failure (b = -0.80; CI 95% = -0.51 to 0.50; p = 0.975).

DISCUSSION

a. Effect of family support relationship on quality of life of chronic kidney failure patients

Based on the analysis in Table 3, there is a positive relationship between family support and the quality of life of patients with chronic kidney failure, and the relationship is statistically significant. Patients with chronic kidney failure with good family support had a 0.31-fold improvement in quality of life compared to patients with chronic kidney failure with poor family support (b = 0.31; CI 95% = 0.42 to 0.57; p = 0.023).

This study is in line with a study conducted by Rustandi et al. (2018) which stated that some of the respondents who had a good level of family support had a higher quality of life. In addition, the patient's adaptive coping to his disease, the patient who is more receptive about his health condition is caused by good family support (Wiliyanarti et al., 2019). Quality of life is one broad, multidimensional concept that generally combines emotional judgments of positive and negative parts of life. The quality of life of CKD hemodialysis treatment program is still the center of attention of health experts (Zurmeli and Utami, 2015) Family support is the attitude of action and acceptance of family members who are supportive and provide help if needed. Family support consists of emotional support, instrumental support, informational support, and award support. The dependence of patients with chronic kidney failure is very high, so this severely limits the patient's activities and causes a loss of independence caused by many psychosocial problems such as anxiety about the disease and depression. Family support means a lot to help sick family members. This includes giving advice and assisting them in their health care. According to researchers, family

support owned by chronic kidney failure patients greatly affects the quality of life, especially in living daily life and carrying out hemodialysis therapy in the long term (Zainal et al., 2024).

b. The effect of age on the quality of life of patients with chronic kidney failure

There was a positive relationship between age and quality of life of chronic kidney failure patients. Each one-year increase in age will be followed by an increase in the quality of life of chronic kidney failure patients by 0.02 units (b = 0.02; CI 95% = 0.05 to 0.38; p = 0.012). The majority of study subjects were over 20 years old as many as 194 people (97%), while study subjects were less than 20 years old as many as 6 people (3%).

This is in line with a study conducted by Aditama et al. (2023) that a person's level of maturity and strength will increase along with his or her level of maturity in thinking and working. People are more likely to trust someone who is more mature than someone who is not mature enough. This will result from mental maturity and experience so that the older the age will affect the quality of life of chronic kidney failure patients.

According to another study, age is the most important predictor of declining quality of life and health status. The aging process and the development of diseases cause physical difficulties as well as reduced autonomy and independence from family and caregivers (Pratiwi et al., 2019) and age is one of the factors that affect quality of life, Age is related to aspects of life that are important to individuals. Individuals with adult age express higher well-being than middle age and in the old age factor has a contribution to quality of life (Aryanata et al., 2019).

c. Gender influence on quality of life of patients with chronic kidney failure

Based on the analysis in Table 3, there is a very small difference in quality of life between female and male chronic kidney failure patients. Female patients with chronic kidney failure were lower by 0.01 years compared to men, but the difference was statistically very insignificant b = -0.80; CI 95% = -0.51 to 0.50; p = 0.975).

This is in line with a previous study conducted by Rahmah et al. (2021) at Arifin Achmad Hospital Pekanbaru which showed that there was no relationship between sex and quality of life of GGK patients undergoing hemodialysis therapy. This study is also supported by a study conducted by Fadlilah (2019) which states that there is no relationship between quality of life and gender.

This study is in line with a study conducted by Rustandi et al. (2018), The results of the study showed that there was no relationship between gender and quality of life, the researcher assumed that men and women have the will used by the individual himself which is the main factor in determining problem solving, overcoming changes that occur, and situations that threaten him.

AUTHOR CONTRIBUTION

All authors have made meaningful and significant contributions to data analysis and the preparation of the final manuscript

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CONFLICT OF INTEREST

There was no conflict of interest in this study

REFERENCE

Andriani A, Tamtomo DG, Murti B. (2021). Path analysis on factors affecting the use of hemodialysis in patients with chronic renal disease at Dr. Soehadi Prijonegoro Hospital Sragen, Central Java. Health Policy Manage. 6(1).

Aryanata IGNGD, Sudarsa IW, Adiputra PAT. (2019). Factors affecting the quality of life of patients with well-differentiated thyroid cancer (DTC) after total thyroidectomy at Sanglah Central General Hospital (RSUP) (Faktor-faktor yang mempengaruhi kualitas hidup pasien kanker tiroid berdiferensiasi baik (DTC) paska tiroidektomi total di Rumah Sakit Umum Pusat (RSUP) Sanglah), Denpasar. Intisari Sains Medis. 10(1).

Firman R, Mugianti S, Sunarno I, Winarni S. (2016). Quality of life of patients with renal failure undergoing hemodialysis (Kualitas hidup pasien gagal ginjal yang menjalani hemodialisis). J Ners Kebidanan. 3(2): 118–122. doi: 10.266-99/jnk.v3i2.art.p118-122.

Nasution SH, Syarif S, Musyabiq S. (2020). Stage 5 chronic kidney failure disease based on age, gender, and diagnosis determinants. JK Unila. 4(2):157–60.

Pratiwi DT, Tamtomo DG, Suryono A. (2019). Determinants of the quality of life for hemodialysis patients. Indones J Med. 4(2): 145-154.

Rahmah S, Maryumis, Ernasari. (2021). Factors related to the quality of life of chronic kidney disease patients undergoing hemodialysis (Faktor-Faktor yang berhubungan dengan kualitas hidup pasien penyakit ginjal kronis yang menjalani hemodialisis). J. Farm. Ilmu Kefarmasian Indones. 8(1): 294–306. doi: 10.20473/jfiki.v8i12021.83-90.

Rustandi H, Tranado H, Pransasti T. (2018). Factors affecting the quality of life of chronic kidney disease (CKD) patients undergoing hemodialysis (Faktor-faktor yang mempengaruhi kualitas hidup pasien chronic kidney disease (CKD) yang menjalani hemodialisa). JKS. 1(2): 32–46. doi: 10.31539/jks.v-1i2.8.

Aditama N, Kusumajaya H, Fitri N (2023). Faktor-faktor yang berhubungan dengan kualitas hidup pasien gagal ginjal kronis. J Penelitian Perawat Profesional. 6(1): 109-120. doi: 10.37287/-jppp.v6i1.1919.

Wati US, Kurniawati T. (2021). Overview of Knowledge and Behavior about Snacks. Proceedings of the 2021 National Health Seminar for Research and Community Service Institutions. 302-308.

Wiliyanarti PF, Muhith A. (2019). Life experience of chronic kidney diseases undergoing hemodialysis therapy. NurseLine J. 4(1): 54-60.

Zainal DT, Tamtomo DG, Murti B. (2024). Correlation between the characteristics of chronic kidney disease patients undergoing hemodialysis and erythropoietin stimulating agent therapy and hemoglobin levels. Indones J Med. 9(2): 145-155.

Zurmeli B, Utami GT. (2015). The relationship between family support and the quality of life of chronic kidney failure patients undergoing hemodialysis therapy at Arifin Achmad Pekanbaru Hospital. J Online Mahasiswa. 2(1): 670-681.