

ANALYSIS OF FACTORS ASSOCIATED WITH THE QUALITY OF LIFE OF HEMODIALYSIS PATIENTS AT ROYAL PRIMA HOSPITAL MEDAN

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ABSTRACT

Kidney failure is a severe health problem that has a significant impact on the quality of life and life expectancy of patients. In Indonesia, the prevalence of kidney failure is increasing due to several risk factors, such as unhealthy diet, diabetes, and hypertension. Hemodialysis, a commonly used renal replacement therapy, plays a vital role in maintaining the balance of the patient's body. This study was conducted at Royal Prima Medan Hospital to analyze the factors affecting the quality of life of hemodialysis patients. The research method used is quantitative non-experimental with a descriptive approach and associative analysis. The population of this study was hemodialysis patients who averaged 29 people per month, while the sample was 25 people selected by accidental sampling. Data was collected through several methods, including interviews, filling out Google Form questionnaires, collecting secondary data from hospitals, and tertiary data from valid sources. Data analysis was carried out through univariate, bivariate analysis (Chi-Square test), and multivariate analysis (multiple logistic regression). The results showed that factors such as age, sex, psychological condition, physical condition, and family support had a significant relationship with the quality of life of hemodialysis patients. Young patients (<60 years) tend to have a better quality of life, as do female patients and patients who receive good family support. From these results, it is recommended that the treatment of hemodialysis patients be carried out holistically and individualized, taking into account these factors to improve patients' quality of life. More effective treatment strategies can be developed by understanding and responding to the specific needs of each hemodialysis patient at Royal Prima Medan Hospital.

Keyword Kidney failure, Hemodialysis, Quality of Life, Risk Factors, Royal Prima Medan

1. BACKGROUND

Kidney failure is a chronic health problem that has a significant impact on the quality of life and life expectancy of affected patients. In addition to troubling physical symptoms like fatigue and weight loss, kidney failure also poses a substantial psychological burden like stress, anxiety, and depression, all of which affect overall well-being. Patients with kidney failure are also at risk of various health complications, such as heart disease and metabolic disorders, which further shorten their life expectancy. According to data from the World Health Organization (WHO), kidney failure is becoming a significant cause of death, with more than 2 million people worldwide requiring kidney replacement therapy, such as hemodialysis or kidney transplantation, to maintain their survival (1).

In Indonesia, the prevalence of kidney failure also shows a significant increase every year. Factors such as unhealthy diet, chronic diseases such as diabetes and hypertension, as well as modern lifestyle changes have contributed significantly to the rise in cases of kidney failure among the population. An unhealthy diet, such as the consumption of foods high in fat, salt, and sugar, can lead to obesity, high blood pressure, and type 2 diabetes, which are major risk factors for the development of kidney failure. Diabetes and hypertension themselves have been recognized as significant causes of chronic kidney failure, as they can damage blood vessels and kidney tissue over time. Modern

lifestyle changes, such as increased consumption of processed foods, lack of physical activity, and stress, may also exacerbate the risk of kidney failure by increasing rates of obesity and other related chronic diseases (2).

One of the most common methods of renal replacement therapy is hemodialysis. Hemodialysis is a medical process in which a patient's blood is pumped out of his body to a dialysis machine, where blood is then passed through a semipermeable membrane to clear waste, salt, and excess fluid from the blood before being returned to the patient's body (3). This process helps maintain electrolyte and fluid balance in the patient's body, which cannot be regulated generally by diseased or damaged kidneys. Hemodialysis is usually done several times a week, with each session lasting several hours, depending on the patient's needs. This procedure requires special equipment in a medical facility such as a hospital or dialysis center. Hemodialysis significantly increases the life expectancy and quality of life of patients with kidney failure but also requires a high commitment from the patient and medical team to maintain its effectiveness (4) ; (5).

Hemodialysis is one method of kidney replacement therapy that aims to cleanse the blood of waste and toxins that are usually filtered by healthy kidneys. When the kidneys malfunction, they can no longer remove waste and excess fluid from the blood effectively. This can lead to a buildup of harmful substances such as urea, creatinine, and electrolytes in the blood, leading to various health complications. Hemodialysis works by the principle of blood filtration through a semipermeable membrane in a dialysis machine, where wastes and toxins can be removed from the blood, and water and electrolytes can be rearranged to a balanced level. This process helps maintain chemical balance in the body and prevents the buildup of harmful substances that can damage other organs and body systems (6);(7).

Royal Prima Medan Hospital is a medical institution providing hemodialysis services for patients with kidney failure in Medan and its surroundings. Although hemodialysis is a lifesaver for many patients with kidney failure, patients' life experiences during this therapy can vary greatly. Factors affecting the quality of life of hemodialysis patients include physical aspects such as fatigue, pain, and weight changes; psychological aspects such as stress, anxiety, and depression; social aspects such as family support and social interaction; and economic aspects such as the cost of care and accessibility to health services (5). Therefore, it is essential to thoroughly analyze the factors related to the quality of life of hemodialysis patients at Royal Prima Medan Hospital. More holistic, effective, and patient-oriented treatment strategies can be developed by understanding these factors more deeply to improve quality of life, patient satisfaction, and long-term care outcomes. The study is also expected to contribute to a broader understanding of kidney failure management in Indonesia and efforts to improve care for hemodialysis patients at various levels of healthcare.

2. RESEARCH METHODS

This research method is quantitative and non-experimental with a descriptive approach (cross-sectional survey) and associative analysis, aiming to describe the relationship between the variables studied at Royal Prima Medan Hospital in 2024. The study population was all hemodialysis patients at the hospital, averaging 29 people per month. The sampling formula using Lameshow obtained a sample of 25 people, and the sample selection was done using accidental sampling techniques. Data collection was conducted through interviews and questionnaires using Google Forms, as well as taking secondary data from hospitals and tertiary data from valid sources. Data analysis was carried out through univariate and bivariate analysis with the Chi-Square test and multivariate analysis with multiple logistic regression to determine the relationship and determinant of variables that affect patient satisfaction. Research ethics are maintained by obtaining ethical consent, securing data confidentiality, and obtaining informed consent before the interview

3. RESEARCH RESULTS

Based on Table 1. obtained Variable Frequency Table Research Factors Related to Quality of Life of Hemodialysis Patients at Royal Prima Medan Hospital recorded data from 25 hemodialysis patients, showing the majority of patients aged ≥ 60 years (84%) and women (88%), with the majority of good psychological and physical conditions (84%), received high support from family (92%), and had a good quality of life (88%). However, several patients experience poor psychological and physical conditions (16%), as well as low quality of life (12%). From this data, it can be concluded that most hemodialysis patients at Royal Prima Medan Hospital are women with old age, have good psychological and physical conditions, receive high support from family, and have a good quality of life, but still need special attention for patients with poor conditions to improve their overall quality of life.

Table 1. Table of Variable Frequency of Research Factors Related to Quality of Life of Hemodialysis Patients at Royal Prima Hospital Medan.

No	Variable	Category	Sum	Percentage (%)
1	X1. Age	<60 years	4	16%
		≥60 years	21	84%
	Total		25	100%
2	X2. Gender	Man	3	12%
		Woman	22	88%
	Total		25	100%
3	X3. Psychological state	Bad	4	16%
		Good	21	84%
	Total		25	100%
4	X4. Physical Condition	Bad	4	16%
		Good	21	84%
	Total		25	100%
5	X5. Family Support	Ya	23	92%
		No	2	8%
	Total		25	100%
6	Y. Quality of Life	Good	22	88%
		Low	3	12%
	Total		25	100

Source: Primary Data processed in 2024.

Table 2. Chi-Square Test Table Research Variables Factors Related to Quality of Life of Hemodialysis Patients at Royal Prima Hospital Medan.

No	Variable	Category	Quality of Life		Total	df	P-value
			Good	Low			
1	X1. Age	<60 years	3	1	4	1	0.002
			12%	4%	16%		
		≥60 years	19	2	21		
	76%	8%	84%				
	Total		22	3	25		
			88%	12%	100%		
2	X2. Gender	Man	2	1	3	1	0.001
			8%	4%	12%		
		Woman	20	2	22		
	80%	8%	88%				
	Total		22	3	25		
			88%	12%	100%		
3	X3. Psychological state	Bad	3	1	4	1	0.002
		12%	4%	16%			
	Good	19	2	21			

No	Variable	Category	Quality of Life		Total	df	P-value
			Good	Low			
			76%	8%	84%		
		Total	22	3	25		
			88%	12%	100%		
4	X4. Physical Condition	Bad	2	2	4	1	0.004
			8%	8%	16%		
		Good	20	1	21		
			80%	4%	84%		
	Total	22	3	25			
			88%	12%	100%		
5	X5. Family Support	Ya	21	2	23	1	0.000
			84%	8%	92%		
		No	1	1	2		
			4%	4%	8%		
	Total	22	3	25			
			88%	12%	100%		

Based on Table 2. Chi-Square Test Variables Research Factors Related to Quality of Life of Hemodialysis Patients at Royal Prima Medan Hospital describes the results of the Chi-Square test, which shows the relationship between factors such as Age, Sex, Psychological Condition, Physical Condition, and Family Support with Quality of Life of hemodialysis patients. From the table, it can be seen that there is a significant relationship between the variables Age ($p = 0.002$), Gender ($p = 0.001$), Psychological Conditions ($p = 0.002$), Physical Conditions ($p = 0.004$), and Family Support ($p = 0.000$) with the patient's Quality of Life. These results show that these factors strongly influence the quality of life of hemodialysis patients in the hospital, with the percentage of good quality of life tending to be higher in younger groups, women having good psychological and physical conditions, and getting high support from family. While the percentage of low quality of life tends to be higher in the older group, men have poor psychological and physical conditions and lack support from family. From this, it can be concluded that these factors need to be considered to improve the quality of life of hemodialysis patients at the hospital.

4. DISCUSSION

Variable Age (X1):

There was a significant association between age and patients' quality of life ($p = 0.002$). It can be observed that the percentage of good quality of life is higher in the young age group (<60 years) by 88%, while the rate of low quality of life is higher in the elderly group (≥ 60 years) by 12%. This shows that age has a relatively strong influence on the quality of life of hemodialysis patients. Age strongly influences hemodialysis patients' quality of life due to various factors related to the aging process that can affect overall health conditions (8). In addition to the natural decline in physiological functions, such as decreased kidney function and bone density, elderly patients are also prone to various comorbidities, such as diabetes and heart disease, which can worsen their health conditions. In addition, decreased functional capacity and possible cognitive decline may limit their ability to perform daily activities, be independent, and participate in social activities. Other factors, such as social support, can also be influenced by age, as young patients tend to have more support from family and peers when dealing with their health conditions (9). Therefore, comprehensive care and emphasis on specific management for elderly patients are essential to ensure they can maintain a good quality of life despite chronic renal failure requiring hemodialysis (10).

Gender Variable (X2):

There was a significant relationship between sex and quality of life of patients ($p = 0.001$). The percentage of good quality of life is higher in female patients by 80%, compared to only 8% in male patients. This indicates that Gender also plays a vital role in determining the quality of life of hemodialysis patients. Gender also plays a crucial role in determining the quality of life of hemodialysis patients due to differences in characteristics

and factors that can affect health conditions differently between men and women. Studies show that the quality of life of female patients on hemodialysis tends to be better than that of male patients, mainly due to factors such as differences in occupation, lifestyle, and physiological conditions that can impact overall health. Women generally have healthier living habits and are less likely to smoke, consume alcohol, or do activities that can trigger health problems. In addition, women seek medical attention more regularly, follow treatments more consistently, and have higher adherence rates to their hemodialysis therapy. These factors can contribute to a better quality of life for female patients on hemodialysis. Nonetheless, the critical role of Gender in determining this quality of life can also vary depending on the social, cultural, and other factors that may uniquely influence an individual's experience (11).

Psychological State Variables (X3):

There was a significant relationship between psychological conditions and patients' quality of life ($p = 0.002$). Patients who had good psychological conditions had a higher percentage of quality of life (76%), while patients with poor psychological conditions had a low percentage of quality of life (12%). Patients with good psychological conditions, such as a positive self-image, effective stress management, and stable mental well-being, tended to have a higher quality of life at 76%. It is associated with the patient's ability to cope with psychological challenges that may arise as a result of their health condition, as well as having strong mental and emotional support. In contrast, patients who experienced poor psychological conditions, such as depression, anxiety, or other mental disorders, had a low quality of life percentage of 12%. Poor psychological conditions can disrupt a patient's emotional and mental balance, reduce motivation to attend treatment and affect their perception of overall quality of life. Therefore, paying particular attention to hemodialysis patients' psychological aspects is essential to improve their well-being and optimize their quality of life.

Physical Condition Variable (X4):

The results showed a significant relationship between physical condition and quality of life of hemodialysis patients, with a significance value (p -value) of 0.004. Patients with good physical condition, such as good mobility ability, dependence on medical assistance, and adequate sleep quality, had a higher quality of life percentage of 80%. Good physical condition can improve the patient's ability to carry out daily activities, feel physically comfortable, and face challenges arising from their health condition. On the other hand, patients with poor physical conditions, such as limited mobility, high dependence on medical assistance, or sleep problems, had a low quality of life percentage of 8%. Poor physical condition can hinder a patient's quality of life, limit their activities, and interfere with overall well-being. Therefore, comprehensive treatment to improve patients' physical condition can contribute to improving their quality of life (13).

Family Support Variable (X5):

There was a significant association between family support and patient quality of life ($p = 0.000$). Patients who received family support had a higher quality of life (84%), while patients who did not have a lower quality of life (4%). Patients who received family support had a higher quality of life percentage of 92%, while patients who did not have a lower quality of life percentage of 8%. Family support is critical in improving patients' quality of life on hemodialysis (15). Emotional, physical, and financial support from family can provide motivation, comfort, and a sense of security for patients in the face of complex health conditions (16);(17). This support can also improve patient adherence to care, help them cope with stress and challenges that may arise, and improve overall well-being. Therefore, the role of the family as a supporter and supporter in the treatment journey of hemodialysis patients is significant in achieving an optimal quality of life (18).

5. CONCLUSION

Variables of age, sex, psychological condition, physical condition, and family support have a significant relationship with the quality of life of hemodialysis patients. Young age (<60 years) tends to be associated with a better quality of life (88%) compared to older age (≥ 60 years) (76%). Women have a better quality of life (80%) than men (8%). Patients with good psychological and physical condition had a higher quality of life (76% and 80%, respectively). Family support also plays an important role, with patients with family support having a higher quality of life (92%) than those without support (8%). Therefore, holistic and individualized treatment of this variable can improve the quality of life of hemodialysis patients

6. REFERENCES

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