

The Effect of Knowledge Level About Chronic Kidney Disease on Psychological Well-Being of Chronic Kidney Disease Patients

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Abstract.

Background: Chronic kidney disease has emerged as a leading cause of death and suffering in the 21st century. Hemodialysis is the most common renal replacement therapy for patients with chronic kidney disease. Hemodialysis patients experience physical and psychological distress. The psychological effects include increased fatigue, anxiety, decreased quality of life, and increased risk of suicide are some of the factors contributing to this. Self-acceptance in patients can lead to the development of a new purpose in life, known as psychological well-being. One of the major problems contributing to hemodialysis failure is patient refusal, which is linked to low knowledge. This study aims to analyze the influence of knowledge levels about chronic kidney disease on psychological well-being in patients with chronic kidney disease. **Method:** This quantitative, observational, and analytical research method utilized a cross-sectional design. A population of 103 patients with chronic kidney disease undergoing hemodialysis in October 2023 served as the study subjects. The sampling technique used was total sampling. The Spearman rank test was also used by the researchers. The research instruments used were a questionnaire on the level of knowledge regarding chronic kidney disease and a questionnaire on the psychological well-being scale theory from Ryf. **Results:** A total of 89 respondents met the inclusion criteria. The Spearman rank test yielded a p-value of 0.000 and a correlation strength of +0.737, indicating a strong positive effect of knowledge on the psychological well-being of chronic kidney disease sufferers. **Conclusion:** The better the level of knowledge regarding chronic kidney disease, the greater the impact on improving the psychological well-being of chronic kidney disease sufferers.

Keywords : Chronic kidney disease; psychological well being and level of knowledge.

I. INTRODUCTION

Chronic kidney disease has emerged as a leading cause of death and suffering in the 21st century.¹The 12th leading cause of death in the world is chronic kidney disease, which is a degenerative disease.²The results of the 2018 Basic Health Research (Riskesdas), of the total population of Indonesia, showed that chronic kidney disease in Indonesia has a prevalence of 0.38%.³In Central Java, the prevalence of chronic kidney disease diagnosed by doctors was 0.42%.⁴A survey conducted in the period January-August 2019 at RSI Sultan Agung Semarang found that chronic kidney disease had the highest prevalence.⁵ Chronic kidney disease has emerged as a leading cause of death and suffering in the 21st century.¹The 12th leading cause of death in the world is chronic kidney disease, which is a degenerative disease.²The results of the 2018 Basic Health Research (Riskesdas), of the total population of Indonesia, showed that chronic kidney disease in Indonesia has a prevalence of 0.38%.³In Central Java, the prevalence of chronic kidney disease diagnosed by doctors was 0.42%.⁴A survey conducted in the period January-August 2019 at RSI Sultan Agung Semarang found that chronic kidney disease had the highest prevalence.⁵ Among the major problems contributing to hemodialysis failure is family and patient rejection. This is known to be influenced by a lack of knowledge.⁶

Patients with broader knowledge can control themselves when dealing with problems that occur, are experienced, have high self-confidence, and have appropriate predictions to handle incidents and are able to understand the advice of health workers, so that the anxiety that occurs can be minimized, thus helping this individual when making a decision.⁷ In previous research conducted at H. Adam Malik Medan Regional Hospital, the results showed that the majority of kidney disease patients had insufficient knowledge about

compliance with hemodialysis.⁸Research conducted by Febriani Hinur et al. showed that the majority of patients' knowledge about hemodialysis therapy at Toto Kabila Regional Hospital was sufficient.⁶Another study by Pande Made Desy Ratnasari, et al. showed a positive relationship between the level of knowledge and quality of life.⁹

II. METHODS

The scope of this research involves certain aspects which include time, place, and scope of science. This research was conducted in October 2023 in Roemani Hospital after the issuance of ethics from the Health Research Ethics Commission (KEPK) of Roemani Hospital Semarang with No. EA-015/KEPK-RSR/XII/2023 with a focus on discipline family medicine. This type of research uses analytical observational research with a cross-sectional design. The target population used was 103 chronic kidney disease patients at Roemani Hospital, Semarang, selected using the total sampling method. Inclusion criteria included chronic kidney disease patients at Roemani Hospital, Semarang, in 2023, actively undergoing hemodialysis, and willing to participate as research respondents. Exclusion criteria included chronic kidney disease patients who completed the questionnaire incompletely and were uncooperative. The variables in this study were the level of knowledge about chronic kidney disease as the independent variable, and the psychological well-being of chronic kidney disease patients as the dependent variable. The sample size was determined at 89 research subjects. The tools and materials used in this study include an informed consent sheet, a demographic data questionnaire, a knowledge level questionnaire adapted by R. Kartini in 2022 and a Psychological Well Being questionnaire adapted by A. Dinova in 2016.

III. RESULT AND DISCUSSION

1. Univariate Analysis

Table 1.1. Univariate Analysis

Characteristics	Frequency	%
Age		
26-35	6	6.7
36-45	14	15.7
46-55	31	34.8
56-65	29	32.6
>65	9	10.1
Gender		
Man	49	55.1
Woman	40	44.9
Length of hemodialysis		
<1 year	24	27.0
1-5 years	47	52.8
>5 years	18	20.2
Marital status		
Not married yet	4	4.5
Marry	83	93.3
Widow/widower	2	2.2
Level of education		
No school	3	3.4
Elementary School	12	13.5
JUNIOR HIGH SCHOOL	13	14.6
High School/Vocational School	39	43.8
College	22	24.7
Work		
Doesn't work	21	23.6
housewife	24	27
Government employees	5	5.6
Farmer	2	2.2
Self-employed	22	24.7
Etc	15	16.9
Level of Knowledge about Chronic Kidney Disease		

Not enough	5	5.6
Enough	40	44.9
Good	44	49.4
<i>Psychological Well-Being</i>		
Low	5	5.6
Currently	51	57.3
Tall	33	37.1

Based on table 1.1, the results of the characteristics of respondents at Roemani Hospital are obtained based on the age range of the majority of respondents aged between 46-55 years with a frequency of 34.8% of the total respondents, the majority are male as many as 49 respondents (55.1%), the majority undergo hemodialysis with a time span of approximately 1-5 years with a frequency of 47 people (52.8%), with the marital status of the majority of respondents being married as many as 83 respondents (93.3%) and most respondents have a final education level of high school / vocational school as many as 39 people (43.85) with the majority of work as housewives as many as 24 people (27%) and most have a good level of knowledge of chronic kidney disease with a frequency of 44 respondents (49.4%) and have a psychological well-being that is classified as moderate as many as 51 people (57.3%).

2. Bivariate Analysis

Table 2.1. Spearman rank correlation test results

		<i>Psychological well-being</i>						<i>P value</i>	Strength correlation
		Low		Currently		Tall			
		n	%	n	%	n	%		
Level of knowledge about chronic kidney disease	Not enough	5	100	0	0	0	0	0,000	+0.737
	Enough	0	0	38	95	2	5		
	Good	0	0	13	29.5	31	70.5		

Referring to these results, a p-value of 0.000 (<0.005) was obtained, indicating a significant correlation between knowledge levels regarding chronic kidney disease and psychological well-being in patients with chronic kidney disease. The correlation coefficient was positive at 0.737 (0.600-0.799), indicating a strong correlation between the two variables, indicating a positive correlation. The higher the respondent's knowledge level regarding chronic kidney disease, the higher their psychological well-being.

Discussion

Based on the results of the univariate analysis, 31 out of 89 respondents aged 46-55 (34.8%) had functional impairment. This is because the number of nephrons decreases by approximately 10% every ten years after age 40, with only 40% of nephrons functioning at age 80.¹⁰ Older patients are at greater risk of developing chronic kidney disease than younger patients. This is because the kidneys are unable to regenerate nephrons. As the kidneys become damaged or age, the number of nephrons decreases. Humans experience a progressive decline in Glomerular Filtration Rate (GFR) and Renal Blood Flow (RBF) with age. This decline occurs at a rate of approximately 8 ml/minute/1.73 m² per decade starting at age 40. Male respondents (55.1%) had a higher frequency than female respondents (44.9%). Men are twice as likely to develop chronic kidney disease as women, a condition that is due to the dominant prevalence of systemic diseases (hypertension, diabetes, lupus, glomerulonephritis, and polycystic kidney disease) in men and a family history of hereditary diseases. In addition, creatinine levels in men tend to be higher than in women, and the majority of men enjoy consuming alcoholic beverages while women are better at maintaining their health than men, and irregular eating patterns.¹¹ The highest frequency of respondents undergoing hemodialysis therapy was 1-5 years (52.8%), and the lowest was over 5 years (20.2%). Patients undergoing long-term dialysis often felt that it disrupted their daily lives more than those who had not yet undergone dialysis.¹² Patients often reach a stage of self-acceptance, which leads to improved adherence to hemodialysis therapy over time.

Patients also gain more information through health education from doctors or nurses about their disease and regular adherence to hemodialysis therapy, which is crucial.¹³ Based on marital status, 83 respondents were married. Patients who were in a relationship or married received support in the form of appreciation, encouragement, suggestions, and attention in addressing their partner's issues.¹⁴ Couples are able to create negative, neutral, or positive support according to their acceptance of the disease.¹⁵ Support is

important for individuals undergoing hemodialysis because hemodialysis brings changes that lead to a decline in mental and physical conditions unlike when they are healthy. The highest level of education for respondents was mostly high school/vocational school, with a frequency of 39 respondents (43.8%), while the lowest educational level was no schooling (3.4%). Patient education significantly impacts patient compliance in understanding and following care and treatment instructions. However, the results showed that the majority of respondents with secondary education outperformed those with lower education in terms of compliance with care and treatment.⁸In addition, education can influence a person's behavior because the higher the level of education a person obtains, the easier it is for them to obtain knowledge and information related to controlling depression.¹⁶ Based on occupation, 24 respondents (27%) worked as housewives, and only 2 respondents (2.2%) worked as farmers. In general, housewives often don't have enough time to care for their own health due to their busy household chores.¹⁴Because of their roles, they often have unhealthy relationships with an imbalanced give-and-take.

This creates confusion in establishing clear personal boundaries, naturally leading to codependent behavior patterns, making it difficult for them to maintain self-care, and making them constantly focused on others.¹⁷According to the research, respondents generally had a good level of knowledge. This knowledge stems from education and information sources that can provide additional insights. Echoing Notoatmodjo's explanation, increased knowledge can empower a person to navigate various experiences, including those gained from others or self-directed experiences, such as information from healthcare providers. Therefore, an active patient role is crucial in healthcare.¹⁸ The majority of respondents reported moderate psychological well-being (57.3%). This is because not all patients with chronic kidney failure undergoing hemodialysis experience a decline in psychological well-being.¹⁹Kidney failure patients who can provide direction to activities towards their life goals and believe in being able to carry out personal self-development, where this begins with good self-acceptance of their condition.²⁰ Based on the results of a bivariate analysis using the Spearman rank test, which aims to analyze the influence of knowledge about chronic kidney disease on psychological well-being in patients with chronic kidney disease, the Spearman rank test results showed a relationship between knowledge about chronic kidney disease and psychological well-being in patients with chronic kidney disease. Both research variables have a positive and strong correlation, meaning that a high level of knowledge about chronic kidney disease indicates a high level of psychological well-being. The study's findings align with findings that higher knowledge predicts lower incidence of mental disorders and lower levels of self-rated mental health problems, such as depressive symptoms.

Knowledge is also associated with higher psychological well-being, as measured by concepts such as happiness, positive affect, and life satisfaction.²¹Someone who has high Psychological Well Being is related to an individual who learns and identifies new ways to solve problems in the process of achieving their goals.²²According to psychological ownership theory, significant investment in acquiring and maintaining control over knowledge creates a sense of ownership. This creates an emotional attachment to the knowledge, often considered personal intellectual property.²³An individual who already knows about certain information indicates that he will be able to take and determine decisions regarding the best attitude to take.²⁴Knowledge is also linked to self-efficacy because knowledge is one aspect that forms self-efficacy.²⁵Regarding psychological well-being, self-efficacy plays a crucial role because it increases overall confidence in completing the treatment process and fosters the ability to handle challenging situations. Improved self-efficacy fosters confidence in the treatment process, enabling individuals to effectively manage their lives, positively related to their ability to manage stress.²⁶Many respondents in this study possessed a good level of knowledge, generally acquired through formal or informal education. Individual knowledge often begins with personal experience or that of others and is then deepened through learning. Furthermore, knowledge can also be acquired through interaction with the environment and mass media.²⁴Knowledge is necessary for assessing an object's capabilities based on established criteria.

Therefore, through knowledge, patients can increase their confidence in accepting their health condition and achieve a better quality of life.¹⁸Patients with good knowledge are expected to be able to comply with treatment instructions, manage health problems, and make informed decisions regarding their health. Research has shown that patients with chronic kidney disease who have good knowledge tend to have

better clinical outcomes.⁹ Knowledge can be a guideline for someone in carrying out actions (over behavior) based on the experiences that have been gained by all humans.²⁷ *Psychological well-being* is a concept that encompasses a person's perception of daily activities and how they express various personal feelings that arise from their life experiences.²⁸ The majority of respondents in this study demonstrated moderate psychological well-being. They had a positive attitude toward self-acceptance despite being unable to engage in their previous activities due to their illness. They were able to acknowledge both the good and bad aspects of themselves and find positive meaning in their lives.²⁹ An individual who can accept himself is defined as someone without the burden of feelings towards himself, so that a person has more opportunities to adapt to the environment.³⁰ Psychological well-being is defined as a drive to fully explore one's potential. This drive can lead to an individual's resignation to conditions that lower their psychological well-being, or an individual's efforts to improve their life, which in turn leads to higher psychological well-being.¹⁹ Individual attitudes can be formed from bad and good experiences, then these experiences are projected as self-motivation so that positive things can be achieved in the future.³¹

IV. CONCLUSION

Based on the research objectives, the results of data analysis, and the discussion that has been presented, it can be concluded that the better the level of knowledge regarding chronic kidney disease, the greater the influence on improving the psychological well-being of chronic kidney disease sufferers. Based on these findings, several recommendations can be put forward. Respondents are encouraged to regularly participate in educational programs related to chronic kidney disease to improve their knowledge of prevention, treatment, and hemodialysis therapy for chronic kidney disease. Future researchers are advised to further explore other examples of well-being, such as subjective well-being and spiritual well-being in patients with chronic kidney disease. Healthcare workers are also encouraged to provide education related to chronic kidney disease and provide support to patients.

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