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THE TELATIONSHIP OF ANXIETY, COMPLIANCE, AND KNOWLEDGE ON THE QUALITY OF LIFE OF HEMODIALISIS PATIENTS AT THE HEMODIALISIS INSTALLATION OF THE HOSPITAL CILEUNGSI

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Abstract

Background: Quality of life is an individual's perception of happiness in life, influenced by personal values, culture, and the environment. Chronic Kidney Disease (CKD) is a permanent kidney disorder that affected approximately 0.38% of the Indonesian population in 2018, with a high prevalence rate in West Java Province (over 52,000 cases). Understanding the risk factors for CKD in West Java is crucial for better prevention and management, as well as recognizing the impact of anxiety and compliance on the quality of life. Purpose: To investigate the influence of anxiety, compliance, and knowledge on the quality of life of patients in the hemodialysis unit of RSUD Cileungsi. Methods: This analytical cross-sectional study included a total sample of 40 hemodialysis patients at RSUD Cileungsi. Results: Among the participants, 32.5% experienced moderate anxiety, 27.5% had mild anxiety, 30.0% had no anxiety, and 10.0% had severe anxiety. The majority of patients, specifically 35.0%, demonstrated a very high level of compliance, 30.0% had a high level of compliance, 27.5% had a moderate level of compliance, and 7.5% had low compliance. Regarding knowledge, 34.0% of patients had excellent knowledge, 22.5% had good knowledge, 32.5% had fair knowledge, and 10.0% had poor knowledge. There was a significant influence observed between anxiety, compliance, and knowledge on the quality of life of patients in the hemodialysis unit of RSUD Cileungsi (p-value 0.000). Conclusion: This study identified a significant influence of anxiety, compliance, and knowledge on the quality of life of patients in the hemodialysis unit of RSUD Cileungsi. It is hoped that these findings will enhance healthcare professionals' awareness of the importance of addressing these factors in hemodialysis patients.

Keywords: Anxiety, Compliance, Knowledge, Quality of Life

Introduction

Quality of life is a person's personal perception of the level of happiness and satisfaction in living their life (Khodaverdi, et al., 2011). The concept of Quality of Life refers to an individual's ability to achieve a normal level of life, in accordance with the goals, expectations, standards and concerns they have, which are influenced by the values and culture in their environment (Nofitri, 2009).

Quality of life is also used as an indicator to describe a person's health status (Larasati, 2012). Health professionals must pay attention to the importance of quality of life because this can be a measure of the success of medical actions, interventions, or therapies given to patients (Khodijah, 2013). In another study, Khairy, et al. (2012) stated that Health Related Quality of Life helps in building good relationships between patients and doctors and can improve patient treatment outcomes.

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In addition, the results of quality of life assessments also help health care providers evaluate the risks that patients may face.

Hemodialysis, on the other hand, is a procedure used in patients who experience acute kidney disease or require short-term dialysis therapy, as well as in patients with Chronic Renal Failure (CKD) or End Stage Renal Disease (ESRD) who require long-term or permanent therapy. Hemodialysis involves taking blood from the patient's body and pumping the blood into a dialyzer, where the blood is filtered to remove harmful substances before returning to the patient's body after removing excess water, electrolytes, and other substances.

CKD is a progressive and irreversible disorder of kidney function, which results in the body being unable to maintain fluid and electrolyte balance and healthy metabolism (Putri et al., 2020). To determine CKD, the criteria generally involve a decrease in the Glomerular Filtration Rate (GFR) for more than 3 months with a level of less than 60 ml/minute/1.73 m2, with or without kidney damage (Kasiske, 2014). According to the Kidney Disease Improving Global Outcomes (KDIGO) guidelines, kidney disease that lasts more than 3 months can be categorized as chronic kidney disease. Kidneys have a variety of important functions, including excretion, endocrine, and metabolism. Glomerular Filtration Rate (GFR) is an important indicator in assessing renal excretory function in general, and a decrease in GFR below 60 ml/min/1.73 m2 can be identified through routine laboratory examinations. In addition, kidney damage can occur in various parts of the kidney, such as the parenchyma, blood vessels and collecting system, and can usually be detected through kidney markers rather than through direct examination of kidney tissue (NKFKDIGO, 2013 in Sari, 2017).

According to a report from the National Center for Biotechnology Information (NCBI), chronic kidney disease is a progressive condition that significantly affects more than 10% of the general population worldwide, covering more than 800 million people by 2022. Not only that, this disease tends to occur more frequently in older groups of individuals, women, and racial minorities. Risk factors that increase the likelihood of developing chronic kidney disease also involve individuals suffering from diabetes mellitus and hypertension, according to the same report from NCBI that same year. Therefore, an in-depth understanding of these aspects is crucial for efforts to prevent, early diagnosis and effective management of chronic kidney disease in an effort to improve public health globally.

Based on Riskesdas data (2018), the incidence of chronic kidney failure in Indonesia reached 0.38% of the total population of 252,124,458 people. With these figures, it can be concluded that there are around 713,783 people suffering from chronic kidney failure in Indonesia, according to a report issued by the Ministry of Health of the Republic of Indonesia in the same year. This figure highlights its significance in the context of Indonesian public health. The impact of the high number of individuals affected by chronic kidney failure demands serious attention to prevention, early detection and management of the disease. Therefore, preventive measures and increasing public awareness about risk factors, such as metabolic diseases and high blood pressure, are key to reducing the burden of these diseases at the national level. Apart from that, efforts to increase access to medical care and adequate health services are also important to improve the quality of life for individuals living with chronic kidney failure in Indonesia.

According to Riskesdas data, West Java Province has emerged as one of the regions in Indonesia that is facing serious challenges related to the prevalence of chronic kidney failure. In 2018, West Java Province recorded a high prevalence rate for this condition, with total cases reaching 52,511 cases throughout the province, as reported by Riskesdas West Java in the same year. These figures reflect the significant impact of this health problem at the local level. The importance of identifying the main causes and risk factors associated with the high prevalence of chronic kidney failure in West Java Province is crucial for designing effective prevention strategies. Careful preventive measures and a holistic approach can help reduce the burden of this disease, while improving the quality of life for

people in the region. Additionally, collaboration between governments, health service providers and local communities can form a strong foundation to address these health challenges together.

Based on data taken from SIMRS (Hospital Management Information System) Cileungsi District Hospital in the last year, there were 7803 patients, while for patients with cases of kidney failure there were 353 patients who had been treated, so from the data obtained, the prevalence of patients with kidney failure in the emergency room as much as 4.52%.

Anxiety is a psychological state full of fear and worry about something that is not certain to happen. The origin of the word "anxiety" comes from Latin (anxius) and German (anst), referring to negative influences and related physical reactions (Muyasaroh et al., 2020). According to the American Psychological Association (APA) in (Muyasaroh et al., 2020), anxiety is an emotional response that appears when individuals experience stress, characterized by feelings of tension, worried thoughts, and physical reactions such as increased heart rate and blood pressure.

Obedience, on the other hand, comes from the English word “obedience” which has roots in the Latin, “obedire,” which means to listen. The term "obedience" refers to obedience to orders or rules (Alam, 2021). In other words, compliance reflects a person's level of following the rules, care, treatment and actions recommended by health professionals such as nurses, doctors or other medical personnel (Pratama, 2021).

Knowledge is the result of an understanding process that occurs after a person experiences stimulation from certain objects through the five senses, such as sight, hearing, smell, taste and touch. Knowledge is important because it plays a role in shaping a person's behavior. This knowledge can be obtained from sensory experience through senses such as hearing (ears) and sight (eyes), and depends on the extent to which a person perceives the object with different intensities (Notoatmodjo, 2010).

Methods

This research is analytical with a cross-sectional method, aimed at exploring the relationship between independent and dependent variables which are measured simultaneously. Carried out in the Hemodialysis Installation room at the Cileungsi Regional General Hospital in November 2023, this research focuses on kidney failure patients undergoing hemodialysis. The population was 40 patients registered in the hemodialysis installation of this hospital. Using Total Sampling, all 40 patients were sampled. Inclusion criteria include patients who are undergoing hemodialysis, are stable, can communicate, are willing to be respondents, and have filled out a questionnaire. Meanwhile, the exclusion criteria are patients with other terminal illnesses, poor health conditions, or unwillingness to participate.

Results

The results of data collection were processed using the SPSS version 26.0 computer program, then edited, coded, tabulated and analyzed. presented in table form with explanations.

A. Demographic Data

Table 1.1 Frequency Distribution of Demographic Data for Hemodialysis Patients in the Hemodialysis Installation of Cileungsi Regional Hospital

Demographic Variables	Frequency	Percentage
Gender		
- Man	18	45.0
- Woman	22	55.0
Total	**40**	**100.0**
Age		
- < 30 years	0	0.0
- 31 – 40 years	1	2.5
- 41 – 50 years	13	32.5
- 51 – 60 years	26	65.0
- > 60 years	0	0.0
Total	**40**	**100.0**
Last education		
- Elementary school	5	12.5
- Junior high school	15	37.5
- Senior high school	15	37.5
- D3	3	7.5
- S1	2	5.0
- S2	0	0.0
- S3	0	0.0
Total	**40**	**100.0**
Work		
- Employee	1	2.5
- Housewife	13	32.5
- Government employees	6	15.0
- Self-employed	9	22.5
- Other	11	27.5
Total	**40**	**100.0**

From table 1.1, of the 40 respondents, the majority were women (55%) and men (45%). The largest age group is 51-60 years (65%), there are no respondents under 30 years or over 60 years. The highest levels of education were middle school and high school (37.5% each), followed by elementary school (12.5%). There were 3 D3 respondents (7.5%) and 2 S1 (5%). Nobody has a Masters or PhD. In conclusion, the majority are women, middle to advanced age, and education equivalent to high school.

B. Univariate Analysis

1) Quality of Life for Hemodialysis Patients

Table 1.2 Frequency Distribution of Quality of Life for Hemodialysis Patients in the Hemodialysis Installation of Cileungsi Regional Hospital

Quality of Life	Frequency	Percentage
Very Low Quality of Life	0	0.0
Low Quality of Life	4	10.0
Moderate Quality of Life	14	35.0
High Quality of Life	11	27.5
Very High Quality of Life	11	27.5
Total	**40**	**100.0**

Based on table 1.2 above, it can be seen that of the 40 respondents, the majority of patients had a moderate quality of life, 14 people (35.0%), 4 patients with a low quality of life (10.0%), 11 patients with a high quality of life (27.5%), and patients with a very high quality of life were 11 people (27.5).

2) Hemodialysis Patient Anxiety

Table 1.3 Frequency Distribution of Anxiety for Hemodialysis Patients in the Hemodialysis Installation of Cileungsi Regional Hospital

Anxiety	Frequency	Percentage
Very Severe Anxiety	0	0.0
Severe Anxiety	4	10.0
Moderate Anxiety	13	32.5
Mild Anxiety	11	27.5
No Anxiety	12	30.0
Total	**40**	**100.0**

Based on table 1.3 above, it can be seen that of the 40 respondents, the majority of patients had moderate anxiety, 13 people (32.5%), 4 people with severe anxiety (10.0%), 11 patients with mild anxiety (27.5%), and 11 patients with mild anxiety. with no anxiety as many as 12 people (30.0).

3) Hemodialysis Patient Compliance

Table 1.4 Frequency Distribution of Compliance with Hemodialysis Patients in the Hemodialysis Installation of Cileungsi Regional Hospital

Compliance	Frequency	Percentage
Very Low Compliance	0	0.0
Low Compliance	3	7.5
Moderate Compliance	11	27.5
High Compliance	12	30.0
Very High Compliance	14	35.0
Total	**40**	**100.0**

Based on table 1.4 above, it can be seen that of the 40 respondents, the majority of patients had very high compliance, 14 people (35.0%), 12 patients with high compliance (30.0%), and 11 patients with moderate compliance (27.5), and There were 3 patients with low compliance (7.5).

4) Knowledge of Hemodialysis Patients

Table 1.5 Frequency Distribution of Knowledge of Hemodialysis Patients in the Hemodialysis Installation of Cileungsi Regional Hospital

Knowledge	Frequency	Percentage
Very Poor Knowledge	0	0.0
Lack of Knowledge	4	10.0
Sufficient Knowledge	13	32.5
Good Knowledge	9	22.5
Excellent Knowledge	14	34.0
Total	**40**	**100.0**

Based on table 1.5 above, it can be seen that of the 40 respondents, the majority of patients had very good knowledge, 14 people (34.0%), patients with good knowledge, 9 people (22.5%), patients with sufficient knowledge, 13 people (32.5), and patients with as little knowledge as 4 people (10.0).

C. Bivariate Analysis

1) Relationship between anxiety levels and quality of life

Table 1.6 The Relationship between Anxiety Level and Quality of Life for Hemodialysis Patients in the Hemodialysis Installation at Cileungsi Regional Hospital

Anxiety Level	Quality of Life										Total		*P. Value*
	Very Low		Low		Medium		Good		Very Good				
	F	%	F	%	F	%	F	%	F	%	F	%	
So heavy	0	0	0	0	0	0	0	0	0	0	0	0.0	0.000
Heavy	0	0	4	10.0	0	0	0	0	0	0	4	10.0	
Currently	0	0	0	0	13	32.5	0	0	0	0	13	32.5	
Light	0	0	0	0	0	0	11	27.5	0	0	11	27.5	
There isn't any	0	0	0	0	1	2.5	0	0	11	27.5	12	30.0	
Total	0	0	4	10.0	14	35.0	11	27.5	11	27.5	40	100	

Based on table 1.6 above, it can be seen that 4 of the 4 respondents with severe anxiety had a low quality of life (10.0%), of the 13 respondents with moderate anxiety, 13 (32.5%) of the 13 respondents with moderate anxiety had a moderate quality of life. 11 respondents with no anxiety had a very high quality of life (27.5%), and 1 respondent with no anxiety had a moderate quality of life (2.5%). The cross tabulation results between the anxiety variable and quality of life show that the Chi-Square statistical test results obtained a p value of 0.000 (p value < 0.05), which means there is a significant relationship between anxiety and the quality of life of hemodialysis patients.

2) Relationship between level of compliance and quality of life

Table 1.7 The Relationship between the Level of Compliance and the Quality of Life of Hemodialysis Patients in the Hemodialysis Installation at Cileungsi Regional Hospital

Compliance Level	Quality of Life										Total		*P. Value*
	Very Low		Low		Medium		Good		Very good				
	F	%	F	%	F	%	F	%	F	%	F	%	
Very low	0	0	0	0	0	0	0	0	0	0	0	0.0	
Low	0	0	3	7.5	0	0	0	0	0	0	3	7.5	
Currently	0	0	0	0	11	27.5	0	0	0	0	11	27.5	0.000
High	0	0	1	2.5	0	0	11	27.5	0	0	12	30.0	
Very high	0	0	0	0	3	7.5	0	0	11	27.5	14	35.0	
Total	0	0	4	10.0	14	35.0	11	27.5	11	27.5	40	100	

Based on table 1.7 above, it can be seen that of the 14 respondents with very high compliance, 11 people (27.5%) had a good quality of life, and 3 respondents with very high compliance had a moderate quality of life (7.5%), of the 12 respondents with High compliance had a good quality of life as many as 11 people (27.5%), and respondents with high compliance who had a low quality of life were 1 person (2.5%), of the 11 respondents with moderate compliance who had a moderate quality of life there were 11 people (27.5%).), and of the 3 respondents with low compliance, 3 people (7.5%) had a low quality of life. The cross tabulation results between the compliance variable and quality of life show that the Chi-Square statistical test results obtained a p value of 0.000 (p value < 0.05), which means there is a significant relationship between compliance and the quality of life of hemodialysis patients.

3) Relationship between level of knowledge and quality of life

Table 1.8 Relationship between Knowledge Level and Quality of Life of Hemodialysis Patients in the Hemodialysis Installation of Cileungsi Regional Hospital

Knowledge level	Quality of Life										Total		*P. Value*
	Very Low		Low		Medium		Good		Very good				
	F	%	F	%	F	%	F	%	F	%	F	%	
Very less	0	0	0	0	0	0	0	0	0	0	0	0.0	
Not enough	0	0	4	10.0	0	0	0	0	0	0	4	10.0	
Enough	0	0	0	0	13	32.5	0	0	0	0	13	32.5	0.000
Good	0	0	0	0	0	0	9	22.5	0	0	9	22.5	
Very good	0	0	0	0	1	2.5	2	5.0	11	27.5	14	35.0	
Total	0	0	4	10.0	14	35.0	11	27.5	11	27.5	40	100	

Based on table 1.8 above, it can be seen that of the 14 respondents with a very high level of knowledge, the majority had a very good quality of life, 11 people (27.5%), and respondents with a very high level of knowledge, the majority had a good quality of life, 2 people (5.0%), most of the respondents with a very high level of knowledge had a moderate quality of life, 1 person (2.5%), of the 9 respondents with a high level of knowledge, 9 people (22.5%) had a good quality of life. Of the 13 respondents with a sufficient level of knowledge, 13 people (32.5%) had a moderate quality of life, of the 4 respondents with a low level of knowledge, 4 people (10.0%) had a low quality of life. The cross tabulation results between the knowledge variable and quality of life show that the Chi-Square statistical test results obtained a p value of 0.000 (p value < 0.05), which means there is a significant relationship between knowledge and the quality of life of hemodialysis patients.

Discussion

The research findings showed that anxiety levels are linked to the quality of life of respondents. Those without anxiety had good quality of life, and moderate anxiety levels correlated with the highest percentage of moderate quality of life. Severe anxiety corresponded to low quality of life, and the statistical analysis indicated a significant relationship between anxiety levels and quality of life.

Similarly, the level of compliance was associated with quality of life, with higher compliance related to better quality of life. The study revealed a strong statistical relationship between compliance levels and quality of life.

Moreover, respondents' knowledge levels were linked to their quality of life. Those with very good knowledge had good quality of life, while those with insufficient knowledge had low quality of life. The statistical analysis confirmed a significant relationship between knowledge levels and quality of life.

Implication and limitations

However, the research had limitations, including an unbalanced gender composition among respondents, potentially impacting generalizability. Additionally, data collection through questionnaires encountered issues with incomplete and inconsistent responses, suggesting the need for improved data collection methods.

Conclusion

The results of research regarding the relationship between anxiety, compliance and knowledge on the quality of life of hemodialysis patients in the hemodialysis installation of the Cileungsi regional general hospital show that the majority of patients experienced a moderate level of anxiety (32.5%) and had a very high level of compliance (35.0%). Regarding knowledge, the majority of patients had very good knowledge (34.0%). Statistical analysis shows a significant relationship between anxiety, compliance and knowledge with the quality of life of hemodialysis patients (each with a p-value of 0.000). These results provide an important picture of the factors that can influence the quality of life of hemodialysis patients in these hospitals.

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Author contribution

Author 1 and Author 2 contributed to the design and implementation of the research, to the analysis of the results and to the writing of the manuscript.

Conflict of interest

The results of this research can be used as an additional literature for the development of nursing science, and to meet the requirements of obtaining a Bachelor of Nursing Degree for Author 1.

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