

ORIGINAL ARTICLE

Relationship Between Coping Mechanisms and Quality of Life of Patients with Chronic Kidney Failure Undergoing Hemodialysis in a Hospital in the Rural Area

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ABSTRACT

Introduction: Chronic Kidney Disease (CKD) patients who were undergoing hemodialysis will face many changes throughout all aspects of life that might impact their quality of life. A coping mechanism may help individuals to be able to adapt and face those changes due to their illness. This study aims to identify the relationship between coping mechanisms and the quality of life among CKD patients undergoing hemodialysis. **Methods:** The Brief Cope method was used in this study to measure coping with WHOQOL-BREF for quality of life. About 62 respondents participated in this study selected by using convenience sampling method. **Results:** Statistical analysis of the results showed that $R^2 = 0.162$ and simple regression showed that beta (B) score was 0.466 related to problem focus coping, meaning that every 1-unit of problem focus coping (Brief Cope) will increase 0.466 unit quality of life (WHOQOL-BREF). Whereas beta (B) score was 1.037 related to emotional focus coping, meaning every 1-unit of emotional focus coping (Brief Cope) will increase 1.037 unit quality of life (WHOQOL-BREF). **Conclusion:** This study suggested that hospital personnel support patients by using appropriate coping mechanisms to solve health problems. As a result, the stress or psychological problems of hemodialysis patients can be reduced by this coping method.

Keywords: Hemodialysis, Coping mechanism, Quality of life

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INTRODUCTION

Non-Communicable Diseases (NCD) have become one of the world's priority because it is the leading cause of death. The disease with a long time and slow progression is reported to have killed 15 million people aged 30 to 70 years each year (1). One non-communicable disease whose disease development needs attention is Chronic Kidney Failure (GK), which is a complication of several NCDs such as hypertension, diabetes mellitus, and other renal diseases (2).

There were 338 new cases of Chronic Kidney Disease (CKD) per one million people in the United States at the end of 2003 (3). Meanwhile, Indonesia is also a country with a high rate of people with CKD. A report from PENEFR (Indonesian Nephrology Association) / Indonesia Renal Registry in 2015 showed that the number of new patients continues to increase every

year. In 2015 there were 21,050 new patients and 30,554 active patients undergoing hemodialysis. Central Java Province has occupied the fourth position out of 34 Provinces in Indonesia with the number of kidney failure cases recorded as 1,433 people in 2015 (4). One of the regencies in Central Java that has a high prevalence of CKD is Pekalongan and Batang, Indonesia.

Chronic kidney failure requires a variety of therapies that not only involve high costs but also a long period. Patient with End-stage kidney disease (End Stage Renal Disease/ ESRD) must undergo kidney replacement therapy, which is the only option to maintain body functions. Several kidney replacement therapies include kidney transplants or dialysis with peritoneal dialysis (CAPD) and hemodialysis (2). Currently, the most widely used kidney replacement therapy is hemodialysis. This hemodialysis will cause various physical problems and also psychological, social, economic and spiritual impacts, that degrade the quality of life of patients (5).

A Phenomenology study showed that the quality of life of patients decreased since the patient were undergoing hemodialysis. Psychological responses experienced

include boredom, hopelessness, and feeling a burden to those closest to them, along with negative feelings such as despair and suicidal tendencies(5). Another study revealed that the majority of hemodialysis patients had a poor quality of life (56.7%), while the remaining 43.3% of patients had a good quality of life (6,7).

Coping mechanisms can help patients deal with stress, adapt to changes, and respond to threatening situations (8). Patients who use adaptive coping mechanisms will support the function of integration, growth, learning, and achieving goals. Adaptive coping is shown by being willing to talk about problems faced by others, being able to solve problems selectively by finding out treatment information, being able to divert problems and performing daily activities (9).

Patients who employ the improper coping mechanism, on the other hand, may experience slowed growth, less autonomy, and a desire to control their surroundings by sleeping, becoming angry, withdrawing, not informing people about their issues, having low self-efficacy, and blaming God for their sickness (9). These problems may reflect that the patient has not entirely accepted his condition. This will increase psychological problems and will worsen the quality of life. Therefore, coping mechanisms are essential to consider especially for nurses, as providers of nursing care to determine the right approach, so that a therapeutic relationship is created between the nurse and the client. Based on this background, researchers are interested in studying the relationship between coping mechanisms and quality of life of patients with Chronic Kidney Failure undergoing hemodialysis in the hospitals of rural areas.

MATERIALS AND METHODS

This research uses a descriptive-analytic design with a cross-sectional approach. Data collection were carried out with two questionnaires, namely Brief Cope and WHOQOL-BRIEF. The coping mechanism was measured using the Brief Cope questionnaire created by (10) which is a revised from inventory cope and quality of life is measured using WHOQOL-BREF. This study uses convenience sampling, namely patients undergoing hemodialysis at Batang Hospital and Kajen Hospital with 62 patients and 42 patients in Batang Hospital, in the rural area of Indonesia. Data were analyzed using simple regression. Researchers have obtained informed consent from patients. Ethical was approved by Research and Development Planning Agency (BAPPEDA) No. 072/169/2018 in Batang, Indonesia.

RESULTS

The characteristics of respondents of chronic renal failure patients who underwent hemodialysis in Batang and Kajen Hospital, Indonesia are showed in the Table I.

Table I: Distribution of Characteristics of Chronic Kidney Failure Patients Underwent Hemodialysis in Batang Regional Hospital and Kajen Hospital in 2018 (n = 62)

Characteristics	Frequency	%
Age		
20-30 y.o	2	3.2
31-40 y.o	9	14.5
41-50 y.o	27	43.5
>50 y.o	24	38.7
Sex		
Male	40	64.5
Female	22	35.5
Education		
No Education	2	3.2
Elementary	32	51.6
Junior High	9	14.5
Senior High	9	14.5
University	10	16.1
Job		
Jobless	30	48.4
Farmer/Labor	21	33.9
Civil Servants	5	8.1
Entrepreneur	6	9.7
Duration of Hemodialysis		
<12 months	22	35.5
12-24 Months	19	30.6
>24 months	21	33.9

Failure Patients Underwent Hemodialysis in Batang Regional Hospital and Kajen Hospital in 2018 (n = 62)

Based on the results of the study, the data obtained showed that most of the respondents have a category of age range of 41-50 years as many as 27 people (43.5%). Most respondents were male as many as 40 people (64.5%). Most respondents as many as 32 completed elementary schools (51.6%). Most respondents did not work as many as 30 people (48.4%), and most respondents underwent haemodialysis for <12 months (35.5%).

Table II shows that there is a relationship between coping mechanisms with quality of life. The table above shows an F value of 5.688 significant at $p < 0.05$; these results mean that this regression model can be used to predict the quality of life using problem-focused coping and emotion-focused coping. About 16.2% of the variability in the quality of life can be explained in this model ($R^2 = 0.162$). The problem-focused coping regression coefficient is 0.466, which means that addition of 1 unit each with the problem-focused coping, the value of quality of life increases by 0.466. Meanwhile, the emotion-focused coping regression coefficient is 1.037, which means that with each addition of 1 unit of emotion-focused coping, the value of quality of life increases by 1.037.

Table III shows that the average score of the physical

Table II: Regression Coefficient Coping and Quality of Life in Chronic Kidney Failure Patients Underwent Hemodialysis in Batang and Kajen Hospitals in 2018 (n = 62)

	B	β	T	R ²	Sig	F
(Constant)	0.520		.026	.162	0.979	5.688
<i>Problem focused Coping</i>	0.466	0.363	2.959		0.004	
<i>Emotion focused Coping</i>	1.037	0.278	2.268		0.027	

Table III: Domain Name of Quality of Life for Chronic Kidney Failure Patients Underwent Hemodialysis in Batang and Kajen Hospital in 2018 (n = 62)

Domain	Average total score	Min	Max	SD
Domain 1. Physical	45.27	13	69	11.703
Domain 2. Psychological	53.40	15	75	14.540
Domain 3. Social	61.61	6	81	15.680
Domain 4. Environment	54.98	24	81	15.494

domain is 45.27 (SD = 11.703), with the lowest value being 13, while the highest value is 69. On the other hand, the average psychology domain score is 53.4 (SD = 14.54), with a minimum value is 15, while the maximum value is 75. The average score of the social domain is 61.6. The lowest value is 6, while the highest value is 81 with a standard deviation of 15.68. The average score of the environment domain is 54.98. The lowest value is 24, while the highest value is 81 with a standard deviation of 15.49. A study also revealed that hemodialysis caused many complex problems including physical, psychological, social and environmental aspects as well(5).

DISCUSSION

The average total score of coping mechanisms of respondents was 66.73 (SD = 8.765) with the lowest value of the coping mechanism being 51, while the highest value is 84. A study showed similar results that the average score of coping mechanism is 66.55, a minimum score is 43, while a maximum value of 93 with a standard deviation of 9.46(11). Another study also concludes a similar result that patients who experience chronic disease will use coping mechanisms more often (12). This is because chronic diseases make individuals feel depressed and stressed. Due to changes caused in terms of physical, psychological, social, and spiritual well being. As a result coping mechanisms will help the individual to adapt to this changes environment to find information and take suitable action to change the situation, or regulate emotions related with stress.

Coping mechanisms are divided into two categories, namely problem-focused coping, and emotion-focused coping. The application of coping mechanisms will be different for each individual. Patients can use both types of coping mechanisms simultaneously or in combination with both(13). There is not a single coping method that can be applied constantly or is effective in all stressful situations(14). The average total quality of life score in

this study was 54.1 (SD = 11,739), with the lowest score being 25 and the highest score being 72. Other studies showed similar results in which most respondents had a poor quality of life as many as 34 people (56.7%)(6). These results are due to chronic kidney failure which is a debilitating chronic disease. As a result all the patients will experience a decrease in quality of life. Apart from the effect of the disease, a decrease in the quality of life of these patients with chronic kidney failure is also a result of hemodialysis therapy. But one study revealed that the quality of life among hemodialysis patients is lower than that of Continuous Ambulatory Peritoneal Dialysis(CAPD) patients (15).

The physical condition of hemodialysis patients decreases due to decreased levels of haemoglobin and albumin, which results in weakness while doing work. The patients will be also disturbed psychologically because they feel their lives are dependent on tools and are bored undergoing treatment that lasts a lifetime; it can trigger feelings of stress, fear, depression, and shock. Disruption of social relations will occur due to physical weakness so that the frequency of socializing decreases. In addition, after undergoing hemodialysis, the patient's mobility is limited because the therapy schedule makes them very weak, so one patient can take hemodialysis 3-4 days per month only (16). Environmental disturbances also occur due to increased financial needs and reduced financial income due to prolong treatment. Therefore, the decline in all these aspects results in the patient perceiving his life to be meaningless so will have an impact on reducing the quality of life.

Several factors that influence the quality of life in addition to coping mechanisms include individual factors (age, sex, level of education, and occupation), medical condition (period of hemodialysis treatment, stage of the disease, hemodialysis therapy undertaken) and functional status (anaemia and hemodialysis adequacy)(17). The results of this study also showed an emotion-focused coping regression coefficient of 1.037, which means that each 1 unit of emotion-focused coping increased the quality of life by 1.037. The use of emotion-focused coping in patients with chronic kidney failure is a person's process to focus on overcoming negative emotions related to stressful situations, even if the situation itself cannot be changed. If the patient uses emotion-focused coping mechanism, then the patient will try to accept the problem positively and can divert the mind through various activities such as pursuing hobbies, doing daily activities and enjoying life by overpowering weak emotions(12). Thus the patient

can still meet the demands of activities of normal life and achieve satisfaction in his life. This will improve the quality of life of these patients. Emotion-focused coping also allows patients to try to see the good side of everything they are experiencing. Patients also learn to gain wisdom or value from the efforts that they have given in their lives.

The results show that the problem-focused coping regression coefficient of 0.466, means that each 1 unit of problem-focused coping increases the value of quality of life by 0.466. A study concluded similarly that problem-focused coping is an effective way to overcome long-term problems(18). One of the long-term problems is chronic kidney failure, which is a disease that lasts a lifetime. The mechanisms coping tends to be directed to reduce the demands of stressful situations, in the sense that coping mechanisms that focus on individual problems will help the patient to cope with stress by learning new skills. Thus the patient will be motivated to undergo a hemodialysis therapy program to change his life routinely. Patients will also search for information about diets and various appropriate treatments for patients with chronic kidney failure. This can reduce the symptoms that arise due to the disease. In this manner the patients will feel better in terms of physical well being. If the physical condition of the patient improves, it will automatically reduce the psychological, social and environmental burden and it will have an impact on improving the quality of life.

Excellent coping skills in patients with chronic kidney failure make them understand and interpret the disease they experienced positively. A good coping mechanism is necessary, so that the patient can manage emotions in overcoming the problems shown by self-control, positive judgment, self-efficacy, and mental involvement that has some value and affect their quality of life. Therefore, it is necessary to develop the ability to apply an appropriate coping strategy for patients with chronic kidney failure undertaking hemodialysis.

CONCLUSION

This study concludes that better coping mechanism will improve the quality of life of patients undergoing hemodialysis. This study will help the hospitals, especially hemodialysis officers, to focus not only on aspects of the disease but also will help to provide support to the patient in using appropriate coping mechanisms to deal with problems, especially related with health and will reduce stress or psychological tension in life. Dialysis patients are trying to cope with the changes condition in order to reduce their stress. But in some cases, these efforts lead to using erroneous coping strategies that are ineffective or even harmful. Therefore, the necessity of planning and proper interventions by health care providers is necessary to control stress among dialysis patients in the future.

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