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Relationship Between Self-Efficacy and Coping Mechanisms in Chronic Renal Failure Patients Undergoing Hemodialysis at RSUD Sekarwangi, Sukabumi Regency

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Abstract

Background: This study aims to determine the relationship between self-efficacy and coping mechanisms in patients with chronic renal failure undergoing hemodialysis at Sekarwangi Hospital, Sukabumi Regency.

Aim: The aim of this study is to explore how self-efficacy influences coping mechanisms in hemodialysis patients with chronic renal failure.

Methods: A correlational research design with a cross-sectional approach was used. The sample consisted of 56 patients selected through total sampling. Self-efficacy was measured using a Likert scale, while coping mechanisms were assessed with a similar Likert scale-based instrument. The phi correlation test was applied for data analysis to examine the relationship between the two variables.

As a result: The study found a significant relationship between self-efficacy and coping mechanisms in chronic renal failure patients undergoing hemodialysis, with a p-value of 0.030. Patients with high self-efficacy were more likely to use adaptive coping mechanisms, which effectively manage stress. In contrast, patients with low self-efficacy tended to use maladaptive coping strategies that exacerbated their physical and psychological conditions.

In conclusion: This study highlights the importance of integrating a biopsycho-social and spiritual approach to improving patient self-efficacy, an aspect that has not been widely explored in similar research. It also addresses a gap in the literature regarding the relationship between self-efficacy and coping mechanisms in chronic renal failure patients in Indonesia, particularly in non-metropolitan areas. Based on these findings, it is recommended that hospitals implement interventions to strengthen patients' self-efficacy, enhancing stress management and improving their quality of life.

Keywords: Self-Efficacy, Chronic Renal Failure, Hemodialysis, Coping Mechanism

Introduction

Chronic kidney failure (CKD) is a medical condition that affects approximately 10% of the world's population, and this number continues to increase along with increasing age, unhealthy lifestyles, and the prevalence of other comorbidities such as hypertension and diabetes mellitus (Mayo Clinic, 2019; Tominari *et al*., 2020) [13, 7]. In Indonesia, the prevalence rate of chronic kidney failure also shows an alarming trend, with a significant increase in the elderly (Ministry of Health of the Republic of Indonesia, 2020) [7]. Patients with CKD who reach the end stage usually require renal replacement therapy such as hemodialysis to survive (Purnama *et al*., 2020) [14]. The hemodialysis process not only involves strenuous medical procedures, but also provides a significant psychosocial impact, which affects the patient's quality of life. Several factors that affect the quality of life of hemodialysis patients include physical, emotional, social, and psychological aspects, all of which are interrelated (Samsudin *et al*., 2020) [15].

Stress is one of the most common psychological responses in patients with CKD, especially those who undergo regular hemodialysis therapy. This stress can stem from various factors, such as drastic lifestyle changes, dependence on medical procedures, fear of death, as well as the physical impact of the hemodialysis process itself. Research shows that patients with high stress tend to experience a decreased quality of life, including sleep disturbances, anxiety, depression, and difficulties in

undergoing treatment (Mahamedi *et al*., 2020). Chronic stress, if not properly managed, can worsen the patient's medical condition, slow down the healing process, and increase the risk of more serious complications (Kaviani *et al*., 2020).

Self-efficacy, defined as an individual's belief in his or her ability to cope with the challenge or task at hand, plays an important role in managing stress in patients with CKD. Patients with high levels of self-efficacy tend to cope better with stress and undergo treatment better than those with low self-efficacy. The concept of self-efficacy was developed by Albert Bandura in 1977 and has proven its relevance and application in various contexts, including the medical world (Bandura, 2018) [2]. In the context of patients with CKD, self-efficacy serves as a protective factor that helps them adapt to their chronic health condition, as well as improving their ability to manage the emotional and psychological aspects of the disease.

Coping mechanisms are ways in which individuals deal with or cope with stress, which can be divided into adaptive (constructive) coping and maladaptive (destructive) coping. Adaptive coping mechanisms involve strategies such as seeking social support, focusing on solutions, and using relaxation and meditation techniques to reduce stress. In contrast, maladaptive coping mechanisms involve methods such as denial of reality, use of drugs, or social isolation that worsen the patient's condition. Patients who have high self-efficacy tend to use adaptive coping mechanisms, which are more effective in coping with stress and maintaining emotional stability (Chen *et al*., 2020). On the other hand, patients with low self-efficacy may be more likely to use maladaptive coping mechanisms that can increase the risk of depression and anxiety.

Chronic kidney disease and hemodialysis therapy present special challenges for patients, especially from a psychosocial perspective. Patients undergoing hemodialysis therapy often feel isolated and anxious about their future. They have to undergo intensive medical procedures that affect other aspects of their lives, such as work, social relationships, and daily activities. Several studies have identified that emotional stress experienced by hemodialysis patients can affect treatment effectiveness and overall quality of life (Yoo *et al*., 2021).

Many studies have examined psychosocial factors in the context of chronic illness, but there is still a gap in research examining the specific relationship between self-efficacy and coping mechanisms in chronic renal failure patients undergoing hemodialysis (Finkelstein *et al*., 2020; Liu *et al*., 2019) [3, 10]. Most existing studies have only examined one of these factors separately, without considering their interaction. Studies focusing on populations in Western countries also dominate the literature, while very few studies have examined hemodialysis patients in developing countries, including Indonesia (Wang *et al*., 2019). Research in Indonesia is particularly important as unique cultural factors, health systems and socio-economic characteristics may influence the results.

In Indonesia, despite the increasing prevalence of CKD, research on psychosocial factors affecting chronic renal failure patients undergoing hemodialysis is limited (Purnama *et al*., 2020; Ministry of Health of the Republic of Indonesia, 2020) [14, 7]. Health resources in Indonesia, especially in non-metropolitan areas such as Sukabumi Regency, also have limitations in terms of medical facilities and psychological interventions for patients (Indah *et al*., 2021) [6]. Therefore, this study aims to address these gaps by analyzing the relationship between self-efficacy and coping mechanisms in patients with GGK undergoing hemodialysis at RSUD Sekarwangi, Sukabumi Regency.

This study is also important for designing more effective intervention programs that can increase patients' self-efficacy and improve their coping mechanisms. By understanding more about how these two factors are interconnected, healthcare professionals can design a more holistic approach that includes biopsycho-social and spiritual aspects in the care of patients with CKD. This is crucial to improve the quality of life of patients and help them cope with the challenges faced during hemodialysis.

Methods

Research Design

This study used a correlational design with a cross-sectional approach. The correlational design was chosen because it aims to determine the relationship between self-efficacy and coping mechanisms in chronic renal failure patients undergoing hemodialysis. The cross-sectional approach allows data collection to be done at one point in time, which is efficient in terms of time and resources. This design allows researchers to identify patterns of relationships between these variables simultaneously.

Sample Selection

The population in this study were all chronic renal failure (CKD) patients undergoing hemodialysis at RSUD Sekarwangi, Sukabumi Regency. A sample of 56 people was taken using the total sampling technique, so that all patients who met the inclusion criteria would be included. Patients who had undergone hemodialysis for at least 6 months, were aged 18 years and above, and were willing to participate in this study were included in the sample. Patients who do not meet the inclusion criteria will be excluded from the study. Data collection is scheduled to take place between June 07 - June 11, 2021.

Research Instruments

This research instrument uses two questionnaires to measure relevant variables. The self-efficacy variable was measured using a modified Likert scale based on an instrument developed by Bandura (2018) [2]. This scale measures patients' belief in their ability to face the challenges of life and hemodialysis treatment. For the coping mechanisms variable, the Coping Strategy Inventory (CSI) was used which identifies the use of adaptive (constructive) and maladaptive (destructive) coping mechanisms, which provides an overview of how patients manage the stress arising from their illness and treatment.

Data Collection

Data collection was done through direct interview and observation. The researcher visited patients in the hemodialysis room to explain the purpose of the study and the procedures to be carried out. Patients were asked to fill out a questionnaire that included questions regarding the self-efficacy and coping mechanisms they used in undergoing hemodialysis treatment. Primary data were collected from the questionnaires filled out by the patients, while secondary data were obtained from the hospital's medical records.

Data Analysis

The collected data were analyzed using SPSS version 26.0 software. The analysis process was carried out in two stages, namely univariate analysis and bivariate analysis. Univariate analysis was used to describe the frequency distribution of each research variable, including respondent characteristics. Meanwhile, bivariate analysis used the Phi Correlation test to determine the relationship between self-efficacy and coping mechanisms. The analysis process included editing to ensure data completeness, coding to give numerical codes to variables, scoring to convert questionnaire answers into numbers, and cleaning to check for inconsistent data before further analysis.

Research Ethics

This study has been approved by the STIKES Sukabumi Research Ethics Committee and is conducted in accordance with research ethics principles. Participants were informed about the study's purpose, procedures, and potential risks, with the right to withdraw at any time. The principle of beneficence is followed by ensuring the study benefits the understanding of factors influencing patient compliance. Non-maleficence is upheld by avoiding harm to participants, both physically and psychologically. The principle of veracity is maintained through transparency in data collection and reporting. Justice is applied by ensuring fair treatment of all eligible participants. Participant identities and personal data are kept confidential and used solely for research purposes. Study results will be presented in aggregate form without identifying individual participants. This study also follows the ethical guidelines of the Sekarwangi Hospital Ethics Committee and the Declaration of Helsinki.

Research Results

This study involved 56 respondents. Data tabulation based on demographic characteristics, including age, gender, education, employment status, and duration of CKD can be seen in Table.

Table 1: Demographic Characteristics of Chronic Kidney Disease (CKD) Patients

Characteristics	Frequency (F)	Percentage (%)
Age		
36-45 Years	23	41.1
46-55 Years	24	42.9
56-65 Years	9	16.1
Gender		
Female	25	44.6
Male	31	55.4
Education		
Elementary School (SD)	14	25.0
Junior High School (SMP)	12	21.4
Senior High School (SMA)	17	30.4
University (PT)	13	23.2
Employment Status		
Employed	27	48.2
Unemployed	29	51.8
Duration of CKD		
< 3 Years	29	51.8
> 3 Years	27	48.2

This table shows the frequency distribution of the characteristics of the respondents consisting of 56 participants. Most of the respondents were between 46 to 55 years old (42.9%), followed by the 36 to 45 age group which accounted for 41.1% of the total number of respondents. Meanwhile, the age group of 56 to 65 years only accounted for 16.1% of the total participants. In terms of gender, there was a slight difference between males and females, with males outnumbering females at 55.4%, while females accounted for 44.6%. For education level, most respondents had a high school education (30.4%), followed by those with elementary (25.0%) and junior high (21.4%) education. Meanwhile, 23.2% of respondents had tertiary education. In terms of employment status, the majority of respondents (51.8%) were not working, while the other 48.2% were working. Regarding the duration of chronic kidney failure (CKD), almost half of the respondents (51.8%) had suffered from CKD for less than 3 years, while the other 48.2% had suffered for more than 3 years. These respondent characteristics show that the majority of patients are in the middle adult age group, with varying levels of education and most are unemployed. In addition, most of the respondents had had GGK for a relatively short period of time, suggesting a need for more attention in managing the condition.

Table 2: Self-Efficacy and Coping Mechanisms of Chronic Kidney Disease (CKD) Patients

No.	Variables	Category	Frequency (F)	Percentage (%)
1.	**Self-Efficacy**	High	42	75.0
		Low	14	25.0
		Total	56	100
2.	**Coping Mechanisms**	Adaptive	30	53.6
		Maladaptive	26	46.4
		Total	56	100

This table shows a descriptive analysis of self-efficacy and coping mechanisms in patients with chronic kidney failure (CKD). For the self-efficacy variable, the majority of respondents had high self-efficacy, as many as 75.0% (42 respondents), while only 25.0% (14 respondents) had low self-efficacy. This indicates that most patients have a strong belief in their ability to manage their illness and treatment. On the other hand, for coping mechanisms, almost half of the respondents (46.4%) used maladaptive coping mechanisms, which focus more on unconstructive ways of coping with stress. Meanwhile, 53.6% of respondents used adaptive coping mechanisms, which reflect more effective and healthy ways of dealing with stress. Overall, although most patients had high self-efficacy, almost half of them used maladaptive coping mechanisms, which might affect their disease management.

Table 3: The Relationship Between Self-Efficacy and Coping Mechanisms in Chronic Kidney Disease (CKD) Patients Undergoing Hemodialysis

Self-Efficacy	Coping Mechanism		Total	P-value
	Adaptive	Maladaptive		
High	23 (54.8%)	19 (45.2%)	42 (100%)	0,030
Low	3 (46.4%)	11 (78.6%)	14 (100%)	
Total			56 (100%)	

This table shows the relationship between self-efficacy (self-belief) and coping mechanisms (ways patients cope with stress) in chronic renal failure patients undergoing hemodialysis. Of the patients who had high self-efficacy, most (54.8%) used adaptive coping mechanisms, which are healthy and effective ways to cope with stress. However, there were also 45.2% who used maladaptive coping mechanisms, which were less effective. Meanwhile, in patients with low self-efficacy, the majority (78.6%) used maladaptive coping mechanisms, which tend to be more detrimental and unhelpful in managing stress. These results suggest that patients with high self-efficacy are more likely to use healthier ways to deal with stress, while patients with low self-efficacy more often rely on less effective ways. This relationship was shown to be significant with a p-value of 0.030, indicating that self-efficacy influences how patients cope with stress.

Discussion

This study aimed to explore the relationship between self-efficacy and coping mechanisms in chronic renal failure (CKD) patients undergoing hemodialysis at RSUD Sekarwangi, Sukabumi. The results showed that self-efficacy plays an important role in determining the coping mechanisms used by patients, which in turn affects their ability to manage their illness and improve overall well-being. Most patients (75%) were found to have high self-efficacy, indicating their belief in their ability to manage their treatment and health condition. This self-efficacy was shown to have a significant relationship with the use of adaptive coping mechanisms, which were used more by patients with high self-efficacy (54.8%). This finding suggests that self-efficacy may directly influence patients' choice of coping strategies, which ultimately plays a role in determining their quality of life. However, although most patients with high self-efficacy used adaptive coping mechanisms, almost half of them (45.2%) still used maladaptive coping mechanisms, which is a concern in this study. These findings underscore that although self-efficacy plays a very important role in managing the disease, other factors such as emotional support, education about the disease, and social systems also influence the outcome of the coping mechanisms used.

Self-efficacy is a person's belief in their ability to manage difficult situations or challenges they face. In a healthcare context, patients with high self-efficacy are more likely to use adaptive coping mechanisms, which are strategies that support healthy problem-solving and stress management. Adaptive coping mechanisms include seeking social support, focusing on solutions, and using relaxation techniques to reduce stress. For example, Liu *et al*. (2020) explained that high self-efficacy is associated with better health outcomes because individuals with high confidence in their abilities are more proactive in maintaining health and finding solutions to challenges faced. In this study, it was found that 54.8% of patients with high self-efficacy used adaptive coping mechanisms, which included seeking social support, focusing on problem solving, and trying to maintain their physical health through positive activities. These strategies suggest that patients who feel capable of managing their illness do not rely solely on medical treatment, but also use psychological skills to deal with the emotional and psychological challenges that come with undergoing intense medical procedures such as hemodialysis.

Based on these findings, it is important to emphasize that high self-efficacy correlates with healthy and constructive strategy choices in managing stress. Samsudin *et al*. (2020) [15] showed that patients with high self-efficacy tend to focus on self-care and form life routines that support the sustainability of their treatment. Folkman & Moskowitz (2004) [4] also stated that the use of adaptive coping mechanisms helps individuals to remain optimistic and maintain control over the situations they face, which is very important in managing chronic diseases such as CKD.

In this study, self-efficacy was also influenced by demographic factors such as age, gender, education level, and employment status. Patients with younger ages, especially in the 36-45 years and 46-55 years age groups, tended to have high self-efficacy, which suggests that age plays an important role in shaping one's confidence in managing their illness. This may be due to the tendency of younger patients to remain socially and professionally active, which provides them with greater resources to effectively manage their condition. Older patients, particularly those between the ages of 56-65 years, showed a decrease in self-efficacy, which could be related to an increased sense of helplessness or fatigue from struggling with a longer chronic illness. In addition, female patients in this study were slightly more likely to show high self-efficacy compared to male patients. Previous research has also shown that women often tend to be more concerned about their well-being and are more likely to adopt adaptive coping mechanisms, especially if they receive adequate social support (Samsudin *et al*., 2020) [15]. However, gender differences in self-efficacy are not always significant and are influenced by many other factors, such as social roles and expectations that exist in society.

Education level was also shown to have a significant influence on self-efficacy. Patients with higher education, such as those with a high school degree or higher, tend to have stronger self-efficacy. This is in line with research that shows that higher education levels often open up more opportunities for access to information, which increases understanding of their medical conditions and strengthens their confidence in undergoing treatment (Liu *et al*., 2020).

Although many patients with high self-efficacy use adaptive coping mechanisms, about 45.2% of them still use maladaptive coping mechanisms, such as denial or avoidance. Maladaptive coping mechanisms are often used by individuals who feel helpless or unable to cope with their condition, which can lead to increased stress, anxiety and depression (Mahamedi *et al*., 2020). Maladaptive coping mechanisms provide temporary relief, but do not provide long-term solutions, and in many cases even worsen the patient's emotional and physical state. In this regard, this study also found that working patients were more likely to use adaptive coping mechanisms compared to non-working patients. This may be due to the emotional and financial stability gained from work, which supports a sense of self-

control and ability to deal with stress. Unemployed patients tend to feel more isolated and lack sufficient resources to manage stress, which makes them more prone to using maladaptive coping mechanisms.

This study also found that patients with more than 3 years of CKD tend to use maladaptive coping mechanisms. Patients who have experienced the disease for a long time may feel exhausted or helpless in dealing with it, which causes them to feel unable to manage their condition and use less effective strategies such as denial or avoidance.

These findings have important implications for clinical practice in the management of patients with CKD undergoing hemodialysis. Self-efficacy is a key factor in determining the coping mechanisms used by patients, and influences how they manage their disease and their quality of life. Therefore, it is imperative for healthcare professionals to focus on improving patient self-efficacy through patient education, motivational interviewing, and self-management training. Interventions that focus on improving self-efficacy can help patients feel more confident and better able to manage their disease, which in turn improves their quality of life. In addition, interventions that can help patients overcome maladaptive coping mechanisms are also very important. Psychological support, including counseling and stress management training, can help patients adopt healthier adaptive coping mechanisms, allowing them to manage stress and challenges related to the disease more effectively. A comprehensive approach, covering both physical and psychological aspects, can improve the success of patients' treatment and their overall well-being.

Conclusion

This study confirms that self-efficacy plays an important role in determining the coping mechanisms used by GGK patients undergoing hemodialysis. Patients with high self-efficacy are more likely to use adaptive coping mechanisms, which help them manage stress and improve their quality of life. In contrast, patients with low self-efficacy more often rely on maladaptive coping mechanisms, which can worsen their emotional and physical conditions. Therefore, healthcare professionals should focus not only on the medicalbut also on the psychological aspects of patients by increasing their self-efficacy and supporting the development of adaptive coping mechanisms to improve their treatment outcomes and quality of life.

Conflict of interest

No conflicts of interest for authors.

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