



The Relationship Between Coping Mechanisms and Anxiety Levels in Hemodialysis Patients at Dr. M.M. Dunda Limboto Regional General Hospital

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ABSTRACT

Hemodialysis is a crucial procedure for patients with chronic kidney failure, but it can cause anxiety due to uncertainties related to the therapy, duration, and costs. Coping mechanisms play a role in managing this anxiety. This study aims to analyze the relationship between coping mechanisms and anxiety levels in hemodialysis patients at RSUD Dr. M.M. Dunda Limboto. Using a quantitative design with a cross-sectional approach, a sample of 30 respondents was selected through purposive sampling. Data were collected through questionnaires and analyzed using Chi-square tests. The results show that 50% of patients use adaptive coping mechanisms, while 50% use maladaptive ones. A total of 55.26% of respondents experienced moderate anxiety, while 44.74% experienced severe anxiety. The Chi-square test indicates a significant relationship between coping mechanisms and anxiety levels (p -value = 0.003, $p < 0.05$). This study suggests the need for psychological interventions to help patients develop adaptive coping mechanisms to reduce anxiety and improve their quality of life.

INTRODUCTION

Hemodialysis is performed in patients with chronic kidney disease. It is a process of altering the composition of solutes in the blood using another fluid (dialysate) through a semipermeable membrane, combining diffusion and ultrafiltration processes to remove metabolic waste from the blood (Black & Hawks, 2014). Hemodialysis is carried out using a dialyzer machine, and this procedure can reduce the risk of damage to vital organs caused by the accumulation of toxic substances. It is performed routinely throughout the patient's life, typically lasting 3 to 4 hours per session, twice a week (Umami et al., 2019).

Undergoing hemodialysis can lead to discomfort and a decreased quality of life, encompassing physical, spiritual, socioeconomic, and psychological aspects. One of the possible psychological impacts is anxiety. This anxiety may arise due to a lack of knowledge about the therapy, uncertainty regarding treatment outcomes, its effects, as well as the long duration and relatively high costs required (Nurhayati et al., 2022).

According to data from the World Health Organization (WHO), chronic kidney disease ranks 12th among the leading causes of death worldwide, causing approximately 850,000 deaths annually (PAHO, 2021). Indonesia ranks fifth in the number of chronic kidney disease (CKD) cases, with a prevalence of around 6.3% (Center for Data and Information, Ministry of Health of the Republic of Indonesia, 2019). Based on the Basic Health Research (Riskesmas), the prevalence of CKD in Indonesia increased by 0.38% in 2018. The provinces with the highest prevalence include North Kalimantan (0.64%), North Maluku (0.56%),

North Sulawesi (0.53%), followed by Gorontalo, Central Sulawesi, and West Nusa Tenggara (0.52%). In terms of gender, the prevalence is 0.42% in males and 0.35% in females. By age group, the highest prevalence occurs in individuals aged 65–74 years, at 0.82% (Karinda et al., 2019).

A preliminary study conducted by Sitepu (2021) on the relationship between anxiety levels and coping mechanisms in chronic kidney disease patients undergoing hemodialysis found that most patients experienced moderate anxiety (41.9%), with 15 respondents (34.9%) using maladaptive coping mechanisms. Additionally, among 17 respondents (39.5%) who experienced severe anxiety, 7 individuals (16.3%) used maladaptive coping mechanisms, while 10 individuals (23.2%) used adaptive coping mechanisms.

Based on initial observations conducted at Dr. M.M. Dunda Limboto Regional General Hospital, interviews with the head of the hemodialysis unit revealed that the number of patients undergoing hemodialysis therapy from January to August was 33 people (15 males and 18 females). Based on a preliminary survey conducted on August 14, 2024, interviews with 8 patients showed that 5 patients felt anxious, worried, and afraid because they had only undergone hemodialysis 1–2 times, while 3 other patients no longer felt anxiety after undergoing hemodialysis for 3–5 years. Five patients coped with their anxiety by surrendering to their condition, accepting hemodialysis as the only helpful therapy, receiving family support, and drawing closer to God. Meanwhile, 3 other patients had not yet accepted their condition and tended to blame themselves for failing to maintain their health, and some had even thought about ending their lives.

Observations also showed that 5 patients appeared restless, tense, and confused, while 3 patients appeared calm and not anxious. Furthermore, interviews with 8 hemodialysis patients revealed that 4 patients reported becoming easily angry over trivial matters, overreacting, feeling regretful and anxious, while the other 4 stated that they did not share the problems they faced. This indicates that patients undergoing hemodialysis therapy may use maladaptive coping mechanisms.

Based on the background described above, hemodialysis can lead to various negative impacts, one of which is anxiety. This anxiety may arise due to a lack of knowledge about the therapy, uncertainty regarding treatment outcomes, its effects, as well as the long duration and relatively high costs involved. Coping mechanisms and anxiety levels play an important role in the management of patients with chronic kidney disease undergoing hemodialysis. Adaptive coping mechanisms allow patients to express their feelings openly, whereas maladaptive coping mechanisms can lead to inappropriate behaviors, such as inability to accept their condition and reluctance to share with others.

Coping mechanisms and anxiety levels are therefore crucial in managing patients with chronic kidney disease undergoing hemodialysis. Patients need effective coping strategies or problem-solving approaches to reduce anxiety. Based on this background, the researcher is interested in conducting a study entitled: “The Relationship Between Coping Mechanisms and Anxiety Levels in Hemodialysis Patients at Dr. M.M. Dunda Limboto Regional General Hospital.”

RESEARCH METHODOLOGY

This study employed a quantitative research method using an analytical observational design with a cross-sectional approach. The research was conducted in a single meeting/session (Makmur, Madania, & Rasdianah, 2022). The analytical observational design was chosen because the researcher did not perform any intervention or provide treatment, but rather focused on correlational research aimed at identifying relationships between variables (Dewi & Masfuri, 2021). The cross-sectional approach involved collecting data only once at a specific point in time (Rifah, 2020).

The sample in this study consisted of hemodialysis patients in the hemodialysis unit who experienced anxiety. A total of 30 respondents were selected using the Slovin formula.

Data Analysis Techniques

Univariate Analysis

The purpose of univariate analysis was to describe and present the characteristics of each variable in the study. The descriptive statistics analyzed included frequency distributions such as gender, age, education level, employment status, marital status, coping mechanisms, and anxiety levels among patients undergoing hemodialysis therapy (Faluziah et al., 2023).

Bivariate Analysis

Bivariate analysis was used to examine the relationship or correlation between variables. The measurement scales for coping mechanisms and anxiety levels were ordinal, which fall under categorical data types. Data analysis was conducted using the Chi-Square test with a significance level of 0.05 (Sugiyono, 2019).

RESULTS

Univariate Analysis

Coping Mechanisms

Table 1. Distribution of Coping Mechanisms among Hemodialysis Patients in the Hemodialysis Unit at Dr. M.M. Dunda Regional General Hospital

No	Coping Mechanism	Total (n)	Frequency (%)
1	Adaptive	15	50.00%
2	Maladaptive	15	50.00%
	Total	30	100.00%

Based on Table 1, it can be seen that respondents with adaptive coping mechanisms totaled 15 individuals (50%), while those with maladaptive coping mechanisms also totaled 15 individuals (50%).

Anxiety Levels

Table 2. Distribution of Anxiety Levels among Hemodialysis Patients in the Hemodialysis Unit at Dr. M.M. Dunda Regional General Hospital

No	Anxiety Level	Total (n)	Frequency (%)
1	Mild Anxiety	10	33.33%
2	Moderate Anxiety	9	30.00%
3	Severe Anxiety	11	36.67%
	Total	30	100.00%

Based on Table 2, most respondents experienced severe anxiety, totaling 11 individuals (36.67%), followed by mild anxiety with 10 individuals (33.33%), and moderate anxiety with 9 individuals (30.00%).

Bivariate Analysis

The Relationship Between Coping Mechanisms and Anxiety Levels among Hemodialysis Patients in the Hemodialysis Unit at Dr. M.M. Dunda Limboto Regional General Hospital

Table 3. Distribution of the Relationship Between Coping Mechanisms and Anxiety Levels

Coping Mechanism	Mild Anxiety %	Moderate Anxiety %	Severe Anxiety %	P-Value
Adaptive	8 26.67%	5 16.67%	2 6.67%	
Maladaptive	2 6.67%	4 13.33%	9 30.00%	
Total	10 33.33%	9 30.00%	11 36.67%	0.017

Based on Table 3, respondents who used adaptive coping mechanisms and experienced mild anxiety were 8 individuals (26.67%), moderate anxiety 5 individuals (16.67%), and severe anxiety 2 individuals (6.67%). Meanwhile, respondents who used maladaptive coping mechanisms and experienced mild anxiety were 2 individuals (6.67%), moderate anxiety 4 individuals (13.33%), and severe anxiety 9 individuals (30.00%).

The results of the Chi-Square statistical test showed a p-value of 0.017, which is smaller than α (0.05). Therefore, H_0 is rejected and H_1 is accepted, indicating that there is a significant relationship between coping mechanisms and anxiety levels among hemodialysis patients in the Hemodialysis Unit at Dr. M.M. Dunda Limboto Regional General Hospital. These findings indicate a statistically significant relationship, as p-value < α .

DISCUSSION

Coping Mechanisms

Based on the results presented in Table 1, out of 30 respondents, 15 respondents (50%) used adaptive coping mechanisms, while the other 15 respondents (50%) used maladaptive coping mechanisms. The study also showed that 17 respondents were male and 13 were female.

According to the researcher, gender may influence an individual's coping mechanisms. This may be due to differences in coping strategies used by males and females. According to Anggun Sartika (2018), females tend to use coping strategies aimed at regulating emotional responses to stressful situations, whereas males are more likely to use problem-focused coping strategies. Gender differences in coping with stress are one reason why females tend to exhibit higher levels of psychological distress, including symptoms of depression and anxiety, compared to males.

Therefore, females are more likely to use emotion-focused coping strategies, which are often associated with higher levels of anxiety and depression compared to males. This finding is consistent with the study by Anggun Sartika (2018), which stated that there is a relationship between gender and individual coping mechanisms.

Anxiety Levels

Based on Table 2, respondents with severe anxiety totaled 11 individuals (36.67%), moderate anxiety 9 individuals (30.00%), and mild anxiety 10 individuals (33.33%). This indicates that the majority of hemodialysis patients experienced severe anxiety. This finding is consistent with a study by Final Anugrah Wjihatin (2023), which reported that most chronic kidney disease patients undergoing hemodialysis also experienced severe anxiety.

An individual experiences anxiety disorders when they are unable to cope effectively with stressors they face (Damanik Hamonangan, 2020). In this study, 11 respondents experienced severe anxiety due to difficulty accepting the reality that they must undergo routine hemodialysis twice a week for life. The anxiety experienced by hemodialysis patients is often chronic and may lead to both physical and psychological complications. Additionally, economic burdens such as transportation costs and reduced ability to work further contribute to patient distress.

The long-term and routine nature of hemodialysis therapy disrupts patients' daily roles and activities, leading to accumulated stress. When these problems accumulate, patients naturally experience anxiety. Feelings of sadness or stress can negatively affect various aspects of life, including daily routines (Stuart & Gail, 2016, in Rahayu, 2018).

The Relationship Between Coping Mechanisms and Anxiety Levels in Hemodialysis Patients

The Chi-Square test results showed a p-value of 0.017, which is smaller than α (0.05). Therefore, H_0 is rejected and H_1 is accepted, indicating a significant relationship between coping mechanisms and anxiety levels among hemodialysis patients at Dr. M.M. Dunda Limboto Regional General Hospital.

Based on Table 3, respondents who used adaptive coping mechanisms mostly experienced mild anxiety (8 respondents; 26.67%), followed by moderate anxiety (5 respondents; 16.67%), and severe anxiety (2 respondents; 6.67%). In contrast, respondents who used maladaptive coping mechanisms mostly experienced severe anxiety (9 respondents; 30.00%), followed by moderate anxiety (4 respondents; 13.33%), and mild anxiety (2 respondents; 6.67%).

This study is consistent with research by Nurdiyana (2021), which found that most respondents used adaptive coping mechanisms (27 respondents), while only a few used maladaptive coping (3 respondents). The majority experienced mild anxiety (66.7%), followed by moderate (23.3%) and severe anxiety (10%). The Chi-Square test in that study also showed a significant relationship ($p = 0.000$).

Some respondents in this study used maladaptive coping due to negative self-concepts, such as withdrawal, lack of social interaction, reluctance to share problems, and the prolonged duration of hemodialysis treatment, which requires continuous adjustment (Dame et al., 2022).

From the anxiety questionnaire results, many respondents reported symptoms such as irritability, fatigue, dizziness, sleep disturbances, and neck or head pain. Many also reported significant lifestyle changes after being diagnosed with chronic kidney disease. This is in line with Mayuda (2017), who stated that patients often struggle to adapt at the beginning of hemodialysis therapy, have difficulty accepting their illness, experience complications, and face disruptions in daily activities due to lifelong treatment (Wulandari & Widayati, 2020).

According to Sipayung (2021), anxiety disorders develop when individuals lack effective coping mechanisms to deal with life stressors. Patients need time to adapt to the new routine of undergoing hemodialysis twice a week, especially since initial reactions to kidney failure diagnosis often include anger and psychological distress. However, patients who successfully adapt tend to experience reduced anxiety levels over time (Dwi & Santoso, 2018; Atimah & Lila Maria, 2022).

Anxiety in chronic kidney disease patients undergoing hemodialysis requires proper adjustment and management so that individuals can develop adaptive coping. Effective coping mechanisms help reduce anxiety and allow energy to be directed toward recovery. Conversely, ineffective coping leads to increased tension, imbalance, and heightened psychological and physiological responses (Sula, 2021).

Coping mechanisms originate from the ego and are often referred to as defense mechanisms, such as sublimation and acceptance. Respondents with adaptive coping mechanisms tend to use constructive behaviors, such as acceptance, which helps reduce tension and directly impacts lowering anxiety levels (Sula, 2021).

Maladaptive coping behaviors, such as panic responses, may arise from an individual's perception of their situation. If individuals perceive their condition as manageable, adaptive coping is more likely to develop. However, if the situation is perceived as threatening, maladaptive coping may occur (Lazarus & Folkman in Dian Istiana et al., 2021).

This suggests that individuals may perceive chronic kidney disease and hemodialysis as threatening and stressful conditions. To prevent maladaptive coping, it is important to identify coping resources that help individuals adapt to stressors. One important coping resource is social support.

Social support plays a crucial role in developing effective or adaptive coping mechanisms. It helps protect individuals from the negative effects of stress. Therefore, increasing social support can reduce maladaptive coping behaviors and improve psychological well-being.

CONCLUSION

Adaptive coping mechanisms were found in 19 respondents (50%), while 19 respondents (50%) used maladaptive coping mechanisms. The respondents in this study mostly experienced moderate anxiety, totaling 21 individuals (55.26%), while 17 individuals (44.74%) experienced severe anxiety. There was a significant relationship between coping mechanisms and anxiety levels among patients in the hemodialysis unit at Dr. M.M. Dunda Limboto Regional General Hospital, with the Chi-square test showing a p-value of 0.003.

SUGGESTIONS

For institutions, it is expected to further improve students' knowledge regarding coping mechanisms and anxiety levels in hemodialysis patients.

For respondents and hemodialysis nurses, it is expected that nurses can help patients maintain adaptive coping mechanisms in managing anxiety during hemodialysis, such as increasing spiritual practices (praying and surrendering to God), communicating with family, discussing problems with professionals, and finding meaning from the problems they face.

For future researchers, it is recommended to explore other factors that may contribute to anxiety in patients with chronic kidney disease undergoing hemodialysis.

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