

The Relationship Between Self-Efficacy, Duration of Hemodialysis, Therapy Adherence, and Quality of Life in Patients with Chronic Kidney Disease

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ABSTRACT

Introduction : Chronic Kidney Disease (CKD) is a long-term illness with an increasing number of cases each year, including at Depati Bahrin Regional Hospital, which has recorded a rising trend of patients undergoing hemodialysis year after year. This condition has a significant impact on the physical, psychological, and social aspects of patients, thereby affecting their quality of life. Factors such as self- efficacy, duration of undergoing hemodialysis, and adherence to therapy play an important role in maintaining or improving the patients' quality of life.

Objective: This study aims to determine the relationship between self-efficacy, duration of undergoing hemodialysis, and adherence to hemodialysis therapy with the quality of life of chronic kidney failure patients in the Hemodialysis Unit of Depati Bahrin Regional Hospital, Bangka Regency

Method: The study was conducted in July 2025 using a quantitative approach with a cross-sectional design. A total of 65 respondents were selected using purposive sampling. Data were collected using the CKD Self-Efficacy (CKD-SE) and KDQOL-SF questionnaires, then analyzed bivariate.

Result: The results showed a significant relationship between self-efficacy ($p=0.000$), duration of hemodialysis ($p=0.000$), and adherence to therapy ($p=0.039$) with the patients' quality of life. Patients with high self-efficacy, who had been undergoing hemodialysis for more than one year, and who adhered to the therapy tended to have a better quality of life.

Conclusion: This study recommends that healthcare providers strengthen their educational role and psychosocial support to improve patients' self-efficacy and adherence, thereby enhancing the quality of life of chronic kidney failure patients optimally.

Keywords: Adherence, Chronic Kidney Disease, Duration of Hemodialysis, Self-Efficacy, Quality of Life

Introduction

Chronic Kidney Failure (CKD) is a progressive disorder of kidney function that can be long-term or persistent, causing the accumulation of metabolic waste (toxic uremia), preventing the kidneys from meeting their normal needs. Risk factors for CKD include diabetes mellitus, hypertension, and lifestyle changes (Sarastika et al., 2019). According to Sarastika et al. (2019), kidney failure that progresses slowly and can be long-term or persistent causes the accumulation of metabolic waste (toxic uremia), which prevents the kidneys from meeting their normal needs. Filtering and eliminating metabolic byproducts is a crucial function of the kidneys. Uremia, a disorder caused by an imbalance in the body caused by metabolic waste (especially urea) that accumulates due to decreased kidney function, is a medical emergency. Furthermore, it can potentially lead to the accumulation of electrolytes and fluids in the body and disruption of the body's fluid balance. The decline in kidney function over time defines chronic kidney disease (CKD). This causes the gradual degradation and eventual destruction of kidney tissue. Kidney failure is a condition in which kidney function gradually declines due to kidney damage (Putri et al., 2023). Due to its potentially fatal consequences, this condition requires immediate medical intervention. Patients suffering from chronic kidney insufficiency can receive relief through hemodialysis. While hemodialysis cannot completely restore kidney function or cure the disease, it can reduce the likelihood of death (Nisa, 2021).

According to statistics compiled by the World Health Organization (WHO), chronic kidney failure affected approximately 15% of the global population in 2019 and was responsible for more than 1.2 million deaths. There were 254,028 cases of chronic kidney failure-related deaths reported in 2020. Furthermore, that number jumped to nearly 843.6 million in 2021. Chronic kidney failure is projected to account for approximately 41.5% of all deaths by 2040, according to projection studies. Chronic kidney failure is the twelfth leading cause of death, according to these staggering figures (Shadrina et al., 2024).

Chronic kidney disease (CKD) is a common condition in Indonesia, affecting 739,208 people (or approximately 3.8% of the population), according to data collected in 2018 from the Basic Health Research (Riskesdas) of the Ministry of Health of the Republic of Indonesia. This figure represents an increase compared to the 2% figure from the 2013 Riskesdas. According to the 2019 Global Burden of Disease (GBD) report from the Institute for Health Metrics and Evaluation (IHME), CKD ranks first among the ten leading causes of death in Indonesia. The incidence of doctor-diagnosed chronic kidney disease among individuals aged 15 years and older in Indonesia shows that Bangka Belitung Province recorded a prevalence of 0.16%, equivalent to 3,451 people, ranking 28th in Indonesia (Indonesian Health Survey in 2023).

According to statistics from the Bangka Belitung Islands Provincial Health Office (2022), 8,521 people were treated for chronic kidney failure and required hemodialysis. In 2020, 4,801 patients were treated by healthcare professionals for chronic kidney failure and underwent hemodialysis; in 2021, 3,844 patients; and in 2022, 3,449 patients, according to data collected from the Bangka Regency Health Office and Depati Bahrin Sungailiat Regional Hospital. There were 3,863 patients in 2023 and 4,217 in 2024. The number of people diagnosed with kidney failure has steadily increased over the past three years, according to the data. Largely due to the high cost of care and treatment, kidney failure remains a

significant health problem worldwide, despite the lack of a cure. When more conservative approaches fail to achieve the desired results, patients may require hemodialysis as an additional intervention. Decreased quality of life, particularly in the psychological and physiological domains, is a common consequence of the functional changes experienced by patients undergoing hemodialysis for chronic kidney failure (Brown et al., 2021). In addition, individuals with chronic kidney disease (CKD) will face various changes in their social interactions as a consequence of this decreased quality of life (Hagita et al., 2020).

The length of time a patient undergoes hemodialysis has a significant impact on their quality of life. According to research published in the British Journal of Health Psychology, patients with kidney failure who have recently started dialysis have a lower understanding of their disease. Dialysis patients who have been on therapy for some time have a better understanding than new patients. Patients with a long history of dialysis also show a parabolic pattern of increasing understanding. Dialysis patients report a higher likelihood of experiencing daily dialysis-related impacts compared to individuals who have not been on dialysis for a long time (Permata Sari et al., 2022). Longer hemodialysis programs are associated with a higher quality of life for patients with chronic kidney disease, according to research by Devi and Rahman (2022). Patients who undergo hemodialysis for more than one year have a better overall quality of life, according to this study. Saputra et al. (2023) examined the quality of life of patients with chronic kidney failure and found that quality of life correlated with the duration of hemodialysis. Furthermore, research by Pakpahan et al. (2024)

showed a relationship between the length of time patients spend on hemodialysis and their overall quality of life. A person's belief in their own ability to complete a task, their level of intrinsic motivation, and the extent to which they act on that belief are indicators of their quality of life (Sary & Ghina, 2022). A person's level of self-efficacy influences their thoughts, motivation, and actions (Fatmawati, 2022). Recent research (Nurhayati et al., 2022) found that self-efficacy correlates with the quality of life of hemodialysis patients with chronic kidney failure. High levels of self-efficacy are associated with improved quality of life in hemodialysis patients with chronic kidney failure, according to research by Welly and Rahmi (2021).

Based on a preliminary survey conducted by researchers through interviews with five patients on December 10, 2024, in the hemodialysis room at Depati Bahrin Sungailiat Regional Hospital, three patients stated they were no longer able to continue the therapy, but were forced to continue the therapy due to fear of dying, like other patients who failed to comply with hemodialysis treatment. Meanwhile, two patients expressed anxiety and stress about undergoing the therapy, and wanted to give up. Despite efforts to improve their quality of life, many hemodialysis patients continue to face significant challenges, according to preliminary research, data, and interviews.

Patients undergoing prolonged hemodialysis experience a lack of control over daily and social activities, loss of independence, early retirement, and financial stress. This can lead to psychological distress. One way to alleviate psychological distress is through self-efficacy. Self-efficacy helps determine how much effort a person expends in a behavior, how long they will persist in the face of obstacles, and how resilient they are in the face of adverse situations. A lack of self-efficacy in patients tends to decrease their quality of life (Khoiriyah et al., 2020). (Triana et al., 2021) explained that their research findings showed that patients

undergoing hemodialysis twice a week had a better quality of life compared to patients undergoing hemodialysis once a week.

Based on the background and identified phenomena, the researchers were interested in conducting a study entitled "The Relationship between Self-Efficacy, Hemodialysis Duration, and Hemodialysis Adherence to Quality of Life in Chronic Kidney Failure Patients in the Hemodialysis Ward at Depati Bahrin Regional Hospital, Sungailiat, Bangka Regency."

Objective

This study aims to determine the relationship between self-efficacy, duration of undergoing hemodialysis, and adherence to hemodialysis therapy with the quality of life of chronic kidney failure patients in the Hemodialysis Unit of Depati Bahrin Regional Hospital, Bangka Regency

Method

The study was conducted in July 2025 using a quantitative approach with a cross-sectional design. A total of 65 respondents were selected using purposive sampling. Data were collected using the CKD Self-Efficacy (CKD-SE) and KDQOL-SF questionnaires, then analyzed bivariately.

Results

Table 1. Demographic Characteristics of Respondents

Responden		
Gender	Total	Percentage
Male	36	55,4%
Female	29	44,6%
Ages		
20-30	5	7,7%
31-40	17	26,2%
>40	43	66,2
Education		
Yunior high school	10	15,4%
Senior High school	44	67,7%
Universuty	11	16,9
Total	65	100%

Table shows that 36 (55.4%) respondents were male, outnumbering the female respondents. Shows that 43 (66.2%) respondents were over 40 years old, compared to those aged 31–40 and 20–30. shows that 44 (67.7%) respondents had a high school diploma or equivalent, compared to those with a bachelor's degree or junior high school diploma.

a. Relationship between Self-Efficacy and Quality of Life

To determine whether there is a relationship between self-efficacy and quality of life in patients undergoing hemodialysis at Depati Bahrin Regional Hospital in 2025, the analysis results are shown in Table.

Table 2. Relationship between Self-Efficacy and Quality of Life

Self Efficacy	Quality Of Life						P value	POR CI (95%)
	Medium		High		Total			
	n	%	n	%	n	%		
Medium	26	86,7	4	23,3	30	100	0,000	0,133 (0,054-0,332)
High	0	0	35	100	35	100		
Total	26	40	39	60	65			

Table shows that respondents with high self-efficacy also had a high quality of life, as respondents with both high self-efficacy and high quality of life were dominant, representing 35 respondents.

Respondents with high quality of life (35 respondents) had higher self-efficacy than those with moderate quality of life. Meanwhile, respondents with moderate quality of life (26 respondents) had higher self-efficacy than those with high quality of life. The chi-square test between self-efficacy and quality of life showed a p-value of $0.000 < \alpha (0.050)$, indicating a highly significant relationship between self-efficacy and quality of life in patients undergoing hemodialysis. The Prevalence Odds Ratio (POR) value is 0.133 with a 95% Confidence Interval (CI) = (0.054–0.332), which shows that patients with moderate self-efficacy have a tendency of 0.13 times or 87% lower to have a high quality of life compared to patients with high self-efficacy.

The Relationship Between Length of Hemodialysis and Quality of Life

Table 3 Relationship Between Length of Hemodialysis and Quality of Life

Length of Hemodialysis	Quality Of Life				Total		<i>P value</i>	POR CI (95%)
	medium		High					
	n	%	n	%	n	%		
≤1 years	25	64,1	14	35,9	39	100	0,000	44,643
>1 years	1	3,9	25	96,1	26	100		(5,450-365,705)
Total	26	40	39	60	65			

Based on Table above, it is explained that respondents who have a high quality of life are patients who have undergone hemodialysis for >1 year. Respondents who have a moderate quality of life with a duration of hemodialysis ≤1 year are 25 respondents (64.1%) more than respondents who have a high quality of life. Meanwhile, respondents who have a high quality of life with a duration of hemodialysis >1 year are 25 respondents (96.1%) compared to respondents who have a moderate quality of life. The results of the Chi-Square

statistical test between the duration of hemodialysis and quality of life show a p value = 0.000 < α (0.050), which means there is a very significant relationship between the duration of hemodialysis and quality of life. The Prevalence Odds Ratio (POR) value is 44.643 with a 95% Confidence Interval (CI) = (5.450–365.705), which shows that patients who have just undergone hemodialysis for ≤ 1 year have a 44 times greater tendency to have a moderate quality of life compared to patients who have undergone hemodialysis for >1 year.

The Relationship between Compliance with Hemodialysis and Quality of Life

Table 4 Relationship Between Compliance and Quality of Life

Compliance with Hemodialysis	Quality Of Life						<i>P value</i>	POR CI (95%)
	medium		High		Total			
	n	%	n	%	n	%		
NotCompliance	6	24	19	76	25	100	0,039	3,167 (1,046-9,585)
Compliance	20	50	20	50	40	100		
Total	26	40	39	60	65			

Table shows that respondents with a high quality of life were highly compliant with hemodialysis. Twenty (50%) more respondents with a high quality of life were compliant with hemodialysis than non-compliant respondents. Meanwhile, 20 (50%) more respondents with a moderate quality of life were compliant with hemodialysis than non-compliant respondents.

The chi-square statistical test between quality of life and hemodialysis adherence showed a p-value of $0.039 < \alpha$ (0.050), indicating a significant relationship between quality of life and hemodialysis adherence. The prevalence odds ratio (POR) was 3.167 with a 95% confidence interval (CI) of (1.046–9.585). Concluded that patients with a high quality of life were 3.1 times more likely to be compliant with hemodialysis than those with a moderate quality of life.

Discussion

Self-efficacy is an individual's belief in their ability to organize and carry out the actions necessary to achieve specific goals. This concept was developed by Bandura in his book Social Cognitive Theory and Its Implementation in Markeso Mudo's Garingan Ludrukan Monologue by Suryandoko and Welly (2023). A person's perception of their abilities significantly influences behavior, motivation, and persistence in facing difficult situations, including long-term therapy such as hemodialysis. Individuals with high self-efficacy tend to be more optimistic, independent, and consistent in their treatment because they believe that their actions directly impact their health outcomes.

Researchers believe that the effectiveness of self-efficacy in influencing adherence is also related to social support and prior experience with therapy. Patients who have experienced improvements in their condition after diligently undergoing hemodialysis are more likely to develop positive perceptions of the therapy, thus strengthening their self-efficacy. Coupled with support from family, healthcare professionals, and good access to

information, patients tend to be more confident and consistent in their treatment. Thus, the results of this study emphasize the importance of strengthening self-efficacy as part of psychosocial interventions for hemodialysis patients. This intervention can be implemented through motivational counseling, coping strategy training, or audiovisual-based education that can improve patients' self-perception. As stated by Lubis (2019), confidence in one's abilities is the foundation for healthy decision-making and key to success in chronic disease therapy. The researchers assume that patients new to therapy have lower adherence rates due to the ongoing physical and emotional adjustment phase. Fear, discomfort during procedures, and a lack of understanding of the importance of adherence can lead to decreased motivation. Experience and learning over time significantly influence changes in health attitudes and behaviors (Oktavilantika et al., 2023).

These findings emphasize that intensive support and ongoing education are crucial in the initial phase of hemodialysis therapy. New patients need time and guidance to adjust to the lifestyle changes and medical demands that accompany therapy. The role of healthcare professionals in providing comprehensive and empathetic education is crucial for the long-term success of patient therapy.

Theoretically, these results confirm that quality of life is not the sole determinant of adherence but must be understood within a broader context, including risk perception, disease awareness, and social support. Individuals with a high quality of life who lack an understanding of the importance of adherence may exhibit behaviors that conflict with clinical expectations. Researchers also assume that adherence to hemodialysis is strongly influenced by the patient's internal motivation and perceived benefits of therapy. Patients who have had negative experiences or are fatigued by the routine of hemodialysis may lose motivation even if their quality of life is generally good. In this study, the majority of patients were of productive age and had secondary to lower educational backgrounds, which could influence how they interpret quality of life and adherence.

Thus, these results illustrate that a high quality of life does not always guarantee adherence to therapy, especially if it is not accompanied by a good understanding and awareness of the medical consequences of non-adherence. Therefore, educational and psychosocial interventions are still needed, even for patients with a high quality of life, to ensure they understand the importance of undergoing hemodialysis regularly.

Conclusion

This study found significant associations between quality of life and several factors among patients undergoing hemodialysis at Depati Bahrin Hospital in 2025. Quality of life was significantly associated with adherence to hemodialysis therapy ($p = 0.039$), self-efficacy ($p < 0.001$), and the duration of hemodialysis treatment ($p < 0.001$). These findings suggest that improving patients' adherence to therapy and strengthening self-efficacy, while considering the duration of treatment, may contribute to better quality of life among individuals receiving hemodialysis. Future studies are recommended to employ longitudinal or interventional designs to further examine causal relationships and evaluate strategies to improve patients' quality of life.

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