

SELF-MANAGEMENT AND QUALITY OF LIFE AMONG CHRONIC KIDNEY DISEASE PATIENTS UNDERGOING HEMODIALYSIS

Sherli Amelia Putri Prasetya^a | Rifatul Fani^{b*} | Riki Ristanto^c

^{a,b,c}Department of Nursing, Faculty of Health Science, Institute of Technology Science and Health dr Soepraoen Kesdam V/Brawijaya, Malang, Indonesia

*Corresponding Author: rifatul@itsk-soepraoen.ac.id

ARTICLE INFORMATION

Article history

Received (10 January 2026)

Revised (26 April 2026)

Accepted (30 April 2026)

Keywords

chronic kidney disease,
hemodialysis, quality of life, self-
management

ABSTRACT

Introduction: Chronic Kidney Disease (CKD) is a progressive and irreversible condition that requires long-term hemodialysis therapy and significantly affects patients' physical, psychological, and social well-being. Effective self-management is essential for helping patients manage their condition and maintain an optimal quality of life.

Methods: This study used a quantitative correlational design with a cross-sectional approach. This study was conducted at the Hemodialysis Unit of R.T. Notopuro Sidoarjo Regional Hospital, a secondary referral hospital in East Java, Indonesia. The population of patients undergoing hemodialysis was 378 patients. The sample was selected using a purposive sampling technique based on inclusion and exclusion criteria, resulting in a sample of 194 respondents. Data were collected using the Hemodialysis Self-Management Instrument (HDSMI-18) and the Kidney Disease Quality of Life questionnaire (KDQOL-36). Data were analyzed using univariate analysis to describe the characteristics of respondents and study variables, and bivariate analysis using the Spearman rank correlation test to examine the relationship between self-management and quality of life.

Results: Self-care was significantly associated with symptom control ($r = 0.190$; $p = 0.008$), effects of kidney disease ($r = 0.412$; $p < 0.001$), disease burden ($r = 0.322$; $p < 0.001$), and mental quality of life ($r = 0.497$; $p < 0.001$). Problem solving was associated with effects of kidney disease ($r = 0.220$; $p = 0.002$) and mental quality of life ($r = 0.158$; $p = 0.027$). Emotional management was related to physical ($r = 0.147$; $p = 0.041$) and mental quality of life ($r = 0.147$; $p = 0.040$). Overall self-management was associated with effects of kidney disease ($r = 0.296$; $p < 0.001$), disease burden ($r = 0.171$; $p = 0.017$), and mental quality of life ($r = 0.277$; $p < 0.001$), while partnership showed no significant associations.

Conclusions: There is a statistically significant relationship between self-management and quality of life among patients with CKD undergoing hemodialysis. Nevertheless, the strength of the relationship varies across dimensions, indicating that self-management is an important contributing factor but not the sole determinant of patients' quality of life.

Introduction

Chronic Kidney Disease (CKD) is a progressive and irreversible decline in kidney function that cannot be restored and is accompanied by various clinical symptoms resulting from renal damage. CKD is a chronic condition with a high global prevalence and is a major contributor to increased morbidity and mortality rates (Solihatn, 2020). Patients with CKD undergoing hemodialysis face numerous health challenges that require adaptive disease management strategies, including fluid restriction, dietary regulation, medication adherence, and physical



activity management. Poor adherence to self-management is a significant factor contributing to hemodialysis complications, treatment failure, and frequent hospitalization.

In addition to physical complications, patients often experience psychological and social problems such as decreased self-confidence, social isolation, emotional distress, and limitations in daily activities. These conditions substantially reduce quality of life and may negatively affect long-term survival. Given the increasing number of patients requiring long-term hemodialysis and the substantial impact of CKD on both survival and quality of life, identifying modifiable factors such as self-management has become an urgent clinical priority. Without adequate self-management support, patients remain at high risk for complications, poor treatment outcomes, and diminished well-being. Therefore, enhancing self-management capacity is a crucial strategy to reduce complications and optimize the quality of life chronic kidney disease sufferers undergoing hemodialysis (Sari et al., 2023). The WHO reported that more than 843 million people worldwide had chronic by CKD in 2021, with mortality projected to increase by 41.5% by 2040, placing CKD among the leading causes of death globally (Ilahiyan et al., 2024). In Indonesia, data from the Indonesian Health Survey showed that the prevalence of physician-diagnosed CKD reached 0.18% in 2023, with a considerable proportion of patients undergoing or having undergone hemodialysis, particularly in East Java (Widiyawati & Rahmanda, 2023). In 2024, the prevalence of chronic kidney disease patients at R.T. Notopuro Regional Hospital in Sidoarjo was recorded at 33,154 people. Meanwhile, in 2025, from January to September, the number of patients reached 25,586 people.

Hemodialysis is a renal replacement therapy that utilizes a dialyzer machine with a semi-permeable membrane to remove metabolic waste products and excess fluid from the blood through diffusion and ultrafiltration processes using dialysate solution. This therapy is lifelong and is generally performed twice per week, with each session lasting approximately 3–4 hours (Handayani & Rahmayati, 2017). Patients with CKD who undergo long-term hemodialysis face complex physical, psychological, social, and economic challenges. Regular dialysis schedules, lifelong dependence on dialysis machines, strict dietary and fluid restrictions, and multiple medications often lead to fatigue, emotional distress, reduced social participation, and decreased functional capacity, all of which contribute to impaired quality of life (Wulandari et al., 2024).

Quality of life is a multidimensional concept that reflects the balance of physical, psychological, and social well-being. Among patients with CKD undergoing hemodialysis, quality of life is influenced by age, sex, physical condition, psychological status, as well as social and economic factors. Although patients of productive age may demonstrate higher motivation toward treatment adherence, they remain at risk of cognitive impairment and reduced social interaction, which may negatively affect their quality of life (Azira et al., 2023). Evidence suggests that many of these challenges are closely related not only to clinical factors but also to patients' ability to actively manage their disease in daily life. Self-management plays a crucial role in enabling patients to adhere to treatment recommendations and cope with the long-term burden of hemodialysis.

However, previous studies have mainly focused on overall self-management scores without exploring specific dimensional associations with quality-of-life domains. Furthermore, evidence from secondary referral hospitals in Indonesia remains limited. This lack of multidimensional and context-specific analysis limits the development of targeted interventions tailored to the needs of patients undergoing hemodialysis. Therefore, further investigation is necessary to clarify how specific dimensions of self-management are associated with different domains of quality of life in this population.

Self-management take a central role in the care of chronic diseases and refers to the patient's ability to organize the phenomena, treatment regimens, lifestyle changes, and psychosocial consequences of the disease. In patients with CKD undergoing hemodialysis, self-



management includes self-care behaviors, problem solving, emotional management, and collaboration with healthcare providers. Adequate self-management has been shown to improve treatment adherence, reduce complications, and enhance patients' sense of control over their illness ((Sulistyarningsih et al., 2022); (Malinda et al., 2022)).

Previous research consistently demonstrate a significantly association among self-management and quality of life hemodialysis sufferers; however, most studies focus on overall scores and provide limited analysis of specific self-management dimensions with quality-of-life domains (Rohmawati et al., 2023). In addition, evidence from local healthcare settings remains limited, particularly in secondary referral hospitals such as RSUD R. T. Notopuro Sidoarjo, where CKD cases remain high and contextual factors may influence patients' self-management practices.

Therefore, the following research intended to analyzed the correlation among self-management with quality of life patients with CKD undergoing hemodialysis at RSUD R. T. Notopuro Sidoarjo. Understanding this correlation is expected to provide evidence-based insights for nursing interventions focused on strengthening self-management abilities, thereby supporting better quality of life outcomes for patients undergoing long-term hemodialysis.

Methods

Research Design

The following research utilized descriptive correlational design through a cross-sectional approach. The design of the following research intended to analyze the correlation among self-management with quality of life in CKD patients undergoing hemodialysis. The research was conducted at RSUD R. T. Notopuro Sidoarjo, Indonesia, a regional public hospital that provides routine hemodialysis services.

Population and Sample

The population of this study consisted of all regular Chronic Kidney Disease (CKD) patients undergoing routine hemodialysis at the Hemodialysis Unit of RSUD R.T. Notopuro Sidoarjo. Based on hospital records, the average number of patients receiving hemodialysis per month during the study period was 378 patients (N = 378). The required sample size was calculated using the Slovin formula to determine the minimum number of respondents needed to ensure representativeness:

$$n = \frac{N}{1+N \cdot e^2}$$
$$n = \frac{378}{1 + (378 \cdot 5\%^2)}$$
$$n = \frac{378}{1 + (378 \cdot (0,05^2))}$$
$$n = \frac{378}{1 + (378 \cdot 0,0025)}$$
$$n = \frac{1,945}{378}$$
$$n = \frac{1,945}{1,945}$$
$$n = 194$$

where:

n = required sample

N = total population (378 patients)

e = margin of error (5% or 0.05)

Thus, the minimum required sample size for this study was 194 respondents.

This study used a purposive sampling technique to select participants based on predetermined inclusion and exclusion criteria.

Inclusion Criteria:



- CKD patients regularly undergoing hemodialysis
- Aged over 18 years
- Able to read and write or understand the questionnaire
- Fully conscious (*compos mentis*)
- Undergoing hemodialysis for more than three months

Exclusion Criteria:

- Patients unwilling to participate
- Patients with communication impairments

A total of 194 respondents who met these criteria were successfully recruited and included in the final analysis.

Instruments

Data were collected using structured self-administered questionnaires. Self-management was measured using the Hemodialysis Self-Management Instrument-18 (HDSMI-18), which consists of 18 items across four domains: partnership, self-care, problem-solving, and emotional management. Responses are rated on a four-point Likert scale. The Indonesian version of the HDSMI-18 has demonstrated excellent content validity, with a Scale Content Validity Index (S-CVI) of 0.92 and Item Content Validity Index (I-CVI) values ranging from 0.78 to 1.00. Construct validity testing showed item validity coefficients exceeding 0.90, indicating very strong correlations. The instrument has also demonstrated good internal consistency, with Cronbach's alpha coefficients ranging from 0.82 to 0.88, reflecting strong reliability (Mailani et al., 2023).

Quality of life was assessed using the Indonesian version of the Kidney Disease Quality of Life-36 (KDQoL-36), which includes domains of symptom/problem list, effects of kidney disease, burden of kidney disease, and physical and mental health components. Construct validity testing demonstrated significant item-total correlations across all subscales ($r > 0.60$, $p < 0.001$), indicating strong construct validity. The instrument has shown good internal consistency, with Cronbach's alpha coefficients ranging from 0.706 to 0.886 (Supriyadi et al., 2019). In addition, test-retest analysis indicated stable measurements with no significant differences between administrations ($p > 0.05$). These findings are consistent with validation studies conducted in other countries, including Thailand, China, and India.

Since both instruments had been previously translated, validated, and widely used in Indonesian CKD populations, additional reliability testing was not conducted in the current study. The use of established instruments with documented psychometric properties ensured measurement validity and consistency.

Data Analysis

Statistical applications were used to analyze the data. To describe respondents' demographic characteristics, self-management levels, and quality of life using univariate analysis. Spearman correlation testing was used in bivariate analysis to establish the correlation among self-management and quality of life. This test was chosen because the data did not have a normal distribution referring on the Kolmogorov-Smirnov normality test. A p-value of less than 0.05 constitutes statistical significance.

Results

Table 1 Respondent Characteristics

Characteristics	Category	Frquency	Percentage
Age (years)	21-39	21	10.6 %
	40-49	41	21.1 %



	≥50	132	67.9%
BW before HD (kg)	<50 kg	30	15.3
	50–59 kg	54	27.9
	60–69 kg	64	32.7
	≥ 70 kg	46	23.7
BW after HD (kg)	< 50 kg	30	15.2
	50–59 kg	41	20.9
	60–69 kg	72	37
	≥ 70 kg	51	26.5
Height	< 150 cm	17	8.6
	150–159 cm	62	31.9
	160–169 cm	78	40.1
	≥ 170 cm	37	19
IDWG	< 1,0 kg	27	13.9
	1,0–2,0 kg	118	60.8
	>2,0 kg	49	24.9
Gender	Male	109	56.2
	Female	85	43.8
Last education	Not in school	2	1.0
	Elementary School	19	9.8
	Middle School	29	14.9
	High School	78	40.2
	College	66	34.0
Occupation	Civil Servant/Military/Police	23	11.9
	Private Sector	42	21.6
	Self-Employed	16	8.2
	Retired	23	11.9
	Other	90	46.4
Income	<UMR	115	59.3
	>UMR	79	40.7
Distance from home to hospital	≤ 5 km	78	40
	6–10 km	58	29.8
	>10 km	58	29.8
Duration of HD	< 1 year	29	14.9
	1–5 years	130	67.0
	>5 years	35	18.0
Duration of HD	4 hours	189	97.4
	5 hours	5	2.6
Frequency of HD	1x/weeks	30	15.5
	2x/weeks	163	84.0
	3x/weeks	1	0.5
Kt/V	Missing sistem	194	100.0
Conditional Health History	None	94	48.5
	Smoking	43	22.2
	Drinking alcohol	1	0.5
	Drinking soda	17	8.8
	Use of unsupervised medication	9	4.6
	Other	30	15.5
Pre-HD Medical History	None	18	9.3
	Hypertension	135	69.2
	Diabetes mellitus	22	11.3
	Other	19	9.8



The data analysis indicated that the most of the respondents were aged ≥ 50 years (67.9%), male (56.2%), and had a moderate to high level of education. Most respondents were engaged in non-formal occupations or categorized as others (46.4%). The majority had an revenue below the regional minimum wage (59.3%), with varying distances among their residences to the hospital.

Clinically, most respondents had pre- and post-hemodialysis body weight in the range of 60–69 kg, while interdialytic weight gain was predominantly within the 1.0–2.0 kg category (60.8%). Respondents' height was relatively homogeneous, with most ranging from 150 to 169 cm. In terms of treatment characteristics, the majority had been undergoing hemodialysis for 1–5 years (67.0%), with a session duration of 4 hours (97.4%), and a frequency of twice per week in 163 respondents (84.0%).

Regarding lifestyle history, nearly half of the respondents reported no risky habits, while hypertension was the most common comorbidity (69.2%). Overall, the respondents' characteristics reflected diverse demographic, socioeconomic, and clinical profiles, which provided an important foundation for analyzing the correlation among self-management with quality of life patients with CKD undergoing hemodialysis.

Table 2 Distribution of Self Management Levels

Self management categories	Frequency	Percentage %
Poor	12	6.2
Moderate	105	54.1
Good	77	39.7
Total:	194	100.0

Based on Table 2, the most of the patients with CKD undergoing hemodialysis had a moderate level of self-management, accounting for 105 respondents (54.1%). Furthermore, 77 respondents (39.7%) demonstrated a good level of self-management, while only 12 respondents (6.2%) were classified as having a poor level. These findings indicate that most patients have been able to apply self-management practices at an adequate level; however, further efforts are still needed to enhance self-management abilities so that a greater proportion of patients can achieve an optimal level of self-management.

Table 3 Distribution of Quality of Life Levels

Quality of life categories	Frequency	Percentage %
Very bad	0	0
Bad	28	14.4
Average	164	84.5
Good	2	1.0
Very good	0	0
Total:	194	100.0

Based on Table 3, the data analysis showed that the most of the patients with chronic kidney disease undergoing hemodialysis had a moderate level of quality of life, accounting for 164 respondents (84.5%). Meanwhile, 28 respondents (14.4%) were classified as having poor quality of life, and only 2 respondents (1.0%) had a good quality of life. No respondents were found in the very poor or very good categories; therefore, it can be concluded that the overall quality of life of patients undergoing hemodialysis was generally at a moderate level.



Table 4 Spearman Correlation Test Results

Self-Management	Quality of Life									
	Symptom Problem List		Effects of Kidney Disease		Burden of Kidney Disease		SF-12 Physical Composite		SF-12 Mental Composite	
	r	p	r	p	r	p	r	p	r	p
Partnership	-0.004	0.957	0.081	0.264	-0.025	0.734	-0.010	0.893	0.007	0.921
Self-care	0.190	0.008*	0.412	0.000*	0.322	0.000*	0.020	0.782	0.497	0.000*
Problem Solving	0.090	0.214	0.220	0.002*	0.110	0.126	0.116	0.106	0.158	0.027*
Emotional Management	0.061	0.402	0.133	0.065	0.130	0.071	0.147	0.041*	0.147	0.040*
Total Self-management	0.118	0.100	0.296	0.000*	0.171	0.017*	0.083	0.252	0.277	0.000*

Note: (*) indicates significant results.

Referring to the results of the Spearman correlation test shown in Table 4, the analysis shows that the correlation among self-management dimensions with quality of life in CKD sufferers varies across domains. In the symptom problem list domain, only self-care showed a significantly connection ($r = 0.190$; $p = 0.008$). In the impact of kidney disease domain, significant correlations were observed with self-care ($r = 0.412$; $p < 0.001$), problem solving ($r = 0.220$; $p = 0.002$), and total self-management ($r = 0.296$; $p < 0.001$). Furthermore, in the burden of kidney disease domain, significant correlations were found for self-care ($r = 0.322$; $p < 0.001$) and total self-management ($r = 0.171$; $p = 0.017$).

In the SF-12 Physical Composite domain, only emotional management demonstrated a significant correlation ($r = 0.147$; $p = 0.041$). Meanwhile, in the SF-12 Mental Composite domain, self-care ($r = 0.497$; $p < 0.001$), problem solving ($r = 0.158$; $p = 0.027$), emotional management ($r = 0.147$; $p = 0.040$), and total self-management ($r = 0.277$; $p < 0.001$) indicated significant correlations, whereas partnership was not significantly associated.

Discussion

Characteristics of Patients with Chronic Kidney Disease Undergoing Hemodialysis

The characteristics of patients with Chronic Kidney Disease (CKD) undergoing hemodialysis include age, sex, education level, occupation, and duration of hemodialysis, as demographic and socioeconomic factors play an important role in influencing self-management ability and quality of life.

The findings indicated that most patients were in the late adulthood to elderly age groups, reflecting the increasing prevalence of CKD with advancing age due to the progressive physiological decline in kidney function. Older age may negatively affect patients' physical strength, cognitive capacity, and adaptability, potentially limiting their ability to independently manage complex treatment regimens. From a clinical perspective, this suggests that elderly patients may require more structured education and family involvement to optimize self-management outcomes.

Based on sex distribution, most respondents were male, which is consistent with previous epidemiological studies. This pattern is often associated with biological susceptibility and a higher prevalence of risk behaviors such as smoking, poor dietary habits, and uncontrolled



hypertension among men. However, this finding also highlights the need to consider gender-sensitive approaches in designing self-management interventions, as coping mechanisms and health-seeking behaviors may differ between men and women.

Most respondents had a moderate level of education, which may influence health literacy and patients' capacity to understand medical instructions. Adequate educational background can facilitate better comprehension of dietary restrictions, medication adherence, and fluid management. Nevertheless, moderate education does not automatically guarantee optimal self-management, indicating that structured and repeated educational reinforcement remains necessary.

In terms of occupation, the majority of respondents were unemployed or engaged in informal work. This finding suggests that CKD and long-term hemodialysis therapy may significantly reduce productivity and impose financial burdens, thereby affecting socioeconomic stability. Economic limitations may indirectly impact treatment adherence and psychological well-being, which in turn influence quality of life.

The duration of hemodialysis varied, with most patients having undergone treatment for more than one year. Longer treatment duration may reflect patients' adaptation to chronic illness; however, prolonged dependence on dialysis can also contribute to emotional fatigue and treatment burden. Therefore, continuous psychosocial support and patient-centered education are essential to sustain long-term self-management behaviors (Manumara et al., 2025).

Overall, these demographic characteristics indicate that self-management and quality of life among CKD patients are influenced not only by clinical factors but also by complex socio-demographic dynamics. Understanding these contextual factors is crucial for developing tailored interventions that address patients' specific needs.

Self-Management of Patients with Chronic Kidney Disease Undergoing Hemodialysis

The results indicated that most patients with Chronic Kidney Disease (CKD) undergoing hemodialysis demonstrated a moderate level of self-management. This finding suggests that self-management abilities have been developed; however, they remain suboptimal. Although some patients had implemented certain aspects of self-management, these behaviors were not consistently maintained across all respondents.

This finding is consistent with previous studies reporting that self-management behaviors among hemodialysis patients tend to fluctuate and are often influenced by psychological and contextual factors ((Fathoni, 2022);(Mailani et al., 2023); (Nopita et al., 2024)). Research by (Rohmaniah et al., 2022) emphasized that self-efficacy plays an important role in determining the stability of self-management behavior. Patients with lower self-efficacy are more likely to demonstrate inconsistent adherence to treatment recommendations, which may ultimately reduce their quality of life. Similar findings have also been reported by (Rohmawati et al., 2023) and (Sari et al., 2023), who identified a significant association between self-management, self-efficacy, and quality of life among hemodialysis patients.

These findings indicate that moderate self-management levels should not be interpreted as satisfactory, as inconsistent adherence may still increase the risk of complications and negatively affect treatment outcomes. Therefore, nursing interventions should prioritize strategies aimed at enhancing patients' self-efficacy, providing continuous and structured education, and strengthening partnerships between patients and healthcare providers. Such approaches are essential to optimize self-management and subsequently improve the quality of life of patients with CKD undergoing hemodialysis.



Quality of Life of Patients with Chronic Kidney Disease Undergoing Hemodialysis

The following research findings showed that most of the sufferers with CKD undergoing hemodialysis had a moderate level of quality of life, indicating that hemodialysis therapy is able to maintain quality of life, although not optimally. Limitations in physical activity, fatigue, and psychological problems such as stress nor anxiety were still experienced by some patients. These results are in accordance with research carried out from (Nur et al., 2025), which reported that hemodialysis adequacy is connected with stress, anxiety, nor depression, and are further supported by (Kumadji et al., 2025), who demonstrated that coping mechanisms play an crucial role in anxiety levels among patients with chronic kidney failure. Although social and environmental support helps some patients adapt, the predominance of a moderate quality of life importance of a comprehensive approach that combines medical, psychological interventions, and strengthening coping skills to improve the quality of life of sufferers undergoing hemodialysis.

Relationship Between Self-Management and Symptom Problem List

The correlation analysis showed that only the self-care dimension was significantly associated with the symptom problem list among patients with CKD undergoing hemodialysis ($r = 0.190$; $p = 0.008$). This positive relationship indicates that better self-care abilities are associated with better symptom control. Self-care includes dietary adherence, fluid restriction, medication compliance, and vascular access care, which directly influence the occurrence of physical symptoms of CKD. The results are consistent with the theoretical framework proposed by Holman and Lorig (2004), which identifies self-care behaviors as the core component of chronic disease self-management. Self-care encompasses daily activities such as dietary regulation, fluid restriction, and medication adherence, all of which directly influence patients' physical condition.

Research by (Fani et al., 2025) demonstrated that the teach-back educational method significantly improved self-management among hemodialysis patients, particularly in the self-care domain. Improved self-care capacity enables patients to better control physical symptoms, prevent complications, and respond effectively to treatment-related problems. This improved self-care ability plays a crucial role in managing symptoms that arise during hemodialysis and is therefore closely associated with the symptom/problem list domain of quality of life. Studies examining quality of life in hemodialysis patients have also highlighted that symptom burden is strongly linked to adherence to daily treatment behaviors (Sulistyaningsih et al., 2022); and (Wulandari et al., 2024).

Meanwhile, the dimensions of problem-solving, emotional management, and total self-management did not show significant relationships with the symptom domain. This finding may indicate that physical symptom control is more directly influenced by observable and routine physical care behaviors rather than cognitive or emotional coping mechanisms. Previous studies have suggested that while emotional management and coping strategies are important for psychological well-being, their direct impact on physical symptom burden may be less pronounced ((Rohmawati et al., 2023); and (Sari et al., 2023)).

Relationship Between Self-Management and Effects of Kidney Disease

The correlation test results showed that the dimensions of self-care, problem solving, and total self-management were significantly associated with the effects of kidney disease domain, with the strongest relationship observed for self-care ($r = 0.412$; $p < 0.001$). These findings indicate that self-care plays a dominant role in influencing patients' perceptions of the impact of kidney disease on daily life.



Effective self-care behaviors—such as adherence to dietary restrictions, fluid management, and medication compliance—enable patients to maintain functional capacity, social participation, and independence despite undergoing long-term hemodialysis. Previous studies have similarly reported that better self-care practices are significantly associated with improved quality of life and reduced perceived disease burden among hemodialysis patients (Mailani et al., 2023; Sulistyaningsih et al., 2022; Rohmawati et al., 2023). These findings support the notion that daily behavioral adherence directly influences how patients perceive the consequences of chronic illness. In addition, problem-solving ability contributes to patients' capacity to adapt to therapy-related challenges and make informed decisions regarding symptom management and treatment adjustments. Research by Fahrurroh (2023) and Nopita et al. (2024) identified problem-solving skills as important determinants of adaptive self-management behaviors in patients with chronic kidney disease. This adaptive capacity may positively shape patients' perceptions of disease impact by enhancing their sense of control over health-related challenges.

Total self-management was also significantly associated with the effects of kidney disease domain, emphasizing that comprehensive self-management behaviors collectively influence how patients interpret and respond to the impact of chronic illness. However, the partnership and emotional management dimensions did not demonstrate significant relationships. This finding may suggest that perceptions of disease impact are more strongly influenced by patients' internal functional adaptation and behavioral consistency than by external support alone or isolated emotional regulation strategies. Similar observations have been reported in studies indicating that while emotional coping and social support are important for psychological well-being, their direct influence on perceived physical and functional disease impact may be less pronounced (Sari et al., 2023; Rohmaniah et al., 2022).

Relationship Between Self-Management and Burden of Kidney Disease

The analysis showed that self-care ($r = 0.322$; $p < 0.001$) and total self-management ($r = 0.171$; $p = 0.017$) were significantly associated with the burden of kidney disease. These findings suggest that stronger self-care abilities and comprehensive self-management behaviors are linked to lower perceived disease burden among patients undergoing hemodialysis. Effective self-management enhances patients' perceived control over their condition and strengthens their capacity to cope with the long-term demands of dialysis therapy. Improved adherence to dietary restrictions, fluid management, and treatment schedules may reduce the physical discomfort and daily limitations associated with chronic kidney disease. Previous studies have similarly reported that better disease management is associated with lower perceived burden and improved psychosocial adaptation among hemodialysis patients ((Angraini, 2021); and (Fathoni, 2022)).

Furthermore, long-term adaptation to hemodialysis requires continuous behavioral adjustment and coping strategies. Patients who are able to maintain consistent self-care practices tend to report lower treatment-related stress and better overall life satisfaction ((Saputra & Wiryansyah, 2023); and (Manumara et al., 2025)). Digital and structured educational interventions have also been shown to improve adherence and reduce perceived disease burden by strengthening patient engagement and responsibility in daily care ((Ilahiyani et al., 2024); (Hermawan & B, 2025)).

Meanwhile, the partnership, problem-solving, and emotional management dimensions did not demonstrate significant relationships with the burden of kidney disease. This may indicate that patients' perceptions of burden are more directly shaped by their day-to-day physical experiences and treatment demands rather than by relational or cognitive coping components alone. The perceived burden of chronic illness often reflects tangible disruptions in routine



activities, employment, and social functioning, which are closely linked to behavioral adherence and functional independence rather than solely emotional regulation.

Relationship Between Self-Management and SF-12 Physical Composite

The analysis showed that in the SF-12 Physical Composite domain, only emotional management was significantly associated with physical quality of life ($r = 0.147$; $p = 0.041$). This finding indicates that patients' ability to manage emotions, including stress, anxiety, and negative feelings, is related to how they perceive their physical condition. Emotional stability may theoretically influence physiological responses, such as pain perception, fatigue, and energy levels, thereby promoting more adaptive coping mechanisms in patients with chronic illness. This finding is consistent with the research from Kumadji et al. (2025), that reported a relationship among emotional health with physical quality of life in patients with CKD. The absence of significant associations for self-care, problem solving, partnership, nor total self-management suggests that physical quality of life in patients with CKD may be more strongly influenced by clinical factors than by self-management aspects.

Relationship Between Self-Management and SF-12 Mental Composite

In the SF-12 Mental Composite domain, significant relationships were found with self-care, problem solving, emotional management, and total self-management, with the strongest correlation observed for self-care ($r = 0.497$; $p < 0.001$). These results shown that self-care has a major contribution to improving mental quality of life among patients with CKD. Effective self-management enhances patients' sense of control and confidence in managing chronic illness, while problem-solving and emotional management skills help patients cope with treatment-related challenges and regulate stress and negative emotions. The combination of these abilities contributes to improved psychological well-being. These results are consistent with previous studies by Nur et al. (2025), which reported that self-management is correlated with lower levels of anxiety and depression and better mental quality of life among hemodialysis patients. However, the absence of a significant relationship for the partnership variable suggests that mental quality of life is more strongly influenced by internal patient factors than by partnerships with healthcare providers.

Conclusion

Based on the research findings, it can be concluded that patients with chronic kidney disease undergoing hemodialysis were predominantly in the late adulthood to elderly age groups, mostly male, had moderate to high levels of education, and were largely unemployed or engaged in non-formal work with incomes below the regional minimum wage. Most respondents had been undergoing hemodialysis for 1–5 years, with relatively uniform treatment frequency and duration. Overall, patients' self-management levels ranged from moderate to good, although variations in self-management abilities were observed among individuals.

Chronic kidney disease patients undergoing hemodialysis generally have a moderate quality of life, with variations across different domains, indicating that hemodialysis therapy is able to maintain quality of life but not optimally. The analysis demonstrated that the correlation among self-management with quality of life was domain-specific. Self-care played a key role in symptom management, perceptions of disease impact and burden, and mental quality of life. In addition, problem solving, emotional management, and total self-management contributed to specific aspects of quality of life, particularly mental domains, while partnership did not show a significant association. Overall, these findings emphasize that strengthening self-management, especially self-care, is a crucial factor in efforts to optimize the quality of life of patients with CKD undergoing hemodialysis.



Ethics approval and consent to participate

This research has get Ethics Approval from the Health Study Ethics Committee of R.T Notopuro Regional Hospital, Sidoarjo with the ethical code 000.9.2/144.438.5.2.1.1/2025. Respondents were given an explanation, the right to refuse, and signed an informed consent agreement. Data confidentiality was maintained by using respondent codes and reporting results in aggregate.

Acknowledgments

The authors express their sincere gratitude to Allah SWT for His guidance and blessings throughout this research. Appreciation is also extended to Ms. Rif'atul Fani, M.Kep and Ms. Riki Ristanto, M.Kep for their valuable guidance and support. The authors also thank the Head of the R.T. Notopuro Sidoarjo Regional General Hospital for granting research permission and data collection facilities, and the chronic kidney failure patients in the Hemodialysis Unit for their participation. Finally, the authors would like to thank all individuals who contributed, directly or indirectly, to the completion of this study.

References

- Angraini, R. (2021). Faktor – faktor yang mempengaruhi kualitas hidup pasien penyakit ginjal kronik yang menjalani hemodialisa literature review. *Jurnal Ilmu Kesehatan Mandira Cendikia*, 2, 77–84.
- Azira, N., Mutmainna, A., & Irmayani. (2023). Pengaruh Hemodialisa Terhadap Quality Of Life Pada Pasien Gagal Ginjal Kronik. *Jurnal Ilmiah Mahasiswa & Penelitian Keperawatan*, 3(2).
- Fani, R., Wahyusari, S., Hastuti, A. P., & Husna, C. H. Al. (2025). The Effect of teach-back educational method on self-management in hemodialysis patients. *Jurnal Keperawatan*, 16(1), 1–7. <https://doi.org/10.22219/jk.v16i1.35754>
- Fathoni, Z. S. Al. (2022). Gambaran Kualitas Hidup Pada Pasien Gagal Ginjal Kronik Yang Menjalani Hemodialisa Di RSI Sultan Agung Semarang. *Universitas Islam Sultan Agung*.
- Handayani, R. S., & Rahmayati, E. (2017). Faktor faktor yang berhubungan dengan kualitas hidup pasien Chronic Kidney Disease (CKD) yang menjalani hemodialisis. *Jurnal Ilmiah Keperawatan Sai Betik*, 9(2), 238–245.
- Hermawan, S. P., & B, R. (2025). Hubungan Self-Care Management Dengan Kualitas Hidup Pasien Gagal Ginjal Kronik Yang Menjalani Hemodialisis Di Rsud Bandung Kiwari Tahun 2025. *SINERGI : Jurnal Riset Ilmiah*, 2(5), 2096–2103. <https://doi.org/10.62335/sinergi.v2i5.1183>
- Ilahiyani, V., Khoerunnisa, Wulandari, P. E., Putri, M. A., Felania, N. A., Septianisa, R. E., Hidayat, T., Karomah, I., Fakhriyah, A. P., Zahara, A., Ridwan, H., & Sopiah, P. (2024). MENINGKATKAN KEPATUHAN DAN KUALITAS HIDUP PASIEN HEMODIALISIS MELALUI SOLUSI DIGITAL: LITERATURE REVIEW. *JURNAL PENELITIAN PERAWAT PROFESIONAL*, 6.
- Kumadji, S., Pakaya, N., & Liputo, G. P. (2025). Hubungan Mekanisme Koping Dengan Tingkat Kecemasan Pada Pasien Gagal Ginjal Kronik Di Ruang Hemodialisa RSUD Dr. M. M Dunda Limboto *The Relationship Between Coping Mechanisms and Anxiety Levels in Chronic Kidney Failure Patients in the Hemodialysis Ward of Dr. M. M Dunda Limboto Regional Hospital*. 8(8), 5417–5429. <https://doi.org/10.56338/jks.v8i8.8376>
- Mailani, F., Huriani, E., Muthia, R., & Rahmiwati. (2023). Self-Management and Relating Factors among Chronic Kidney Disease Patients on Hemodialysis: An Indonesian Study. *Nurse Media Journal of Nursing*, 13(1), 109–120. <https://doi.org/10.14710/nmjn.v13i1.48708>
- Malinda, H., Sandra, S., & Rasyid, A. (2022). Hubungan Penerimaan Diri Terhadap Self



- Management Pada Pasien Penyakit Ginjal Kronis Yang Menjalani Hemodialisis. *Jurnal Ners*, 6(2), 209–221. <https://doi.org/10.31004/jn.v6i2.7699>
- Manumara, T. M., Faroq, M. F., & Ramanda, M. A. (2025). Hubungan Antara Dukungan Keluarga dan Kualitas Hidup Remaja yang Menjalani Hemodialisa Menurut Teori Swanson. 4(4), 2267–2272.
- Nopita, Y., Eni, R., Rahayu, M. K., & Gusni, J. (2024). Faktor-Faktor Yang Mempengaruhi Self-Management Klien Gagal Ginjal Kronik. *Jurnal Kesehatan Medika Saintika*, 15(2).
- Nur, A., Paoh, A., Syuhada, I., Rahadiani, D., & Fatrahady, B. (2025). Hubungan Adekuasi Hemodialisa Dengan Stres, Kecemasan, dan Depresi Pada Pasien Yang Menjalani Hemodialisis di RSUD Praya Lombok Tengah. 13(1), 382–393.
- Rohmaniah, F. A., Sunarno, R. D., Magister, M., Universitas, K., Husada, K., Universitas, D., & Husada, K. (2022). EFIKASI DIRI UNTUK MENINGKATKAN KUALITAS HIDUP HEMODIALISIS. 13(1), 164–175.
- Rohmawati, D., Komalawati, R., & Fadhlika, N. (2023). Self Management dan Self Efficacy Berhubungan Dengan Kualitas Hidup Pasien Hemodialisa. *Jurnal Keperawatan*, 15(3). <http://journal.stikeskendal.ac.id/index.php/Keperawatan>
- Saputra, A., & Wiryansyah, O. A. (2023). Hubungan Lama Masa Hemodialisis Dengan Kualitas Hidup Pasien Gagal Ginjal Kronik. *Babul Ilmi Jurnal Ilmiah Multi Science Kesehatan*, 15(1). <https://doi.org/10.36729/bi.v15i1.1067>
- Sari, F., Yanti, L., & Arafah, M. (2023). Hubungan Self Management Dan Self Efficacy Pada Pasien Penyakit Ginjal Kronik On Hemodialisis. *Jurnal Keperawatan*, 15(54), 367–372. <https://journal2.stikeskendal.ac.id/index.php/keperawatan/article/view/2045>
- Solihatin, Y. (2020). PENGARUH PENDIDIKAN KESEHATAN TERHADAP TINGKAT PENGETAHUAN SELF MANAGEMENT PASIEN CHRONIC KIDNEY DISEASE (CKD) DI RUANG HEMODIALISA RSUD SMC TASIKMALAYA. *Jurnal Keperawatan & Kebidanan*, 5(2), 13–23. <https://doi.org/10.54440/jmk.v4i2.106>
- Sulistyaningsih, D. R., Noor, M. A., & Rokhayati, I. (2022). Self care management dan kualitas hidup pasien hemodialisis. *Jurnal Penelitian Dan Pemikiran Ilmiah Keperawatan*, 8(2), 77–86. <https://doi.org/10.4324/9781003435358-5>
- Supriyadi, R., Rakhima, F., Gondodiputro, R. S., & Darmawan, G. (2019). Validity and Reliability of the Indonesian Version of Kidney Disease Quality of Life (KDQOL-36) Questionnaire in Hemodialysis Patients at Hasan Sadikin Hospital, Bandung, Indonesia. *Acta Medica Indonesiana*, 51(4), 318–323.
- Widiyawati, A., & Rahmanda, A. W. (2023). Hubungan Asupan Protein dan Frekuensi Hemodialisis dengan Kadar Serum Kreatinin pada Pasien Gagal Ginjal Kronik di Rumah Sakit Umum Kaliwates. *HARENA: Jurnal Gizi*, 5(2), 2774–7654.
- Wulandari, G., Zukhri, S., Hamranani, S. S. T., & Khayati, F. N. (2024). Gambaran Kualitas Hidup Pada Pasien Gagal Ginjal Kronis Yang Menjalani Terapi Hemodialisa Di RS Soeradji Tirtonegoro Klaten. *Medical Journal of Soeradji*, 1(2), 70–82. <http://dx.doi.org/10.1016/j.cirp.2016.06.001><http://dx.doi.org/10.1016/j.powtec.2016.12.055><https://doi.org/10.1016/j.ijfatigue.2019.02.006><https://doi.org/10.1016/j.matlet.2019.04.024><https://doi.org/10.1016/j.matlet.2019.127252><http://dx.doi.org>

