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SELF-CARE MANAGEMENT AND QUALITY OF LIFE IN HEMODIALYSIS PATIENTS

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Abstract

Hemodialysis is a procedure that removes solutes and excess fluids from the blood. Its main goal is to relieve symptoms by controlling uremia, fluid overload, and electrolyte imbalances in patients with chronic kidney disease. Hemodialysis also requires patients to make significant lifestyle adjustments. This study aims to examine the relationship between self-care management and the quality of life among hemodialysis patients. This quantitative study used a cross-sectional design with a total sampling technique involving 23 respondents. Data were collected using a Self-Care Management Questionnaire and the KDQOL (Kidney Disease Quality of Life) instrument. The data were analyzed using the Gamma test. The findings showed a significant relationship between self-care management and quality of life among hemodialysis patients at the Hemodialysis Unit of Sinar Husni Hospital, Medan, in 2025. The chi-square test result showed a p-value of 0.000 (<0.05), indicating a significant association. There is a significant relationship between self-care management and the quality of life of hemodialysis patients at Sinar Husni Hospital, Medan.

Keywords: Hemodialysis, Self-care management, Quality of life

1. INTRODUCTION

Hemodialysis (HD) is the most common renal replacement therapy for patients with end-stage renal disease (ESRD) (Putri et al., 2022). It plays a vital role in sustaining life by removing waste products and excess fluids from the blood, helping control uremia, electrolyte imbalance, and fluid overload. Although HD prolongs survival, it cannot fully restore kidney function (Rahmah et al., 2020). Patients undergoing long-term HD often experience multiple complications such as hypotension, electrolyte disturbances, bone disease, cardiovascular disorders, and infections, which can significantly affect their physical, psychological, and social well-being (Bello et al., 2022).

Chronic kidney disease (CKD) is characterized by irreversible kidney function decline lasting for more than three months. In Indonesia, the leading causes are uncontrolled diabetes mellitus and hypertension. National data show an increasing prevalence of CKD, with around 0.3% of the population affected, and 60% requiring HD. The Indonesia Renal Registry reported that 98% of end-stage renal disease patients undergo HD as their main therapy (Hustrini et al., 2025).

HD treatment demands strict lifestyle adjustments and long-term self-management. Effective self-care management—including adherence to dietary restrictions, fluid control, medication compliance, and symptom monitoring—helps prevent complications, improve treatment outcomes, and enhance quality of life (QoL) (Yasin et al., 2024).

However, many patients still struggle to maintain effective self-care behaviors due to limited knowledge, lack of motivation, or inadequate family and healthcare support (Bamforth et al., 2023).

Quality of life is a key indicator of treatment success among HD patients, encompassing physical, psychological, and social dimensions (Visweswaran et al., 2020). Studies have shown that better self-care management is associated with improved QoL among patients with chronic illnesses, including CKD (Huang et al., 2024). Nevertheless, most existing studies focus on large urban centers or use different populations, leaving limited evidence about the relationship between self-care management and QoL among hemodialysis patients in local hospital settings such as Sinar Husni Hospital, Medan.

2. METHODS

This study used a quantitative cross-sectional correlational design to examine the relationship between self-care management and quality of life among hemodialysis patients. The research was conducted at the Hemodialysis Unit of Sinar Husni General Hospital, Medan, from January to May 2025. This site was chosen because it has well-equipped dialysis facilities and a large number of chronic kidney disease patients. The population included 46 patients undergoing hemodialysis. A total of 23 respondents were selected using consecutive sampling, involving all patients who met the inclusion criteria during the study period. The inclusion criteria were: patients aged 30–75 years, undergoing regular hemodialysis, and willing to participate by signing informed consent. Patients who refused participation were excluded. Data were collected using structured questionnaires.

Self-care management was measured using the *Hemodialysis Patient Self-Care Measurement Scale*, covering diet management, stress control, physical activity, vascular access care, and adherence to therapeutic diets. The instrument showed high reliability (Cronbach's α = 0.961). Quality of life was measured using the *KDQOL-SF 36* questionnaire, which assesses physical, mental, and social well-being. This instrument also demonstrated high reliability (Cronbach's α = 0.977).

Data were analyzed using SPSS software. Descriptive analysis was used to describe demographic data and variable distributions, while Spearman's rho correlation test was used to determine the relationship between self-care management and quality of life. A p-value < 0.05 was considered statistically significant.

3. RESULTS

Table 1. Frequency Distribution of Respondent Characteristics

Characteristics	n	%
Age		
18–39 years	9	39
40–59 years	9	39
>60 years	5	22
Total	23	100
Gender		
Female	12	52
Male	11	48
Total	23	100
Education Level		
Elementary School	1	4
Junior High School	5	22
Senior High School	11	48
College/University	6	26
Total	23	100
Duration of Hemodialysis Therapy		
<1 year	15	65

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≥1 year	8	35
Total	23	100

Table 1 presents the demographic characteristics of respondents undergoing hemodialysis at Sinar Husni General Hospital, Medan, in 2025. The majority of respondents were aged 18–59 years (78%), while 22% were over 60 years old. Most respondents were female (52%), and males made up 48% of the total sample. In terms of education level, nearly half of the respondents (48%) had completed senior high school, followed by 26% who had a college or university education, 22% with junior high school education, and 4% with elementary school education. Regarding the duration of hemodialysis therapy, the majority (65%) had been undergoing treatment for less than one year, while 35% had been receiving therapy for one year or more.

Table 2. Frequency Distribution of Self-Care Management among Hemodialysis Patients at Sinar Husni General Hospital

Self-Care Management	n	%
Low	5	22
Moderate	10	44
High	8	34
Total	23	100

Table 2 shows that the majority of respondents (44%) demonstrated a moderate level of self-care management. Meanwhile, 34% of respondents had a high level of self-care management, and 22% were in the low category. This indicates that most hemodialysis patients had a fairly good ability to manage their self-care, though not yet optimal.

Table 3. Frequency Distribution of Quality of Life among Hemodialysis Patients at Sinar Husni General Hospital

Quality of Life	n	%
Poor	3	13
Fair	9	39
Good	4	18
Very Good	6	26
Excellent	1	4
Total	23	100

Table 3 shows that the largest proportion of respondents (39%) had a fair quality of life. Meanwhile, 26% reported a very good quality of life, 18% had a good quality of life, 13% were in the poor category, and only 4% were classified as excellent. These results suggest that most hemodialysis patients experienced a moderate quality of life, reflecting the ongoing physical and psychological challenges associated with long-term dialysis treatment.

Tabel 4. Cross-Tabulation of the Relationship between Self-Care Management and Quality of Life among Hemodialysis Patients at Sinar Husni General Hospital

Self-Care Management	Quality of Life					Total (n)	p-value	Correlation Coefficient (r)
	Poor	Fair	Good	Very Good	Excellent			
Low	2	3	–	–	–	5	0.00	0.685□□
Moderate	1	5	2	2	–	10		
High	–	1	2	4	1	8		
Total	3	9	4	6	1	23		

Table 4 presents the relationship between self-care management and quality of life among hemodialysis patients. Of the five respondents with low self-care management, two had poor quality of life and three had fair quality of life. Among those with moderate self-care management (10 respondents), one had poor, five had fair, two had good, and two had very good quality of life. For

the eight respondents with high self-care management, one had fair, two had good, four had very good, and one had excellent quality of life. Spearman's rho test showed a significant relationship between self-care management and quality of life ($p = 0.000 < 0.05$) with a correlation coefficient of $r = 0.685$, indicating a strong positive correlation. This means that patients with better self-care management tend to have a higher quality of life.

4. DISCUSSION

This study found a strong, positive association between self-care management and quality of life (QoL) among hemodialysis patients (Spearman's $r = 0.685$, $p = 0.000$). In other words, patients who reported better self-care practices tended to report higher QoL. This result aligns with prior research showing that self-management behaviors—such as adherence to diet and fluid restrictions, vascular access care, symptom monitoring, and stress management—are positively associated with improved patient-reported outcomes in chronic kidney disease (CKD) and dialysis populations (Lin & Hwang, 2020).

Several mechanisms likely explain this relationship. First, effective self-care reduces physiological complications (e.g., fluid overload, electrolyte imbalance, and vascular access problems), which directly improves physical functioning and symptom burden—two key domains of KDQOL instruments. Second, mastery of self-management tasks can increase patients' self-efficacy and perceived control over illness, which improves psychological well-being and social participation. Third, structured self-care education and support often include problem-solving and coping strategies that mitigate stress and depressive symptoms common in dialysis patients. These mechanisms are supported by reviews and intervention studies demonstrating that patient-centered self-management programs improve self-efficacy, clinical markers, and QoL (Lin & Hwang, 2020).

Intervention studies further corroborate the practical value of improving self-care. Randomized and quasi-experimental trials of structured self-management programs (including nurse-led or model-based interventions such as the 5A model and HED-SMART) have reported improvements in QoL domains, symptom burden, and some clinical outcomes. These findings suggest that targeted education and coaching could convert the observed cross-sectional association into measurable improvements when implemented as a sustained intervention (Kapoor et al., 2018).

Comparing our sample to similar reports from the region, several Indonesian studies have also documented a positive link between self-care education and QoL in hemodialysis patients, indicating that the association persists across contexts and supports the generalizability of our findings to similar hospital settings.

Local studies emphasize the importance of culturally appropriate education and family support in achieving sustainable self-care behaviors (Prastiwi et al., 2022).

The study's cross-sectional design precludes causal inference; while better self-care is associated with higher QoL, we cannot determine directionality or rule out residual confounding (for example, by socioeconomic status, comorbidity burden, or access to care). The small sample size (n = 23) and single-center setting also limit external validity and statistical power to detect subgroup effects. Measurement relied on self-report instruments; although both instruments demonstrated high internal consistency, response bias remains possible.

Despite these limitations, the strong correlation suggests that routine assessment of self-care behaviors should be integrated into HD clinical practice. Nurses and multidisciplinary teams should prioritize structured self-management education (tailored to literacy and cultural context), involve family caregivers, and consider model-based interventions (e.g., 5A nursing model or HED-SMART) that have demonstrated QoL benefits in trials. Future research should evaluate these interventions in randomized or controlled longitudinal designs with larger, multi-center samples and incorporate objective clinical endpoints (hospitalizations, interdialytic weight gain, vascular access complications) to test causal impact (Keivan et al., 2023).

5. CONCLUSION

The present findings add to converging evidence that improving self-care management is a promising strategy to enhance quality of life in hemodialysis patients. Implementing and rigorously evaluating structured self-management programs in Indonesian dialysis centers is a priority for both clinical practice and future research.

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