

The Relationship Between Family Support and Self-Efficacy in Managing Chronic Kidney Failure Patients in the Hemodialysis

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ABSTRACT

Background: Chronic Kidney Disease (CKD) is a progressive condition that requires patients to undergo long-term hemodialysis, leading to substantial physical, psychological, and social challenges. Effective management of hemodialysis depends not only on medical treatment but also on patients' self-efficacy in adhering to therapy, dietary restrictions, and fluid management. Family support is considered a crucial psychosocial factor that may enhance self-efficacy; however, empirical evidence examining this relationship in the Indonesian hemodialysis setting, particularly at regional hospitals, remains limited.

Purpose: This study aimed to examine the relationship between family support and self-efficacy among patients with chronic kidney disease undergoing hemodialysis.

Methods: A quantitative correlational study with a cross-sectional design was conducted at Karsa Husada Batu Regional General Hospital, East Java, Indonesia. A total of 102 CKD patients undergoing hemodialysis were selected using a consecutive sampling technique. Data were collected using standardized family support and self-efficacy questionnaires. Statistical analysis was performed using Spearman's rank correlation test with a significance level of $\alpha = 0.05$.

Results: The majority of respondents reported high levels of family support (91.2%) and high self-efficacy (91.2%). Spearman's correlation analysis showed a strong and statistically significant positive relationship between family support and self-efficacy ($r = 0.612$; $p < 0.001$).

Conclusion: Family support is strongly associated with self-efficacy among patients with chronic kidney disease undergoing hemodialysis. Strengthening family involvement may improve patients' confidence and ability to manage long-term hemodialysis care. These findings support the development of family-based nursing interventions to enhance psychosocial outcomes in hemodialysis patients in Indonesia.

Introduction

Patients with chronic kidney disease (CKD), a worldwide health issue, must have long-term renal replacement therapy in the form of hemodialysis due to the progressive and permanent decline in kidney function. Patients' quality of life is impacted by this illness not just physically but also psychologically and socially (Alkayri et al., 2024; Rustika, 2016). According to WHO data from 2023, CKD is the 12th most common cause of death globally, accounting for over 850,000 deaths annually. The global prevalence reaches 700 million people, or about 8.5 – 9.8 % of the world's population (WHO, 2024). In Indonesia, the Indonesian Health Survey reported an ESRD prevalence of 0.18%, corresponding to 638,178 people, with 21.1% of them having undergone hemodialysis. A similar trend is seen in East Java with a prevalence of 0.12%, including Malang Raya, which is estimated to have 2,900 CKD patients, of which 1,500 patients



regularly undergo hemodialysis. Primary study data at Karsa Husada Batu Regional General Hospital shows that there are 119 active patients undergoing hemodialysis. This increasing number of patients highlights the urgency of research addressing not only clinical outcomes but also psychosocial factors that may influence treatment adherence and long-term disease management (Widiyawati & Rahmanda, 2025).

Many CKD patients undergoing hemodialysis experience stress, anxiety, and difficulties in adapting to lifelong therapy (Priasmoro & Lestari, 2023). Low levels of self-efficacy have been identified as a major psychosocial problem, as they are associated with poor adherence to dietary regulations, fluid restrictions, and hemodialysis schedules (Herlina & Rosaline, 2021; Sary, 2022). In addition, family support is often suboptimal, with some patients reporting insufficient motivation, emotional support, and practical assistance during treatment. Previous studies have demonstrated that successful CKD management depends not only on medical compliance but also on adequate family support, which plays a crucial role in providing motivation, emotional reassurance, and instrumental assistance that can enhance patients' self-efficacy (Amperaningsih & Noviyanti Sitanggang, 2024; Isnaini et al., 2021). However, most existing studies have focused on general CKD populations or large referral hospitals, while empirical evidence from regional hospitals and specific sociocultural contexts remains limited. This indicates a clear research gap regarding how family support influences self-efficacy among hemodialysis patients in local Indonesian settings (Dewi et al., 2025; Luo et al., 2024).

The Justification for the study is reinforced by preliminary findings showing that most patients feel they desperately need family support during the treatment process, especially in terms of motivation, assistance, and diet and fluid restriction management. This is in line with preceding research stating that there is a positive and significantly relationship among family support and the self-efficacy of CKD Patients undergoing hemodialysis (Isnaini et al., 2021). To better understand this issue, the chronology of the problem can be described as follows. First, clinically, CKD patients experience physical limitations, medical complications, and routine therapy demands that interfere with daily activities (Mailani et al., 2023). Second, these clinical burdens often lead to psychological problems such as stress, anxiety, and feelings of helplessness as patients are required to adapt to strict lifestyle and fluid intake restrictions. Third, family support becomes a critical factor in helping patients cope with emotional stress, maintain motivation, and adhere to treatment regimens. Fourth, preliminary interviews with ten hemodialysis patients at Karsa Husada Batu Regional General Hospital revealed that the presence and involvement of family members are essential for increasing patients' confidence and consistency in undergoing long-term treatment.

The solution offered is the development of family-based nursing interventions, in which families are actively involved in patient care during therapy, diet management, and motivation. In addition, increasing patients' self-efficacy through education and psychosocial support can strengthen their confidence in adhering to the treatment regimen. Hospitals can also develop educational programs for families of CKD Patients to increase their involvement in supporting long-term care. Therefore, the objective of this study is to analyze the relationship between family support and self-efficacy among CKD patients undergoing hemodialysis at Karsa Husada Batu Regional General Hospital, as well as to provide empirical evidence that can serve as a basis for developing family-based nursing interventions aimed at improving patients' quality of life.

Methods

Research Design

This study employed a quantitative correlational design with a cross-sectional approach to examine the relationship between family support and self-efficacy among patients with chronic



kidney disease undergoing hemodialysis. A correlational design was chosen to identify the strength and direction of the association between variables measured at a single point in time (Nursalam, 2016; Sugiyono, 2019).

Population and Sample

The study was conducted in the Hemodialysis Unit of Karsa Husada Batu Regional General Hospital, East Java, Indonesia. Data collection was carried out in November 2025 over a two-day period, following the issuance of research authorization and ethical approval.

The study population consisted of all patients with chronic kidney disease who routinely underwent hemodialysis at Karsa Husada Batu Regional General Hospital. Based on preliminary data collected up to May 2025, there were 119 active hemodialysis patients.

Inclusion criteria were: (1) patients diagnosed with chronic kidney disease, (2) patients undergoing routine hemodialysis therapy, (3) patients aged ≥ 18 years, (4) patients who were conscious and able to communicate effectively, and (5) patients who agreed to participate and signed informed consent.

Exclusion criteria included: (1) patients with cognitive impairment or severe mental disorders, (2) patients in critical condition, and (3) patients who were unwilling to complete the questionnaire.

The sample size was calculated using the Slovin formula with a margin of error of 5%, resulting in a minimum sample of 92 respondents. To anticipate possible non-response or dropout, an additional 10% was added, yielding a final sample size of 102 respondents.

Although the initial protocol planned to use simple random sampling, the actual data collection process employed consecutive sampling, in which all eligible patients who met the inclusion criteria and were present during the data collection period were recruited until the required sample size was achieved. This approach was chosen due to time limitations and the fixed schedule of hemodialysis sessions, making true randomization impractical.

Instruments

The Family Support Questionnaire was adapted from Nursalam (2013) and consists of 12 items covering three dimensions: emotional and evaluative support, instrumental support, and informational support. Each item was rated using a four-point Likert scale (0 = never, 1 = sometimes, 2 = often, 3 = always), with a total score ranging from 0 to 36. Family support was categorized as poor (0–12), moderate (13–24), and good (25–36).

The validity test of the Family Support Questionnaire was conducted using Pearson Product Moment correlation on 10 respondents, yielding an r -table value of 0.632. All items showed r -count values greater than the r -table, indicating that all items were valid. Reliability testing using Cronbach's alpha produced a value of 0.917, demonstrating excellent internal consistency (Ghozali, 2021).

Self-efficacy was measured using the Chronic Kidney Disease Self-Efficacy (CKD-SE) questionnaire developed by Chu Lin et al. (2012) and translated by Wulandari (2020). This instrument consists of 25 items representing four dimensions: autonomy, self-integrity, problem-solving, and seeking social support. Responses were measured using a four-point Likert scale ranging from 1 (not confident) to 4 (very confident), resulting in total scores between 25 and 100.

Score categorization for self-efficacy was based on the distribution of respondent scores and prior empirical studies, classifying self-efficacy into low (25–74), moderate (75–81), and high (82–100) levels. This categorization was used to facilitate clinical interpretation rather than to imply equal score intervals.



Validity testing of the CKD-SE questionnaire showed that all items had r-count values exceeding the r-table value of 0.878, confirming item validity. Reliability analysis yielded a Cronbach's alpha coefficient of 0.776, indicating good internal consistency.

Data Analysis

Data processing was performed using SPSS software version 25. The analysis consisted of several stages, including data editing, coding, entry, and cleaning.

Univariate analysis was conducted to describe respondent characteristics and the distribution of family support and self-efficacy variables. Because the data were ordinal, descriptive statistics were presented using frequencies, percentages, medians, and interquartile ranges (IQR), rather than means and standard deviations.

Bivariate analysis was performed to examine the relationship between family support and self-efficacy using Spearman's rank correlation test (Spearman's rho), as both variables were ordinal and did not meet normality assumptions.

The correlation coefficient was reported along with a 95% confidence interval (CI) to provide a more precise estimation of the association strength. Statistical significance was determined at a p-value of < 0.05.

Results

Table 1 Distribution Based on Respondent age (n=102)

Age	Frequency	Percent
18-25	2	2.0
26-45	34	33.3
46-60	43	42.2
>60	23	22.5
Total	102	100.0

Based on Table 1, the result of the age analysis shows that the respondents were dominated by the 46-60 age group with 43 people (42,2%). This was followed by the 26-45 age group with 34 people (22.5%), and the smallest group was the 18-25 age with 2 people (2%). The average age of respondents was mean=2.85 with a standard deviation of SD = 0.788, which shows that the age distribution of respondents was in the late adult to elderly category., was dominated by the 46-60 age wit with 43 people (42,2%). This Was followed by the 26-45 age group wit 34 people (33,3%), then the >60 age group with 23 people(22,5%), and the smallest group was the 18-25 age group with 2 people (2%). The average age of respondents was mean =2.85 with a standard deviation SD =0.788, indicating that the age distribution of respondents tended to be in the late adult to elderly category.

Table 2. Descriptive Statistics

Variable	N	Mean	Median	Std. Deviation
Gender	102	1.57	2.00	0.498
Job	102	2.57	3.00	1.439
Family Support	102	1.10	1.00	0.330
Self-Efficacy	102	1.12	1.00	0.405

Table 2 presents the descriptive statistics of respondents' characteristics and the main research variables. The results show that the median value for gender was 2, indicating that female respondents constituted the dominant category. The job variable had a mean value of 2.57 and a median of 3, suggesting that respondents were mainly concentrated in agricultural and informal employment categories.



Furthermore, family support had a mean score of 1.10 with a median of 1, while self-efficacy showed a mean value of 1.12 and a median of 1. These results indicate that most respondents were clustered in the highest category of family support and self-efficacy.

Table 3 Frequency Distribution Characteristic Respondents (n=102)

Gander	frequency	Percentage%
Male	44	43,1
Famale	58	56,9
Total	102	100.0

The analysis's findings showed that men made up the majority of respondents, specifically 44 individuals (43.1%), while female respondents numbered 58 people (56,9%). These findings indicate that female participation in the study was higher than male participation.

Referring to the descriptive statistics in Table 2, the median value of gender was 2, confirming that female respondents dominated the study sample.

Table 4 Types of job characteristics of respondents

Job	frequency	Percentage%
Farmer	38	37.3
Housewife	13	12.7
Private sector	14	29.4
Unemployed	30	29.4
Laborer	6	5.9
Civil Servant	1	1.0
Total	102	100.0

The distribution of occupations shows that most work as farmers, totaling 38 people (37,3%). This is followed by the category of not working, with 30 people (29,4%), Private Sector Employment with 14 people (13,7%), and Housewives (IRT) with 13 people (12,7%). Other categories include Laborens with 6 People (5,9%) and civil servants with 1 person (1%). This indicates that respondents are predominantly employed in the agricultural sector.

Based on Table 2, the job variable had a mean value of 2.57 and a median of 3, indicating that respondents were predominantly concentrated in agricultural and informal employment sectors.

Table 5 family Support variable Table

Cathegory	Frequency	Percent
Good	93	91.2
Moderate	8	7.8
Poor	1	1.0
Total	102	100.0

The analysis result shows that most respondents have good family support, namely 93 people (91.2%). Furthermore, moderate family support was reported by 8 people (7.8%), and poor family support was reported by only 1 person (1%). With an average score mean =1.10, it can be inferred that most respondents report having a strong sense of familial support.

Table 6. Self-Efficacy variable Table

Cathegory	Frequency	Percent
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High	93	91.2
Medium	6	5.9
Low	3	2.9
Total	102	100.0

Descriptive analysis shows that the majority of respondents have high self-efficacy, namely 93 people (91.2%). Respondents with moderate self-efficacy numbered 6 people (5.9%), and those with low self-efficacy numbered 3 people (2.9%). With an average score of Mean = 1.12, these results indicate that the respondents' self-efficacy levels were generally in the high category.

Table 7. Relationship between family support and self-efficacy using Spearman's correlation analysis

Spearman's rho	Significancy (p-value)	Correlation (r)
	0.000	0.612

** . Correlation is significant at the 0.01 level (2-tailed).

The Spearman correlation test revealed that the correlation coefficient between family support and self-efficacy was 0.612, with a significant value of $p = 0.000$ ($p > 0.01$). The two variables have a strong and significant positive association, according to this coefficient value. This indicates that respondents' self-efficacy increases with the amount of family support they receive. Referring to the descriptive statistics in Table 2, the median value of family support was 1.00, indicating that most respondents perceived their family support to be in the highest category. Similarly, the median value of self-efficacy was 1.00, showing that respondents generally reported high levels of self-efficacy. Changes in the family support variable are positively correlated with changes in self-efficacy. Furthermore, a relationship is statistically significant and unlikely to be the result of chance if the significance value is less than 0.01. Therefore, it can be said that the study's participants' self-efficacy and family support are strongly, favorably, and significantly correlated.

Discussion

The Relationship Between Family Support and Patients With Chronic kidney Failure

Family Support is an independent variable in this study, defined as all forms of assistance provided by family members to chronic kidney failure patients undergoing hemodialysis therapy. This support includes emotional, informational, instrumental, and evaluative support that can help patients increase their self-confidence and ability to manage their care. Family support is an important aspect because CKD Patients need long-term assistance and adjustment to their constantly changing physical condition (Alkayri et al., 2024)

In this study, family support was assessed using a questionnaire that had been adapted to family support indicators. By univariate analysis, the results showed that most respondents had good family support, namely 93 people (91,2%), while 8 people (7,8%) had moderate support. These data indicate that the majority of patients feel they receive optimal support from their families. This Finding is reinforced by the results of bivariate analysis using Spearman's test, which shows a strong and significant positive correlation among family support with self-efficacy, which one a correlation score of $r = 0.612$ and a significance p -value = 0.000 ($p < 0.01$). This matter shows that the better the family support received by patients, the higher their self-efficacy in undergoing hemodialysis therapy. The finding of this research are in line with the theory that family support can be a protective factor that increases patients' confidence in their ability to manage chronic conditions. Good family support helps patients feel more secure,



motivated, and able to undergo the hemodialysis process consistently (Novitasari & Wakhid, 2018).

Therefore, it can be said that the self-efficacy of patients with chronic renal failure is significantly increased by family support.

The Relationship Between Self-Efficacy in Chronic Kidney Failure Patients

Self-efficacy is the dependent variable in this study, defined as the belief of chronic kidney disease patients in their ability to undergo self-care, follow hemodialysis therapy procedures, and manage their physical and emotional conditions during the treatment process. Self-efficacy is an important aspect because CKD patients undergo long-term therapy that requires discipline, mental preparedness, and the ability to adapt to changes in health conditions. In this research, self-efficacy was measured using a questionnaire that had been adapted to self-efficacy indicators, including patient confidence in undergoing therapy, ability to overcome obstacles, and consistency of care behavior. The univariate analysis results showed that most patients had good self-efficacy, namely 89 respondents (87.3%), while 13 respondents (12.7%) had moderate self-efficacy, and there were no respondents with low self-efficacy. These data illustrate that the majority of patients already have high confidence in undergoing hemodialysis.

The Spearman's rank test bivariate analysis results revealed with a correlation value of $r = 0.612$ and a significance value of $p = 0.000$ ($p < 0.01$), the bivariate analysis using Spearman's rank test revealed a strong and significant positive link between family support and self-efficacy. This suggests that the patient's self-efficacy in receiving hemodialysis therapy increases with the level of family support. In other words, patients' self-efficacy does not stand alone, but is greatly influenced by emotional encouragement, instrumental assistance, information, and motivation from the family (Hidayangsih et al., 2023; Nasution et al., 2025).

These findings indicate that self-efficacy in patients with chronic kidney failure is not solely an internal psychological attribute, but develops through continuous interaction with the surrounding social environment, particularly family support. Family involvement appears to play a reinforcing role in strengthening patients' confidence to adhere to hemodialysis therapy, regulate emotional responses, and maintain long-term treatment commitment.

This finding is in line with Bandura's theory, which states that self-efficacy can be increased through strong social support, successful experiences, verbal persuasion, and positive emotional conditions. Patients who feel supported are more confident in their ability to adhere to their hemodialysis schedule, maintain their diet, and cope with discomfort during therapy (Motuho Mendrofa et al., 2023). Thus, self-efficacy in patients with chronic kidney failure is greatly influenced by the quality of family support they receive. Priasmoro & Lestari, (2023) emphasize that social support reduces anxiety and enhances adaptive capacity. In patients with chronic kidney failure, family support fosters positive emotional conditions that strengthen their confidence in managing treatment demands. Consequently, patients become more capable of adhering to hemodialysis schedules, maintaining dietary restrictions, and coping with discomfort during therapy, demonstrating the crucial role of family support in shaping self-efficacy (Priasmoro & Lestari, 2023).

The strong association identified in this study suggests that interventions aimed at improving self-efficacy among patients with chronic kidney failure should extend beyond individual-focused approaches. Strengthening family involvement through education, counseling, and structured support programs may contribute significantly to enhancing patients' self-efficacy, improving treatment adherence, and ultimately supporting better health outcomes during long-term hemodialysis therapy.

The Relationship between family support and self-efficacy in chronic kidney failure patients



The correlation coefficient between self-efficacy and family support was 0.612, with a significance value of $p = 0.000$ ($p < 0.01$), according to the Spearman correlation test results. The two variables have a strong and significant positive association, according to this coefficient value. This means more family support respondents receive, the higher their self-efficacy. The Findings Priasmoro & Lestari, (2023) show that a sedentary lifestyle is associated with an increased risk of chronic diseases and high levels of stress in individuals.

Based on the theory above, there are some effects of the increasing unmanaged stress. For example, it can reduce an individual's ability to make decisions, regulate emotions, and cope with long-term health challenges. These conditions can be affected by low self-efficacy, such as an individual feeling not able to control the situations or to do the healthy behaviors needed. Vice versa, the study emphasizes the importance of pressing the negative effects of stress, including social support.

From an interpretative perspective, the researcher views family support not only as emotional assistance but also as a protective factor that strengthens patients' psychological resilience. Continuous encouragement, practical help, and emotional reassurance from family members enable patients to feel more capable and confident in managing their illness, which ultimately contributes to higher self-efficacy.

The support system, such as family support, is very important to increase stress regulation, motivation, self-confidence to adopt healthy habits, and to manage their conditions effectively. When the stress condition can be pressed through the support system effectively, the individual is better able to build self efficacy in facing the health challenges.

Thus, Priasmoro & Lestari, (2023) findings reinforce the conclusion that Family support significantly positively affected self-efficacy in this study can be explained through reduced stress mechanisms and increased adaptive capacity. Family support helps the individual feel more competent, confident, and better to prepare their healthy management. In conclusion, the changing of family support directly accompanies increasing the respondents' self-efficacy.

In line with these findings, this study highlights that improvements in family support are closely followed by increases in respondents' self-efficacy (Motuho Mendrofa et al., 2023). Strengthening family involvement may therefore be considered a key strategy in supporting patients with chronic kidney failure to better cope with treatment demands and long-term health challenges (RI, 2023).

Conclusion

This study shows that most chronic kidney failure patients undergoing hemodialysis have good family support and high self-efficacy.

Ethics approval and consent to participate

The research has implemented Ethical Approval from the Health Research Ethics Committee of ITSK RS Dr Soepraoen Kesdam V/BRW Malang Hospital certificate number KEPK-EC/362/XI/2025. Respondents were given explanations, the right to refuse, and signed informed consent forms. Data Confidentiality was maintained by using respondent codes and reporting results in aggregate.

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