



Family Resilience, Social Support, and Self-Efficacy among Hemodialysis Patients: A Cross-Sectional Study

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Received: 15 May 2026

Accepted: 14 September 2026

Available online: 1 October 2026

DOI: <https://doi.org/10.25077/njk.v22i2.489>

Abstract

Patients with chronic kidney disease (CKD) undergoing hemodialysis require strong self-efficacy to successfully adapt to lifelong treatment demands. Self-efficacy may be influenced by both internal and external factors, particularly social support and family resilience. However, limited studies have examined how these factors are associated with self-efficacy among patients receiving hemodialysis. This study aimed to examine the relationships among social support, family resilience, and self-efficacy among CKD patients undergoing hemodialysis. A cross-sectional study was conducted involving 78 patient-family caregiver dyads selected through total sampling. Data were collected using the Medical Outcomes Study Social Support Survey (MOS-SSS), Walsh Family Resilience Questionnaire (WFRQ), and Chronic Kidney Disease Self-Efficacy (CKD-SE) instrument. Spearman's rank correlation test was used to analyze relationships among variables. The findings revealed that social support was not significantly associated with self-efficacy ($r = 0.130$, $p = 0.257$). Conversely, family resilience demonstrated a moderate positive and statistically significant relationship with self-efficacy ($r = 0.404$, $p < 0.01$). These results suggest that family resilience showed a stronger positive association with self-efficacy than social support. The study emphasizes the importance of family-centered care in supporting patients with CKD undergoing hemodialysis. Nurses are encouraged to assess patients' psychosocial support systems, involve families in education and care planning, foster effective therapeutic communication, and promote adaptive coping mechanisms to improve patients' self-efficacy and treatment adaptation.

Keywords: Chronic Kidney Disease, Family Resilience, Hemodialysis, Self-Efficacy, Social Support.

INTRODUCTION

Chronic kidney disease (CKD) has become a major global health concern, affecting more than 10% of the world's population and an estimated 850 million individuals worldwide, ranging from mild kidney impairment to end-stage renal disease requiring renal replacement therapy (Francis et al., 2024; Kovesdy, 2022). In Indonesia, CKD was among the top ten leading causes of death in 2019, with a prevalence of 0.18% or approximately 638,178 cases based on the 2023 Indonesian Health Survey (Hidayangsih et al., 2023; Indonesian Ministry of Health, 2023). Patients with CKD generally require renal replacement therapy, including hemodialysis, Continuous Ambulatory Peritoneal Dialysis (CAPD), or kidney transplantation. However, hemodialysis remains the predominant modality in Indonesia, accounting for approximately 94% of dialysis treatments, while CAPD and kidney transplantation remain limited due to factors such as cost, infrastructure, healthcare workforce capacity, and accessibility of health services (Putri et al., 2022).



Hemodialysis has been shown to improve patients' survival rates and quality of life when performed regularly. Nevertheless, it also imposes substantial physical, psychological, social, and economic burdens. Patients are required to undergo hemodialysis sessions twice weekly for four to five hours, which may contribute to activity limitations, lifestyle changes, fatigue, pain, stress, anxiety, and depression (Faridah et al., 2021; Marthoenis et al., 2021). These challenges may also extend to family members, who often experience emotional exhaustion and financial strain associated with long-term caregiving, potentially affecting family functioning and their ability to provide optimal support (Ayuditiawati et al., 2020; Bahall et al., 2025). These persistent treatment-related demands require patients not only to adhere to therapy but also to develop confidence in their ability to manage symptoms, treatment routines, lifestyle changes, and self-care activities.

Self-efficacy, defined as an individual's belief in their ability to perform behaviors and manage challenging situations, is an important factor in this adaptive process. Among patients undergoing hemodialysis, higher self-efficacy has been associated with better treatment adherence, self-care management, dietary compliance, and independent health monitoring (Wang et al., 2024). Conversely, low self-efficacy may lead to treatment non-adherence, increased stress, and poorer quality of life (Oktarina & Sulistiawan, 2020). Self-efficacy is influenced by several factors, particularly social support and family resilience. Social support from family members, friends, and significant others can help patients cope with the physical and emotional challenges of hemodialysis through emotional support, information, tangible assistance, and positive social interaction (Safi et al., 2024; Sherbourne & Stewart, 2020). Meanwhile, family resilience refers to the family's ability to adapt and endure during crises through effective communication, positive relationships, and constructive problem-solving (Wei et al., 2024). Resilient families can create a stable, supportive environment that strengthens patients' confidence and ability to cope with long-term treatment demands (Permatasari et al., 2025).

Previous studies have reported positive associations between social support and self-efficacy among patients undergoing hemodialysis (Safi et al., 2024; Wang et al., 2024). Family resilience has also been identified as an important family-level resource that may support psychological adaptation and self-efficacy in the context of chronic illness (Permatasari et al., 2025). However, important gaps remain in the existing evidence. First, social support and family resilience have often been examined separately, limiting understanding of their relative contributions to patients' self-efficacy when considered within the same study. Second, previous research has predominantly relied on patient-reported perceptions of family-related resources, with limited attention to family resilience as reported directly by the patient's primary family caregiver. This distinction is important because social support and family resilience represent conceptually different resources operating at different levels: social support reflects the support perceived by the patient, whereas family resilience reflects the family's capacity to adapt collectively to the challenges associated with chronic illness. Examining these factors using information obtained from both members of the patient-family caregiver dyad may therefore provide a more comprehensive perspective on factors associated with patients' self-efficacy.

To address these gaps, the present study simultaneously examined social support and family resilience in relation to self-efficacy using matched data from patients undergoing hemodialysis and their primary family caregivers. Specifically, social support and self-efficacy were assessed from the patient's perspective, whereas family resilience was assessed by the corresponding family caregiver, with the two sources of information linked within the same patient-family caregiver dyad. This dyadic approach extends predominantly patient-centered research by incorporating a family-level perspective into the assessment of factors associated with patients' self-efficacy. Furthermore, evidence on these relationships remains limited in the Indonesian context, particularly in West Sumatra, where cultural and family structures may shape caregiving and adaptation to chronic illness.



Therefore, this study aimed to examine the relationships of social support and family resilience with self-efficacy among patients with CKD undergoing hemodialysis at Universitas Andalas Hospital and dr. Reksodiwiryo Hospital, Padang, Indonesia.

METHODS

This study employed a quantitative cross-sectional design to examine the relationship between social support, family resilience, and self-efficacy among patients with CKD undergoing hemodialysis. The study was conducted at the Hemodialysis Units of Universitas Andalas Hospital and dr. Reksodiwiryo Hospital, Padang, Indonesia, from December 2025 to January 2026. The population consisted of 78 patients with CKD undergoing routine hemodialysis and their primary family caregivers. The patient-family caregiver dyad was defined as the unit of analysis, with each patient-family pair treated as one matched observation. Patients completed the Medical Outcomes Study Social Support Survey (MOS-SSS) and the Chronic Kidney Disease Self-Efficacy (CKD-SE) instrument, whereas their corresponding family caregivers completed the Walsh Family Resilience Questionnaire (WFRQ). Each patient-family caregiver pair was assigned a unique dyad identification code to enable accurate linkage of data from the two respondents. The social support and self-efficacy scores reported by each patient were linked within the same dyad, while the family resilience score reported by the corresponding caregiver was linked to the self-efficacy score of that patient using the shared dyad identification code. Thus, the final dataset consisted of 78 matched patient-family caregiver dyads, with each dyad contributing one paired observation for the analysis of social support-self-efficacy and family resilience-self-efficacy relationships. Total sampling was applied. Inclusion criteria for patients were: undergoing hemodialysis for at least 3 months, aged ≥ 18 years, able to communicate, read, and write, accompanied by a primary family caregiver, and willing to participate. Patients with unstable medical conditions or cognitive impairment were excluded. Family caregivers were required to be aged ≥ 18 years, directly involved in patient care, able to communicate, read, and write, and willing to participate. Family members with severe mental disorders, sensory impairments, or the inability to complete the questionnaire were excluded.

Data were collected using three structured questionnaires: the Medical Outcomes Study Social Support Survey (MOS-SSS), the Walsh Family Resilience Questionnaire (WFRQ), and Chronic Kidney Disease Self-Efficacy (CKD-SE) instrument. The MOS-SSS was used to assess social support and consisted of 19 items covering emotional/informational support, tangible support, affectionate support, and positive social interaction. Each item was rated on a 5-point Likert scale ranging from 1 (never) to 5 (always), with total scores ranging from 19 to 95 (Sherbourne & Stewart, 1991). The MOS-SSS demonstrated good validity ($r = 0.361 > r\text{-table} = 0.30$) and excellent internal consistency (Cronbach's $\alpha > 0.952$) (Agustina et al., 2022). The instrument was selected because of its established validity and reliability across chronic disease populations and diverse cultural settings. Its applicability to patients undergoing hemodialysis has also been demonstrated by Agustina et al. (2022), who used the MOS-SSS to assess social support and adherence. Furthermore, a systematic review reported adequate internal reliability of the 19-item MOS-SSS across different languages and populations and recommended its use in clinical research (Dao-Tran et al., 2023). The WFRQ consisted of 32 items measuring three domains of family resilience, namely family belief systems, family organizational patterns, and communication and problem-solving. Responses were rated on a 4-point Likert scale ranging from 1 (strongly inappropriate) to 4 (strongly appropriate), with total scores ranging from 32 to 128 (Walsh, 2016).

The WFRQ demonstrated good validity ($r = 0.851$) and reliability (Cronbach's $\alpha = 0.868$) in the West Sumatran population (Amatul et al., 2022). It was selected because of its relevance to the cultural and social context of West Sumatra, with previous research confirming its validity and reliability for assessing family resilience in this population. The CKD-SE was used to measure patients' self-efficacy and consisted of 25 items, categorized into four dimensions: autonomy, self-integration, problem-



solving, and seeking social support. Each item was scored using a 4-point Likert scale ranging from 1 (not appropriate) to 4 (very appropriate), with total scores ranging from 25 to 100 (Lin et al., 2012). The CKD-SE instrument demonstrated good validity ($r = 0.59-0.91$) and high internal consistency (Cronbach's $\alpha = 0.845$) (Lenggogeni et al., 2021). It was selected because it was specifically developed for patients with chronic kidney disease and has demonstrated strong psychometric properties in this population. Its applicability to patients undergoing hemodialysis is further supported by Mirmazhari et al. (2022), who found that self-efficacy strongly predicted patient activation ($R^2 = 0.66$), supporting its relevance for assessing self-management-related outcomes in this population.

Data collection was conducted when patients attended the hospital for routine hemodialysis, accompanied by their primary family caregivers. Eligible participants were selected based on the inclusion and exclusion criteria. The objectives and procedures of the study were explained prior to participation, and written informed consent was obtained from all participants. Questionnaires were distributed directly to respondents and required approximately 10-20 minutes to complete, after which they were returned to the researchers.

Univariate analysis was performed using frequency distributions, means, and standard deviations. The normality of the total scores for social support, family resilience, and self-efficacy was assessed using the Kolmogorov-Smirnov test, which indicated non-normal distributions for all three variables ($p < 0.001$). Therefore, Spearman's rank correlation test, a non-parametric test appropriate for non-normally distributed data, was used to examine the relationships of social support and family resilience with self-efficacy. This study was approved by the Health Research Ethics Committee of the Faculty of Nursing, Universitas Andalas with ethical clearance number 602.layaketik/KEPKFKEPUNAND. The study also adhered to ethical principles, including autonomy, beneficence, non-maleficence, and justice.

RESULTS

Table 1 presents the demographic characteristics of CKD patients undergoing hemodialysis. Based on Table 1, the majority of hemodialysis patients in this study were middle-aged and older adults, namely 51-60 years (30.8%) and >60 years (28.2%). The gender distribution was relatively balanced between males (51.3%) and females (48.7%). Most patients had a moderate educational background, with the highest proportions having completed senior high school (39.7%) and elementary school (24.4%). More than half of the patients were married (67.9%), indicating family support during hemodialysis. In addition, the majority of patients had undergone hemodialysis therapy for less than one year (62.8%), while 28.2% and 9% had been receiving hemodialysis for 1-5 years and 6-10 years, respectively.

Table 1. Characteristic of CKD Patients Undergoing Hemodialysis (n = 78)

Characteristic	f	%
Age		
<30 years	3	3,8
30-40 years	10	12,8
41-50 years	19	24,4
51-60 years	24	30,8
>60 years	22	28,3
Gender		
Male	40	51,3
Female	38	48,7
Education Level		
Primary school	19	24,4
Junior high school	8	10,3
Senior high school	31	39,7
Diploma	3	3,8
Bachelor's degree	15	19,2

Others	2	2,6
Marital Status		
Single	6	7,7
Married	53	67,9
Divorced/Separated	5	6,4
Widowed	14	17,9
Length of Hemodialysis Treatment		
<1 year	49	62,8
1-5 years	22	28,2
6-10 years	7	9

Table 2 presents the demographic characteristic of family caregiver of CKD patients undergoing hemodialysis. Based on Table 2, the majority of family caregivers accompanying hemodialysis patients were aged 41-50 years and 51-60 years (25.6% each). Most family caregivers were female (60.3%), with the highest level of education being senior high school (51.3%), followed by bachelor's degree holders (24.4%). In terms of occupation, more than half of the family caregivers were unemployed (59%), while 41% were employed. The majority of family caregivers were married (83.3%). Based on the patient's relationship, most accompanying family members were the patient's spouse (59%), followed by children (30.8%), siblings (9%), and parents (1.3%).

Table 2. Characteristic of Family Caregivers of CKD Patients Undergoing Hemodialysis (n = 78)

Characteristic	f	%
Age		
<30 years	13	16,7
30-40 years	19	24,4
41-50 years	20	25,6
51-60 years	20	25,6
>60 years	6	7,7
Gender		
Male	31	39,7
Female	47	60,3
Education Level		
Primary school	6	7,7
Junior high school	6	7,7
Senior high school	40	51,3
Diploma	5	6,4
Bachelor's degree	19	24,4
Others	2	2,6
Occupation		
Employed	32	41
Unemployed	46	59
Marital Status		
Single	13	16,7
Married	65	83,3
Relationship of Family Member to Patient		
Spouse	46	59
Parent	1	1,3
Child	24	30,8
Sibling	7	9

Based on Table 3, it can be seen that the highest mean score in the MOS-SSS questionnaire was found in the emotional/informational support dimension (mean = 4.65), while the lowest mean score was observed in the tangible support dimension (mean = 4.58). Overall, the total social support score had a mean value of 4.61, indicating that most respondents had a relatively high level of social support.

In the WFRQ questionnaire, the highest mean score was found in the family belief system domain (mean = 3.43), whereas the lowest mean score was identified in the family organizational patterns domain (mean = 3.25). The overall mean score for family resilience was 3.36, suggesting that most respondents demonstrated relatively good family resilience.

For the CKD-SE questionnaire, the highest mean scores were found in the autonomy and seeking social support subscales (mean = 3.38), while the lowest mean score was observed in the problem-solving subscale (mean = 2.97). The overall mean score for self-efficacy was 3.24, indicating that the majority of respondents had relatively good self-efficacy.

Table 3. Social Support, Family Resilience, and Self-Efficacy (n=78)

Variables and Sub Variables	Mean	SD	Min-Max
Social Support			
Emotional/Informational Support	4,65	0,41	1-5
Tangible Support	4,58	0,43	1-5
Affectionate Support	4,59	0,48	1-5
Positive Social Interaction	4,63	0,50	1-5
Total Score	4,61	0,39	1-5
Family Resilience			
Family Belief System	3,43	0,38	1-4
Family Organizational Patterns	3,25	0,40	1-4
Communication and Problem-Solving	3,39	0,43	1-4
Total Score	3,36	0,35	1-4
Self-Efficacy			
Autonomy	3,38	0,43	1-4
Self-Integration	3,24	0,43	1-4
Problem-Solving	2,97	0,41	1-4
Seeking Social Support	3,38	0,43	1-4
Total Score	3,24	0,35	1-4

Based on Table 4, the analysis revealed that there was no significant relationship between social support and self-efficacy among patients with chronic kidney disease undergoing hemodialysis ($r = 0.130$, $p > 0.05$). In contrast, family resilience showed a consistent and significant positive relationship with self-efficacy, with the total family resilience score being significantly positively correlated with the total self-efficacy score ($r = 0.404$, $p < 0.01$).

Table 4. The Relationship Between Social Support and Family Resilience with Self-Efficacy (n=78)

Independent Variables	Dependent Variables	n	r	Direction of Correlation	Strength of Correlation	p-value
Self-Efficacy	Social Support	78	0,130	Positive	Weak	0,257
	Family Resilience	78	0,404	Positive	Moderate	<0,001

DISCUSSION

Social Support of CKD Patient Undergoing Hemodialysis

The present study found that patients with CKD undergoing hemodialysis reported a relatively high level of social support, with an overall mean score of 4.61. This finding indicates that most patients perceived adequate support from people around them despite the physical, psychological, and social demands of long-term hemodialysis. Social support represents an important psychosocial resource in chronic illness because it may help patients cope with treatment-related stress, maintain social connectedness, and manage the practical demands of long-term disease management. Consistent with

Alshraifeen et al. (2020), greater social support among patients undergoing hemodialysis has been associated with lower anxiety, depression, and psychological distress, as well as better treatment adherence and disease management.

The emotional and informational support dimension had the highest mean score (4.65). This finding suggests that patients perceived adequate emotional attention, empathy, and access to information from people around them. Emotional support helps patients cope with psychological stress caused by intensive hemodialysis routines, while informational support improves patients' understanding of their condition and treatment. These forms of support may facilitate adaptation by reducing perceived stress and helping patients navigate the demands of long-term treatment (Noviana & Zahra, 2022). Positive social interaction also showed a relatively high mean score (4.63), suggesting that patients were still able to maintain meaningful social relationships within their families and communities, which may contribute to improved psychosocial well-being and reduced stress (Alshraifeen et al., 2020). The tangible support dimension had the lowest mean score (4.58), although it remained relatively high, indicating that patients received practical assistance, such as financial support, physical assistance during hemodialysis sessions, and help with daily activities. Adequate tangible support is important because physical limitations and dependence on others may affect patients' ability to maintain treatment continuity and adherence to hemodialysis schedules (Erickson et al., 2024). The affectionate support dimension also showed a high mean score (4.59), reflecting the presence of emotional warmth and affection from family members and significant others, which may reduce feelings of loneliness and enhance psychological well-being among hemodialysis patients (Lilympaki et al., 2016).

Despite the relatively high level of perceived social support, this study found no significant association between social support and self-efficacy ($r = 0.130$, $p > 0.05$). This finding indicates that the availability of social support does not necessarily translate into greater confidence in patients' ability to manage their illness and treatment. One possible explanation is that social support and self-efficacy represent different psychological processes. Social support primarily provides external resources, such as emotional reassurance, information, and practical assistance, whereas self-efficacy reflects an individual's perceived capability to perform specific behaviors and manage challenges (Zanbar & Nouman, 2021). Thus, although social support may reduce emotional and practical burdens, it may not directly strengthen patients' sense of personal competence or mastery (Gao et al., 2022). Importantly, the effect of social support may depend on how the support is provided. Support that promotes autonomy and active participation in self-care may be more conducive to patients' confidence and self-management, whereas overly protective or substitutive support may reduce opportunities for patients to exercise their own capabilities (Stawnychy et al., 2021). In contrast, when others take over activities that patients could potentially perform themselves, the immediate burden may be reduced but opportunities to develop autonomy and mastery may be limited. This distinction is relevant because self-efficacy is more closely related to an individual's perceived capability to perform behaviors than to the amount of assistance available from others (Dinh & Bonner, 2023).

In the present study, social support was already relatively high across participants, which may have resulted in limited variability in perceived support and consequently reduced the ability to detect a linear association with self-efficacy. In other words, when most patients perceive that they receive adequate support, differences in the amount of support may be insufficient to explain differences in their self-efficacy. This interpretation should be considered as a possible explanation rather than a definitive cause of the non-significant finding.

Overall, the findings suggest that although social support is an important external resource for patients undergoing hemodialysis, its presence alone may not be sufficient to strengthen CKD-specific



self-efficacy. The extent to which support contributes to self-efficacy may depend on whether it facilitates patients' active involvement, autonomy, and opportunities to experience successful management of their condition. Therefore, the high level of social support observed in this study should be interpreted primarily as an indication of a supportive social environment, rather than as evidence that patients will necessarily possess stronger confidence in managing CKD.

Family Resilience of CKD Patient Undergoing Hemodialysis

Family resilience among CKD patients undergoing hemodialysis was relatively high, with a total mean score of 3.36. This finding reflects the ability of families to maintain adaptive functioning despite the long-term challenges associated with chronic illness and hemodialysis treatment. Family resilience is considered a dynamic process in which families utilize internal and external resources to cope with stress, maintain family functioning, and support sick family members during chronic health conditions. Among the three domains, family belief system had the highest mean score (3.43), indicating that families generally possessed strong shared beliefs, optimism, and meaningful perspectives in dealing with difficult situations. Strong family beliefs may help families interpret chronic stress more positively and facilitate adaptation to long-term illness (Luo et al., 2024). This interpretation can also be understood through Bandura's theory of self-efficacy in Safi et al. (2024) that self-efficacy is strengthened through several sources of efficacy information, particularly mastery experiences, vicarious experiences, verbal persuasion, and the interpretation of physiological and emotional states. Within the family context, encouragement and expressions of confidence may function as verbal persuasion, while observing family members successfully cope with treatment-related difficulties may provide vicarious experiences. More importantly, when families allow patients to participate in manageable aspects of their care and recognize their successful efforts, patients may accumulate mastery experiences that strengthen their perception of personal capability (Kleppang et al., 2023).

Communication and problem-solving also showed a relatively high mean score (3.39), suggesting that family members maintained open communication, shared information effectively, and worked collaboratively to resolve problems related to patient care. Effective communication collaborative problem-solving have been recognized as an important component of family resilience because it strengthens emotional support and collective decision-making during stressful situations (Zhang et al., 2024). For patients undergoing hemodialysis, these processes may provide opportunities to express concerns, understand treatment-related problems, participate in decisions, and contribute to solutions. Consequently, communication within a resilient family may support self-efficacy by creating opportunities for active participation and problem-solving rather than positioning patients solely as recipients of care (Walsh, 2003).

Family organizational patterns had the lowest mean score (3.25), although it remained within a relatively high range. This finding indicates that families were generally able to maintain adaptive family structures, including role flexibility, routine management, and utilization of social and economic resources in supporting hemodialysis care. Well-organized family functioning may help families manage caregiving responsibilities and minimize the disruption caused by chronic illness (Wang et al., 2024). This finding suggests that families generally maintained flexibility in roles, routines, and the mobilization of available resources. In the context of hemodialysis, such flexibility may be particularly important because treatment requires families to accommodate recurring schedules, changes in daily activities, and potentially changing caregiving responsibilities (Hovadick et al., 2021; Kuang et al., 2023). However, family organization may contribute to patients' self-efficacy not merely by providing assistance, but by creating an environment in which patients can remain involved in their own care. When family members provide support while allowing patients to retain appropriate responsibilities, patients may have greater opportunities to experience successful



performance and develop a sense of competence. This interpretation is consistent with Bandura's emphasis on mastery experiences as a particularly important source of self-efficacy (Safi et al., 2024). Overall, the relatively high family resilience observed in this study indicates that families generally demonstrated adaptive belief systems, organizational flexibility, and effective communication and problem-solving in responding to the demands of long-term hemodialysis. These processes may provide a plausible pathway through which the family environment contributes to patients' self-efficacy by fostering meaning and encouragement, facilitating active participation, and creating opportunities for mastery and collaborative problem-solving. Thus, family resilience may support self-efficacy not simply through the presence of family assistance, but through family processes that enable patients to develop greater competence and confidence in managing CKD and hemodialysis.

Self-Efficacy of CKD Patient Undergoing Hemodialysis

Self-efficacy among CKD patients undergoing hemodialysis was relatively good, with a total mean score of 3.24. This finding indicates that most patients had adequate confidence in their ability to manage their health conditions and self-care activities related to chronic kidney disease. Study by Alwi et al. (2024) has shown that higher self-efficacy among hemodialysis patients is associated with better quality of life, self-care behaviors, and adaptation to long-term treatment demands. Nguyen et al. (2022) also demonstrated that patients with higher self-efficacy tend to be more actively involved in self-care, better able to cope with psychosocial stress, and more adaptive to lifestyle changes required during hemodialysis therapy.

Autonomy had the highest mean score (3.38), suggesting that patients were generally confident in making decisions related to their health and managing aspects of their care independently. Similarly, seeking social support also showed a relatively high mean score (3.38), indicating that patients were confident in seeking assistance when facing difficulties. These strengths can be reinforced through patient-centered nursing care that promotes shared decision-making, active participation in care planning, and appropriate involvement of family members. From the perspective of Bandura's self-efficacy theory, opportunities to participate in care and successfully perform health-related behaviors may provide mastery experiences that strengthen perceived capability (Kleppang et al., 2023). Self-integration showed a mean score of 3.24, reflecting patients' ability to maintain positive self-care behaviors despite physical and psychological challenges. Clinically, this dimension is particularly relevant because hemodialysis requires patients to integrate treatment routines with dietary restrictions, fluid management, medication use, physical limitations, and changes in daily activities. Nursing interventions should therefore extend beyond providing information and focus on helping patients translate recommendations into realistic daily routines. In contrast, the problem-solving dimension had the lowest mean score (2.97), suggesting that some patients still experienced difficulties in managing health-related problems effectively. These findings are consistent with previous studies reporting that autonomy, self-integration, problem-solving ability, and social support seeking are important predictors of adaptive behavior and quality of life among hemodialysis patients (Mirmazhari et al., 2022).

Overall, the relatively good self-efficacy observed in this study suggests that patients possessed important strengths in autonomy and help-seeking, while problem-solving represented a potential area for further development. Accordingly, nursing care should not focus solely on correcting deficits but should build on existing strengths while creating opportunities for patients to actively practice self-management. Interventions combining individualized education, shared decision-making, goal setting, guided problem-solving, and appropriately structured family support may be particularly valuable. By providing patients with repeated opportunities to participate, make decisions, and successfully manage treatment-related challenges, nursing care can foster mastery experiences and strengthen their confidence in managing CKD and long-term hemodialysis.



The Relationship Between Social Support and Family Resilience with Self-Efficacy among CKD Patient Undergoing Hemodialysis

The results of this study showed that there was no significant relationship between social support and self-efficacy among CKD patients undergoing hemodialysis. Although patients generally perceived a high level of social support, greater perceived support was not necessarily accompanied by higher confidence in managing CKD and its treatment. This result differs from previous studies reporting a positive relationship between social support and self-efficacy among hemodialysis patients (Safi et al., 2024). The discrepancy may reflect the conceptual distinction between these constructs. According to Social Cognitive Theory, social support represents an environmental factor that can facilitate health behavior, whereas self-efficacy is primarily a personal cognitive judgment concerning one's capability to perform a particular behavior (Banik et al., 2021). Accordingly, support is more likely to strengthen self-efficacy when it facilitates mastery experiences, constructive feedback, modeling, and active participation rather than merely providing practical or emotional assistance. Recent evidence similarly suggests that social support may be more effective in strengthening self-efficacy when incorporated into interventions that promote active self-management and learning (Farris et al., 2025).

The characteristics of the participants may also help explain the absence of a significant association. Most participants were middle-aged or older adults and had undergone hemodialysis for less than one year, suggesting that many were still adapting to the physical, psychological, and behavioral demands of treatment. During this early treatment period, self-efficacy may depend more strongly on personal mastery experiences, disease knowledge, psychological adaptation, and experience with self-care than on the general availability of social support (Hafezieh et al., 2020). An integrative review similarly indicates that self-care among hemodialysis patients is shaped by multiple interacting factors, including individual characteristics, knowledge, psychological conditions, healthcare relationships, and family and peer support (Yasin et al., 2024). Thus, patients may perceive substantial social support while differing considerably in their ability to internalize and use that support to develop confidence in independent self-management.

At this stage, self-efficacy may be more strongly influenced by long-term personal beliefs, life experiences, and adaptation processes rather than short-term external support. In addition, the relatively low to moderate educational background of most patients may have caused social support to function more as practical and emotional assistance rather than as a factor promoting autonomy, decision-making, and problem-solving abilities related to self-efficacy (Achury-Saldaña et al., 2025; Zou et al., 2024). Previous studies also suggested that the effect of social support on self-efficacy is often indirect and mediated by factors such as coping strategies, psychological resilience, treatment adherence, and health literacy (Noviana & Zahra, 2022; Thomas et al., 2016).

In contrast, family resilience showed a significant positive relationship with self-efficacy ($r = 0.404$, $p < 0.01$). This finding suggests that family resilience plays an important role in strengthening patients' confidence in managing their health conditions. This finding is consistent with previous evidence demonstrating a positive relationship between family resilience and self-efficacy among patients undergoing hemodialysis (Safi et al., 2024). Family resilience encompasses adaptive belief systems, organizational flexibility, and communication and problem-solving processes, which may create an environment that supports both emotional adjustment and active engagement in self-care.

Families that communicate effectively, maintain shared beliefs, adapt roles according to patients' changing needs, and participate in problem-solving may create an environment in which patients feel understood while also being encouraged to participate actively in their own care. Recent evidence



also emphasizes the important contribution of family members to self-care among hemodialysis patients, particularly through assistance with treatment adherence, daily care, and motivation (Yasin et al., 2024).

The family characteristics in the present study further support this interpretation. Most family caregivers were middle-aged adults and were closely related to the patients, with spouses representing the largest caregiver group. Such close relationships may facilitate frequent communication and coordinated decision-making concerning treatment and daily self-care. In the context of long-term hemodialysis, these family processes may provide patients with emotional security while simultaneously helping them develop adaptive responses to treatment-related challenges (Wang et al., 2024). The family therefore functions not merely as a source of assistance but as an adaptive system that can influence how patients interpret illness-related challenges and respond to them (Safi et al., 2024). This may explain why family resilience demonstrated a stronger association with self-efficacy than general social support in the present study.

Overall, the findings suggest that social support and family resilience should not be regarded as interchangeable psychosocial resources. Social support may provide patients with important emotional, informational, and practical assistance, but its contribution to self-efficacy may depend on whether the support promotes active participation, mastery, and autonomy. In contrast, family resilience encompasses adaptive family processes that may more directly influence how patients cope with illness-related challenges and develop confidence in managing their condition. Therefore, family-centered interventions combined with patient-centered education and self-management strategies may provide a more comprehensive approach to strengthening self-efficacy and ultimately improving self-management and quality of life among patients with CKD undergoing hemodialysis.

CONCLUSION

Social support, family resilience, and self-efficacy among CKD patients undergoing hemodialysis were found to be generally good. The study showed that there was no significant relationship between social support and self-efficacy, indicating that the influence of social support may depend on the suitability of support to patients' needs, individual perceptions, coping mechanisms, self-management, and psychological adaptation. In contrast, family resilience demonstrated a consistent, positive, and significant relationship with self-efficacy, highlighting the important role of family resilience in strengthening patients' confidence in managing long-term hemodialysis treatment.

Hemodialysis units are recommended to develop programs that enhance family resilience and psychosocial support through structured education, family counseling, and support groups. Nurses need to improve psychosocial assessment skills, therapeutic communication, and family-centered interventions to support patients' adaptation and self-efficacy during long-term therapy. Nursing education institutions should strengthen learning related to psychosocial care, self-efficacy, social support, and family resilience in chronic disease management. Future studies are recommended to use longitudinal or experimental designs with larger and more diverse samples to further explore factors influencing self-efficacy among hemodialysis patients.

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