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Self-motivation, family support, and hemodialysis adherence among patients with chronic kidney disease

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Abstract

Background: Maintenance hemodialysis requires sustained adherence to treatment schedules, medication, dietary recommendations, and fluid restrictions. Adherence may be influenced by patients' internal motivation and the support available within the family.
Purpose: To examine the associations of self-motivation and family support with hemodialysis therapy adherence among patients with chronic kidney disease.
Method: This cross-sectional study included 143 patients receiving maintenance hemodialysis at two hospitals in Tangerang, Indonesia. Participants were recruited through total sampling from September to November 2025. Self-motivation, family support, and treatment adherence were assessed using structured questionnaires. Associations were analyzed using Spearman's rank correlation test.
Results: Low self-motivation was the largest category, reported by 53 participants (37.1%), and low family support was reported by 51 participants (35.7%). Regarding adherence, 53 participants (37.1%) were partially adherent and 48 (33.6%) were non-adherent. Self-motivation ($\rho = 0.611$, $p < 0.001$) and family support ($\rho = 0.607$, $p < 0.001$) each showed a strong positive correlation with hemodialysis adherence.
Conclusion: Higher self-motivation and stronger family support were associated with greater adherence to hemodialysis therapy. Nursing strategies that strengthen patient engagement and involve family members may support adherence to long-term treatment.

Keywords: Chronic Kidney Disease; Family Support; Hemodialysis; Self-Motivation; Treatment Adherence.

INTRODUCTION

Chronic kidney disease (CKD) is a major global health problem that can progress to kidney failure requiring dialysis or transplantation. Maintenance hemodialysis (HD) is a life-sustaining therapy, but it also requires patients to follow demanding schedules, medication regimens, dietary recommendations, and fluid restrictions over prolonged periods. Contemporary CKD guidance emphasizes patient-centered care, shared decision-making, and sustained engagement in long-term disease management (Stevens, Ahmed, Carrero, Foster, Francis, Hall, & Levin, 2024).

Adherence to the HD regimen remains challenging because treatment must be integrated into patients' daily responsibilities, symptoms, emotional responses, and social roles. Non-adherence may include missed or shortened dialysis sessions, inconsistent medication use, and difficulty following dietary or fluid restrictions. Studies have shown that adherence is shaped by a combination of clinical, psychological, social, and healthcare-related factors rather than by knowledge alone (Ozen, Cinar, Askin, Mut, Turker, 2019; Taylor, Umeukeje, Santos, McNabb, Crews, & Hladek, 2023). Structured self-management interventions have therefore been developed to help patients translate treatment

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recommendations into sustainable daily practices (Griva, Nandakumar, Jo-an, Lam, McBain, & Newman, 2018; Ren, Lian, Liu, Thomas-Hawkins, Zhu, & Shen, 2019).

Self-motivation is particularly relevant because maintenance HD requires repeated, goal-directed behaviors despite fatigue, discomfort, and treatment burden. Evidence from dialysis populations indicates that self-efficacy, empowerment, and self-management capacity are associated with stronger engagement in treatment and self-care behaviors (Almutary & Tayyib, 2021; Hou, Zhou, Wang, & Li, 2022; Kim & Cho, 2021; Ma, Liu, Lin, Liao, Hung, Chen, Lu, Ho, Zheng, 2022). Indonesian evidence has similarly linked psychological factors with self-management behaviors and interdialytic weight gain among patients undergoing HD (Natashia, Yen, Chen, & Fetzer 2019).

Family support may complement internal motivation by providing emotional encouragement, information, practical assistance, and reinforcement of treatment routines. Recent studies have identified positive associations between social support, family resilience, self-efficacy, self-management, and adherence among patients receiving HD (Alatawi, Alaamri, & Almutary, 2024; Safi, Areshtanab, Ghafourifard, & Ebrahimi, 2024; Song, Chen, Wang, Yang, & Jiang, 2022; Tao, Liu, Zhuang, Fan, Hua, & Ni, 2023). Family-centered education and caregiver support may also strengthen the home environment in which patients manage long-term treatment demands (Sotoudeh & Alavi, 2023).

Although self-motivation and family support are both clinically relevant, evidence regarding their simultaneous associations with HD adherence remains limited in the local hospital context. This study therefore examined the associations of self-motivation and family support with hemodialysis therapy adherence among patients with CKD receiving treatment at two hospitals in Tangerang, Indonesia.

RESEARCH METHOD

This analytic cross-sectional study was conducted in the hemodialysis units of Sari Asih Karawaci Hospital and Sari Asih Ciledug Hospital, Tangerang, Indonesia, from September to November 2025. The study population comprised patients receiving routine maintenance HD. Total sampling was used, resulting in 143 participants who had undergone HD for more than three months, were able to communicate, and were hemodynamically stable at the time of data collection.

Data were collected using a demographic questionnaire and three structured questionnaires assessing self-motivation, family support, and hemodialysis therapy adherence. Each study-variable questionnaire comprised eight items with total scores ranging from 8 to 40. Self-motivation and family support were categorized as low (8–18), moderate (19–29), or high (30–40). Hemodialysis adherence was categorized as non-adherent (8–18), partially adherent (19–29), or adherent (30–40).

Continuous data were summarized using the mean, standard deviation, and range, whereas categorical data were presented as frequencies and percentages. Spearman's rank correlation test was used to assess the associations of self-motivation and family support with hemodialysis adherence. Statistical significance was set at $p < 0.05$.

RESEARCH RESULTS

Table 1. Characteristics and Study Variables of Hemodialysis Patients (N = 143)

Variable	Results
Age, years, mean ± SD (range)	56.71 ± 10.87 (26–78)
<45	19/13.3
45-55	41/28.7
56-65	57/39.8
>65	26/18.2

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Gender (n/%)	
Male	81/56.6
Female	62/43.4
Education level (n/%)	
Elementary school	4/2.8
Junior high school	14/9.8
Senior high school	113/79.0
Higher education	12/8.4
Employment status (n/%)	
Employed	46/32.2
Unemployed	97/67.8
Marital status (n/%)	
Single	3/2.1
Widowed (male)	6/4.2
Widowed (female)	12/8.4
Married	122/85.3
Hemodialysis frequency (n/%)	
Twice weekly	143/100.0
Duration of hemodialysis (n/%)	
0–24 months	57/39.86
25–60 months	69/48.25
>60 months	16/11.19
Comorbidity (n/%)	
Diabetes mellitus	48/33.6
Hypertension	95/66.4
Health insurance (n/%)	
National Health Insurance (JKN)	143/100.0

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Self-motivation (n/%)	
Low (8–18)	53/37.1
Moderate (19–29)	48/33.6
High (30–40)	42/29.4
Family support (n/%)	
Low (8–18)	51/35.7
Moderate (19–29)	50/35.0
High (30–40)	42/29.4
Hemodialysis adherence (n/%)	
Non-adherent (8–18)	48/33.6
Partially adherent (19–29)	53/37.1
Adherent (30–40)	42/29.4

Table 1 shows that the mean age of the participants was 56.71 ± 10.87 years, with a range of 26–78 years. Most participants were male (56.6%), had completed senior high school (79.0%), were unemployed (67.8%), and were married (85.3%). All participants underwent HD twice weekly and were covered by the National Health Insurance program. The largest duration category was 25–60 months (48.25%), and hypertension was the most frequently reported comorbidity (66.4%). Low self-motivation (37.1%) and low family support (35.7%) were the largest categories, while partial adherence was the most frequently reported adherence category (37.1%).

Table 2. Associations of Self-Motivation and Family Support with Hemodialysis Adherence

Variable	Spearman's ρ	p-value
Self-motivation and hemodialysis adherence	0.611	<0.001
Family support and hemodialysis adherence	0.607	<0.001

Table 2 shows that self-motivation was strongly and positively correlated with hemodialysis adherence ($\rho = 0.611$, $p < 0.001$). Family support also showed a strong positive correlation with adherence ($\rho = 0.607$, $p < 0.001$). These findings indicate that higher self-motivation and stronger family support were associated with greater adherence to the hemodialysis regimen.

DISCUSSION

This study found strong positive correlations between both self-motivation and family support and adherence to hemodialysis therapy. The findings indicate that adherence is associated with both an internal capacity to sustain treatment-related behavior and an external support system that helps patients manage the practical and emotional demands of long-term dialysis.

The association between self-motivation and adherence is consistent with evidence that self-efficacy, empowerment, and self-management capacity contribute to engagement in dialysis care. Patients who feel capable of managing their condition are more likely to organize treatment routines, monitor symptoms, and persist with recommended behaviors (Almutary & Tayyib, 2021; Hou et al., 2022; Kim & Cho, 2021). Studies of self-management interventions have also reported improvements in adherence-related behaviors and clinical indicators when patients receive structured support to set goals and manage

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treatment demands (Griva et al., 2018; Hosseini, Jackson, Chegini, Dehghan, Mazloum, Haghani, & Bahramnezhad, 2023; Ren et al., 2019). Indonesian research has similarly shown that psychological factors are related to self-management behaviors among patients undergoing HD (Natashia et al., 2019).

Family support was also strongly associated with adherence. Family members may facilitate attendance at dialysis sessions, reinforce medication and dietary routines, assist with transportation, and provide emotional encouragement during periods of fatigue or distress. This interpretation is supported by studies linking social support with adherence, self-management, self-efficacy, and family resilience in HD populations (Alatawi et al., 2024; Safi et al., 2024; Song et al., 2022). Dyadic research further suggests that patients and family caregivers influence one another's psychological adjustment, emphasizing the importance of involving families in supportive care (Tao et al., 2023). Family-centered education may therefore benefit both patients and caregivers (Sotoudeh & Alavi, 2023).

Only 29.4% of participants were categorized as adherent, while the remaining participants were partially adherent or non-adherent. This pattern is consistent with evidence that adherence to dialysis schedules, medication, diet, and fluid restrictions remains difficult for many patients (Ozen et al., 2019). Interventions such as structured home visits, cognitive-behavioral approaches, digital education, and peer support have shown potential to improve treatment engagement, self-care, or psychosocial outcomes (Pasyar, Rambod, & Jowkar, 2020; Pooresmaeil, Iranpour, & Aghamohammadi, 2023; Valsaraj, Bhat, Prabhu, & Kamath, 2021). Recent evidence also indicates that self-efficacy and social support may influence medication adherence directly and indirectly through psychological pathways (Saguban, Shanmugam, Rondilla, Buta, Alatawi, Maestrado, Alkubati, Mostoles, Jr., Alrashidi, & Alreshidi, 2025).

The participant profile may also have influenced adherence. Most participants were unemployed, and all attended HD twice weekly, indicating that treatment was embedded in a highly structured routine. Nevertheless, long-term treatment burden, comorbid conditions, and the need to integrate dialysis with family and social responsibilities may still create substantial barriers. Previous Indonesian studies have highlighted the relevance of self-management, family support, and quality of life in patients receiving HD (Asih & Aji, 2022; Sulymbona, Setyawati, & Khasanah, 2020).

These findings support nursing strategies that assess motivation and family support as part of routine HD care. Individualized goal setting, motivational communication, family education, and practical planning may help patients maintain adherence. However, the cross-sectional design does not establish causality, and the use of self-report questionnaires may have introduced response bias. The study was also conducted in two hospitals using total sampling and did not adjust for potential confounders such as depression, health literacy, comorbidity severity, or socioeconomic status. Further longitudinal and intervention studies are needed.

CONCLUSION

Self-motivation and family support were each strongly and positively associated with hemodialysis therapy adherence among patients with chronic kidney disease. Participants with higher self-motivation and stronger family support tended to report greater adherence to the treatment regimen. These findings emphasize the importance of integrating patient engagement and family involvement into nursing care for individuals receiving maintenance hemodialysis.

SUGGESTION

Future studies should use longitudinal or intervention designs, validated condition-specific instruments, and multivariable analyses to clarify how motivation and family support influence different dimensions of hemodialysis adherence. Larger multicenter samples and objective adherence indicators, such as attendance records, interdialytic weight gain, and laboratory measures, should also be considered.

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