

THE ROLE OF SELF-EFFICACY AND FAMILY SUPPORT IN ADHERENCE TO FLUID RESTRICTION AMONG PATIENTS WITH CHRONIC KIDNEY DISEASE UNDERGOING HEMODIALYSIS

Kevina Almadhea Bramanti, Enny Virda Yuniarti, Raras Merbawani

Bina Sehat PPNI University, Mojokerto, Indonesia

Corresponding Author: kevinaalmadhea93@gmail.com

ABSTRACT

Self-efficacy and family support are important factors associated with adherence to fluid restriction, which helps prevent complications in patients with chronic kidney disease undergoing hemodialysis. This study examined the association between self-efficacy, family support, and adherence to fluid restriction among patients undergoing hemodialysis. A correlational study with a cross-sectional design was conducted among 69 patients selected using consecutive sampling at RSI Sakinah Mojokerto. Data were collected using the Chronic Kidney Disease Self-Efficacy (CKD-SE), Family Support Scale (FSS), and Fluid Control in Hemodialysis Patients Scale (FCHPS), and analyzed using Spearman's rank correlation. Most participants had high self-efficacy (71.0%), good family support (84.1%), and adherence to fluid restriction (59.4%). Self-efficacy ($r = 0.789$, $p = 0.001$) and family support ($r = 0.455$, $p < 0.001$) were significantly associated with adherence to fluid restriction. Higher self-efficacy and better family support were associated with greater adherence to fluid restriction among patients undergoing hemodialysis.

Keywords: *Chronic Kidney Disease, Family Support, Fluid Restriction, Hemodialysis, Self Efficacy*

INTRODUCTION

Chronic kidney disease (CKD) is a major global health problem associated with high morbidity, mortality, and healthcare costs. More than 850 million people worldwide are affected by kidney disease, placing a substantial burden on healthcare systems (KDIGO, 2024). As kidney function progressively declines, many patients require maintenance hemodialysis to replace impaired renal function (Fitriani & Hartanti, 2022). Although hemodialysis prolongs survival, adherence to fluid restriction remains essential to prevent fluid overload, hypertension, pulmonary edema, cardiovascular complications, and hospitalization (Dewi & Setiyono, 2022). However, maintaining adherence to fluid restriction is challenging because it requires continuous self-management and behavioral commitment. Among the factors associated with adherence to fluid restriction, self-efficacy and family support have received considerable attention because they may enhance patients' confidence and ability to maintain recommended fluid intake (Safitri et al., 2023).

Adherence to fluid restriction remains a major challenge among patients undergoing hemodialysis. A systematic review and meta-analysis involving 23 studies with 11,209 patients reported that approximately 60,6% of patients worldwide were nonadherent to fluid restriction (Kaur Kang, 2022). Similarly, a study conducted in Indonesia found that 57,5% of hemodialysis patients were non-compliant with fluid restrictions (Andri et al., 2025). These findings indicate that nonadherence to fluid restriction continues to be an important clinical problem and highlight the need to identify modifiable factors that can improve patients' adherence.

Self-efficacy is recognized as an important psychological factor influencing health-related behaviors. According to Bandura's Social Cognitive Theory, self-efficacy refers to an

individual's belief in their ability to perform behaviors necessary to achieve specific goals (Bandura, 1997). Patients with higher self-efficacy are more likely to regulate their fluid intake, cope with treatment demands, and maintain adherence to prescribed fluid restrictions. Previous studies have consistently demonstrated that higher self-efficacy is significantly associated with better adherence to fluid restriction among patients undergoing hemodialysis (Perdana & Yen, 2021).

In addition to psychological factors, family support plays an important role in promoting adherence to fluid restriction. Emotional, informational, instrumental, and appraisal support provided by family members can strengthen patients' motivation and facilitate adherence to treatment recommendations (Astiawaty et al., 2025). Previous studies have shown that greater family or social support is associated with better adherence to dietary and fluid restrictions (Qoyyimah et al., 2025). However, other studies have reported no significant association between family support and fluid restriction adherence, suggesting that the influence of family support may vary across different populations and clinical settings (Umami & Rohayati, 2025).

Previous studies have demonstrated the importance of self-efficacy and family support in promoting adherence to fluid restriction among patients undergoing hemodialysis. However, these factors have often been investigated independently or included among multiple predictors, resulting in inconsistent findings regarding their relative contributions. Furthermore, evidence examining the simultaneous associations of self-efficacy and family support with fluid restriction adherence in Indonesian hemodialysis populations remains limited. Therefore, this study aimed to examine the relationships between self-efficacy, family support, and fluid restriction adherence among patients undergoing hemodialysis at RSI Sakinah Mojokerto.

This study extends the existing literature by providing empirical evidence on the combined roles of psychological and social factors in fluid restriction adherence among Indonesian patients undergoing hemodialysis. The findings may inform nursing practice by highlighting the importance of strengthening patients' self-efficacy while actively engaging family members to support long-term adherence to fluid restriction.

METHOD

This study employed a quantitative correlational design with a cross-sectional approach to examine the associations between self-efficacy, family support, and fluid restriction adherence among patients undergoing hemodialysis. The study was conducted at the Hemodialysis Unit of RSI Sakinah Mojokerto, Indonesia. The study population consisted of 215 patients undergoing hemodialysis, from whom 69 respondents were recruited using a consecutive sampling technique with inclusion and exclusion criteria.

Data were collected using four instruments: a respondent characteristics questionnaire, the Chronic Kidney Disease Self-Efficacy (CKD-SE) Scale to assess self-efficacy, the Family Support Scale (FSS) to measure perceived family support, and the Fluid Control in Hemodialysis Patients Scale (FCHPS) to assess adherence to fluid restriction. All instruments had previously demonstrated acceptable validity and reliability. Data were collected over a two-week period in April 2026 during the respondents' scheduled hemodialysis sessions. Before data collection, the researcher explained the objectives and procedures of the study, and respondents who agreed to participate signed written informed

consent. The questionnaires were administered through face-to-face structured interviews, in which the researcher read each question aloud and recorded the respondents' answers on the questionnaire. This approach was used to ensure that all respondents clearly understood each question and to minimize missing or incomplete responses.

The collected data were analyzed using IBM SPSS Statistics version. Descriptive statistics were used to summarize respondents' characteristics and study variables, with categorical data presented as frequencies and percentages. The associations between self-efficacy, family support, and fluid restriction adherence were analyzed using Spearman's rank correlation test because the variables were not normally distributed. Statistical significance was determined at a p-value of <0.05 . Ethical approval for this study was obtained from the Health Research Ethics Committee of Bina Sehat PPNI University No.57/KEP/UBS-PPNI/III/2026. Permission to conduct the study was obtained from RSI Sakinah Mojokerto. All participants provided written informed consent prior to participation.

FINDING AND DISCUSSION

RESEARCH RESULT

UNIVARIATE ANALYSIS

Table 1: Participant Characteristics (n = 69)

General Data	Frequency (f)	Percentage (%)
Usia		
Dewasa Awal (26–35 tahun)	7	10,1
Dewasa Akhir (36–45 tahun)	12	17,4
Lansia Awal (46–55 tahun)	20	29,0
Lansia Akhir (56–66 tahun)	30	43,5
Total	69	100
Jenis Kelamin		
Laki-laki	36	52,2
Perempuan	33	47,8
Total	69	100
Pendidikan		
SD	23	33,3
SMP	14	20,3
SMA	22	31,9
PT (Perguruan Tinggi)	10	14,5
Total	69	100
Pekerjaan		
Bekerja	21	30,4
Tidak Bekerja	48	69,6
Total	69	100
Status Pernikahan		
Menikah	68	98,6
Belum Menikah	1	1,4
Total	69	100

Lama Menjalani Hemodialisis		
<1 tahun		
1-3 tahun	10	14,5
4-5 tahun	25	36,2
>5 tahun	19	27,5
	15	21,7
Total	69	100
Keluarga yang mendampingi		
Ada		
Tidak Ada	34	49,3
	35	50,7
Total	69	100

Source: Primary Data, 2026

A total of 69 patients undergoing hemodialysis participated in this study. Most participants were aged 56–66 years 30 people (43.5%), were male 36 people (52.2%), had completed elementary school 23 people (33.3%), were unemployed 48 people (69.6%), and were married 68 people (98.6%). Most participants had undergone maintenance hemodialysis for 1–3 years 25 people (36.2%). In addition, more than half of the participants were not accompanied by family members during their hemodialysis sessions 35 (50.7%).

Distribution of Self-Efficacy, Family Support, and Fluid Restriction Adherence

Table 2: Study Variables

Variable	Frequency (f)	Percentage (%)
Self Efficacy		
High	49	71,0
Moderate	17	24,6
Low	3	4,3
Total	69	100
Family Support		
Good	58	84,1
Moderate	9	13,0
Poor	2	2,9
Total	69	100
Fluid Restriction Adherence		
Adherent	41	59,4
Moderate Adherent	16	23,3
Non-Adherent	12	17,4
Total	69	100

Source: Primary Data, 2026

Most respondents demonstrated high self-efficacy 49 people (71.0%), good family support 58 people (84.1%), and adherence to fluid restriction 41 people (59.4%). Only a small proportion of respondents had low self-efficacy, inadequate family support, or were non-adherent to fluid restriction.

BIVARIATE ANALYSIS

Association of Self-Efficacy, Family Support, and Fluid Restriction Adherence

Table 3: Association Between Self-Efficacy and Fluid Restriction Adherence

Self Efficacy	Kepatuhan Restriksi Cairan						Total		Nilai r Spearman Rho	P value
	Tidak Patuh		Cukup Patuh		Patuh		N	%		
	n	%	n	%	n	%				
Rendah	3	100	0	0	0	0	3	100	0,789	0,000
Sedang	9	52,9	7	41,2	1	5,9	17	100		
Tinggi	0	0	9	18,4	40	81,6	49	100		
Total	12	17.4	16	23.2	41	59.4	69	100		

Source: Primary Data, 2026

The results in Table 3 show a statistically significant association between self-efficacy and adherence to fluid restriction ($p = 0.001$, $r = 0.789$). The correlation coefficient indicated a strong positive relationship, suggesting that patients with higher self-efficacy tended to demonstrate better adherence to fluid restriction.

Table 4: Association Between Family Support and Fluid Restriction Adherence

Dukungan Keluarga	Kepatuhan Restriksi Cairan						Total		Nilai r Spearman Rho	P-value
	Tidak Patuh		Cukup Patuh		Patuh		N	%		
	n	%	n	%	n	%				
Kurang	1	50	1	50	0	0	2	100	0,455	0,000
Cukup	6	66,7	1	11,1	2	22,2	9	100		
Baik	5	8,6	14	24,1	39	67,2	58	100		
Total	12	17.4	16	23.2	41	59.4	69	100		

Source: Primary Data, 2026

The results in Table 4 show a statistically significant association between family support and adherence to fluid restriction ($p < 0.001$, $r = 0,455$). The correlation coefficient indicated a moderate positive relationship, suggesting that greater family support was associated with better adherence to fluid restriction among patients undergoing hemodialysis.

Table 5: Indicator Self Efficacy

No	Subvariabel	N	Nilai r Spearman Rho	p-value
1.	Autonomy	69	0,359	0,002
2.	Self Integration		0,818	0,000
3.	Problem Solving		0,455	0,000
4.	Seeking Social Support		0,333	0,005

Source: Primary Data, 2026

Table 5 shows that all self-efficacy indicators have significance values of $p < 0.05$, with self-integration exhibiting the highest correlation coefficient ($r = 0.818$) falling into the "very strong" category.

Table 6: Indicator Family Support

No	Subvariabel	N	Nilai r Spearman Rho	p-value
1.	Dukungan Emosional	69	0,315	0,008
2.	Dukungan Informasional		0,476	0,000
3.	Dukungan Instrumental		0,367	0,002
4.	Dukungan Penghargaan		0,396	0,001

Source: Primary Data, 2026

Table 6 shows that all sub-variables of family support yielded significance values of $p < 0.05$, with the highest correlation coefficient observed for informational support ($r = 0.476$), falling into the moderately strong category.

DISCUSSION

1. Self efficacy, Family Support, and Fluid Restriction Adherence

Table 2 shows that the participants' self-efficacy levels were predominantly in the high category, with 49 participants (71.0%), followed by the moderate category with 17 participants (24.6%), and the low category with 3 participants (4.3%). These findings are consistent with the study conducted by (Mailani et al., 2022), which reported that among 81 respondents, the majority (56.2%) had high self-efficacy, while 43.8% demonstrated low self-efficacy. The high level of self-efficacy observed in the present study may be attributed to the predominance of the *self-integration* indicator. This indicator reflects patients' ability to adapt to changes resulting from their illness and to integrate treatment regimens into their daily activities. These findings suggest that most participants had successfully adjusted to living with a chronic condition.

Regarding family support, the results indicated that 58 participants (84.1%) received good family support, 9 participants (13.0%) received moderate support, and only 2 participants (2.9%) received poor family support. These findings are in agreement with (Wijaya et al., 2025), who reported that the majority of respondents (84.8%) received full family support. In this study, family support consisted of emotional, instrumental, informational, and appraisal support. These forms of support helped patients cope with the treatment process, enhanced their sense of security, and strengthened their motivation to consistently adhere to fluid restriction. Furthermore, the presence of family members as the primary support system increased patients' confidence in managing their treatment, thereby facilitating adherence to the therapeutic regimen recommended by healthcare professionals.

Regarding fluid restriction adherence, 41 participants (59.4%) were categorized as adherent, 16 participants (23.3%) as moderately adherent, and 12 participants (17.4%) as non-adherent. These findings are consistent with the study (Sukma & Isnaini, 2021), which reported that the majority of respondents (61.9%; $n = 26$) demonstrated good adherence to fluid restriction. The high level of adherence observed in the present study may be attributed to the high scores on the *behavior* indicator. This finding suggests that regular hemodialysis

experience has fostered adaptive behaviors that enable patients to manage their condition more effectively (Laily & Nursanti, 2024). Through repeated treatment experiences and the information received during therapy, patients become more aware of the consequences of non-adherence to fluid restriction. In addition, the high levels of self-efficacy and good family support observed among participants may have further contributed to their adherence to the prescribed fluid restriction regimen.

2. Association Between Self Efficacy and Fluid Restriction Adherence

The correlation analysis presented in Table 3 showed a statistically significant association between self-efficacy and fluid restriction adherence, with a significance value of $p < 0.001$ and a correlation coefficient of $r = 0.789$. These findings indicate a significant relationship between self-efficacy and adherence to fluid restriction among patients with chronic kidney disease undergoing hemodialysis at RSI Sakinah Mojokerto. The correlation coefficient demonstrates a very strong positive relationship, indicating that higher levels of self-efficacy are associated with greater adherence to fluid restriction.

These findings are consistent with those of (Perdana & Yen, 2021), who reported a significant relationship between self-efficacy and adherence to fluid restriction among patients undergoing hemodialysis, indicating that patients with higher self-confidence were better able to control their daily fluid intake. Similarly, (Safitri et al., 2023) identified self-efficacy as an important factor contributing to patients' adherence to hemodialysis therapy, particularly in promoting effective health-related behavioral control. Furthermore, (Hidayah & Sari, 2022) found that higher levels of self-efficacy were associated with greater consistency in adhering to fluid restriction, thereby reducing the risk of complications related to fluid overload.

Based on the analysis of the family support dimensions, informational support showed the highest correlation coefficient ($r = 0.476$), indicating that family members played an active role in providing information, guidance, and reminders regarding fluid restriction management (Khusniyati et al., 2023). In contrast, emotional support demonstrated the lowest correlation coefficient ($r = 0.315$), suggesting that not all patients received adequate emotional support, such as empathy, care, and psychological encouragement from their family members.

Based on the analysis of the *self-efficacy* dimensions, *self-integration* showed the highest correlation coefficient ($r = 0.818$), indicating that patients were able to integrate fluid restriction behaviors into their daily routines. This may have contributed to better adherence, as fluid restriction had become part of their everyday lifestyle. In contrast, *seeking social support* demonstrated the lowest correlation coefficient ($r = 0.333$), suggesting that some patients were less likely to seek social support when encountering difficulties. This finding indicates that patients tended to rely more on their own abilities than on external support, although family support remained an important facilitating factor in the process of behavioral adaptation.

3. Association Between Family Support and Fluid Restriction Adherence

The results demonstrated a significant relationship between family support and adherence to fluid restriction among patients undergoing hemodialysis ($p < 0.001$; $r = 0.455$), indicating a moderate positive correlation. These findings suggest that greater family support

is associated with higher adherence to fluid restriction, although its contribution appears to be less substantial than that of *self-efficacy*.

These findings are consistent with the study by (Duha et al., 2025), which reported that family support contributes to adherence to fluid restriction but primarily functions as a facilitating factor rather than the principal determinant of behavioral change among patients undergoing hemodialysis. Similarly, (Yulianti & Tresnawan, 2025) found that family support was significantly associated with fluid restriction adherence; however, psychological factors and patients' self-management abilities were more influential determinants. Comparable findings were also reported by (Safi et al., 2024) who concluded that although family support was significantly associated with adherence, its role was primarily to reinforce, rather than directly determine, patients' adherence behaviors.

Analysis of the family support dimensions revealed that informational support had the highest score, indicating that family members played an active role in providing information, guidance, and reminders regarding fluid restriction management (Khusniyati et al., 2023). In contrast, emotional support had the lowest score, suggesting that not all patients received adequate emotional support, such as empathy, attention, and psychological encouragement from their family members.

These findings indicate that the family support received by patients was predominantly informational rather than emotional. This pattern may explain the moderate strength of the relationship between family support and fluid restriction adherence. Although patients received sufficient information to support self-care, the emotional support needed to strengthen intrinsic motivation was not consistently available to all participants, thereby limiting the overall influence of family support on adherence.

CONCLUSION

This study found that most patients undergoing hemodialysis at RSI Sakinah Mojokerto had high levels of *self-efficacy*, good family support, and good adherence to fluid restriction. Significant positive associations were observed between *self-efficacy* and fluid restriction adherence ($p < 0.001$, $r = 0.789$), as well as between family support and fluid restriction adherence ($p < 0.001$, $r = 0.455$). These findings suggest that *self-efficacy* plays a more prominent role than family support in influencing patients' adherence to fluid restriction.

Patients with higher *self-efficacy* were better able to integrate fluid restriction behaviors into their daily lives, whereas family support functioned as an external factor that reinforced and facilitated adherence. Overall, enhancing both *self-efficacy* and family support is essential for promoting long-term adherence to fluid restriction among patients undergoing hemodialysis.

Future studies are recommended to employ a *mixed-methods* design combining quantitative and qualitative approaches to provide a more comprehensive understanding of this topic. Qualitative research may further explore family members' experiences in providing support, including the phenomenon of *caregiver burden*, given that chronic kidney disease is a long-term condition requiring continuous family involvement and support.

REFERENCES

- Andri, K., Papertu, N., & Nency, E. (2025). *Hubungan Dukungan Keluarga Dengan Kepatuhan Pasien Chronic Kidney Disease Dalam Menjalani Hemodialisa di Ruang Hemodialisa Semen Padang Hospital Tahun 2025*. 19(2), 757–765.
- Astiawaty, A., Siagian, I. O., Sujana, T., & Keperawatan, F. (2025). *Dukungan Keluarga Sebagai Prediktor Kepatuhan Pembatasan Cairan: Implikasi Klinis Terhadap Interdialytic Weight Gain (Idwg) Pada Pasien Hemodialisis*. 19, 55–63.
- Bandura, A. (1997). Self Efficacy in Changinng Societies. In *Cambridge University Press*. <https://doi.org/10.1109/EVER.2017.7935960>
- Dewi, N., & Setiyono, E. (2022). Pengaruh Dukungan Keluarga Terhadap Kepatuhan Dalam Pembatasan Asupan Cairan Pada Pasien Chronic Kidney Disease (CKD) Yang Menjalani Terapi Hemodialisa di Radjak Hospital Cileungsi. *Jurnal Ilmiah Kesehatan*, 14(2), 322–334. <https://doi.org/10.37012/jik.v14i2.1330>
- Duha, A., Zega, P., Buarnirun, Y., Saputri, A., & Iradewi. (2025). *The Relationship of Family Support to Fluid Restriction Compliance in Renal Failure Patients*. 13(2), 349–362.
- Fitriani, A., & Hartanti, R. D. (2022). Hubungan Self-Efficacy dengan Kepatuhan Pembatasan Cairan Pada Pasien Hemodialisa: Literature Review. *Seminar Nasional Kesehatan*, 1172–1181.
- Hidayah, R. L., Yuniarti, E. V., & Merbawani, R. (2025). *Hubungan Kepatuhan Pembatasan Cairan Dengan Hipotensi Intradialitik Pada Pasien Gagal Ginjal Kronik Yang Menjalani Hemodialisa Di Rumah Sakit Islam Sakinah Mojokerto*. Universitas Bina Sehat PPNI Mojokerto.
- Hidayah, N., & Sari, I. P. (2022). Interventions to Increase the Adherence of Fluid Restrictions in Hemodialysis Clients : A Systematic Review. *Scientific Journal of Nursing*.
- Kaur Kang, H. (2022). The Worldwide Prevalence of Nonadherence to Diet and Fluid Restrictions Among Hemodialysis Patients: A Systematic Review and Meta-analysis. *Journal of Renal Nutrition*, 32(6), 658–669. <https://doi.org/https://doi.org/10.1053/j.jrn.2021.11.007>
- KDIGO. (2024). *KDIGO 2024 Clinical Practice Guideline For The Evaluation And Management*. 105(4).
- Khusniyati, N., Forwaty, E., & Delvira, W. (2023). Pengaruh Kepatuhan Batasan Cairan, Dukungan Keluarga terhadap Kualitas Hidup pada Pasien Hemodialisa. *Jkep*, 8(2), 137–156. <https://doi.org/10.32668/jkep.v8i2.1353>
- Laily, D., & Nursanti, I. (2024). *Model Konsep Teori Adaptasi Callista Roy Pada Asuhan Keperawatan dengan Anorexia Nervosa*. 3(8), 108–123.
- Mailani, F., Mahathir, M., & Yuni, A. R. (2022). Self-Efficacy and Compliance Fluid Intake Restrictions in Chronic Kidney Disease Patients Undergoing Hemodialysis: A Cross-

Sectional Study. *Jurnal Keperawatan Komprehensif*, 8(April), 203–211.

- Perdana, M., & Yen, M. (2021). *Factors Associated With Adherence to Fluid Restriction in Patients Undergoing Hemodialysis in Indonesia*. 29(6), 1–8.
- Qoyyimah, D., Tinggi, S., Kesehatan, I., & Malang, M. (2025). Hubungan Dukungan Keluarga Dengan Kepatuhan Cairan Pasien CKD yang Menjalani Hemodialisis. *Media Husada Journal of Nursing Science*, 6(1), 48–54. <https://mhjns.widyagamahusada.ac.id>
- Safi, F., Areshtanab, H. N., Ghafourifard, M., & Ebrahimi, H. (2024). The association between self-efficacy, perceived social support, and family resilience in patients undergoing hemodialysis: a cross-sectional study. *BMC Nephrology*, 25(1), 1–9. <https://doi.org/10.1186/s12882-024-03629-4>
- Safitri, D., Pahria, T., & Rahayu, U. (2023). Factors associated with dietary and fluid restriction adherence of chronic kidney disease patients undergoing hemodialysis. *Media Keperawatan Indonesia*, 6(3), 198. <https://doi.org/10.26714/mki.6.3.2023.198-208>
- Sukma, R., & Isnaini, N. (2021). Hubungan Dukungan Keluarga Dan Efikasi Diri Terhadap Kepatuhan Asupan Cairan Pada Pasien Gagal Ginjal Kronik Diruang Hemodialisa RSI Purwokerto. *Jurnal Keperawatan Muhammadiyah*, 5(September), 220–229. <https://doi.org/10.30651/jkm.v0i0.5397>
- Wijaya, L. T., M, A. R., & Suwandi, E. W. (2025). Family Support And Fluid Restriction Compliance In Chronic Kidney Failure Patients Undergoing Hemodialysis; A Correlative Study. *University Research Colloquium*, 577–589.
- Yulianti, Y., & Tresnawan, T. (2025). *Determinants of Fluid Restriction Adherence among Hemodialysis Patients : A Single-Center Cross-Sectional Study Key Messages : 4(3)*, 984–994.
- Yuniarti, E. V., & Setyanita, I. (2016). Kepatuhan dalam pembatasan cairan pada pasien ggkdi ruang rawat inap rs. Gatoel mojokerto. *Jurnal keperawatan sehat*, 13(01).