MSC Journal Of Medical Surgical Concerns
ISSN 2797-8400 (Print)
ISSN 2797-8419 (Online)
Doi: 10.56922

NOMOR 286/DST/C3/HM.01.00/26

ARTICLE INFORMATION
Received: February, 09, 2026
Revised: April, 16, 2026
Available online: May, 30, 2026
at: https://e-jurnal.iphorr.com/index.php/msc

Family support and fluid restriction adherence among hemodialysis patients

Sandy Sulistiawati*, Moch Aspihan, Iskim Luthfa

Fakultas Ilmu Keperawatan, Universitas Islam Sultan Agung
Corresponding Author: *E-Mail : Sandysulistiawati09@gmail.com

Abstract

Background: Chronic Kidney Disease (CKD) is a chronic health problem that requires continuous hemodialysis therapy. The success of hemodialysis therapy is strongly influenced by patient compliance with fluid intake restriction to prevent complications such as fluid overload and increased Interdialytic Weight Gain (IDWG). One important factor that plays a role in improving patient compliance is family support.
Purpose: To determine the relationship between family support and compliance with fluid intake restriction among hemodialysis patients.
Method: A quantitative design with a cross-sectional approach and a descriptive correlational method. The research sample consisted of 100 hemodialysis patients selected using a total sampling technique. Data were collected using the Family Support Scale (FSS) to measure family support and The Fluid Control in Hemodialysis Patients Scale (FCHPS) to measure compliance with fluid intake restriction. Data analysis was conducted using univariate and bivariate analysis with the Somers' d test.
Results: Data indicated that most respondents had good family support (91%) and a high level of compliance with fluid intake restrictions (90%). Furthermore, bivariate analysis demonstrated a strong, positive, and significant relationship between family support and adherence to fluid intake restrictions among hemodialysis patients ($p = 0.008$, $r = 0.631$).
Conclusion: A significant relationship between family support and compliance with fluid intake restriction in hemodialysis patients. Optimal family support plays an important role in improving patient compliance; therefore, nurses and healthcare professionals are expected to actively involve family members in education and management of hemodialysis patient care.

Keywords: Adherence; Chronic Kidney Disease; Family Support; Fluid Restriction; Hemodialysis; Interdialytic; Weight Gain.

INTRODUCTION

Chronic Kidney Disease (CKD) is a global health disorder with serious implications, defined as structural or functional kidney damage lasting ≥ 3 months accompanied by a decrease in Glomerular Filtration Rate (GFR) to < 60 mL/min/1.73 m² (Indonesian Society of Nephrology, 2020). Hemodialysis as the primary therapy aims to replace renal function in removing toxins and regulating body fluid through the principles of diffusion and osmosis (Putri, Dewi, & Ludiana, 2023). In Indonesia, the Basic Health Research recorded a CKD prevalence of 0.38% (713,783 individuals), of whom 60% require dialysis (Ministry of Health of the Republic of Indonesia, 2020). The cumulative number of patients undergoing dialysis reached 60,526 with a total prevalence of 127,900 patients (Indonesian Society of Nephrology, 2020). Based on the prevalence of CKD patients undergoing hemodialysis in Banten according to the Basic Health Research, the figure

DOI: https://doi.org/10.56922/msc.v6i1.3011

was approximately 0.25% or 33,578 patients (Ministry of Health of the Republic of Indonesia, 2020).

The primary problem faced by CKD patients is the increase in fluid volume between two dialysis sessions, characterized by edema, shortness of breath, and weight gain. Compliance with fluid intake is a key component in determining the health and quality of life of hemodialysis patients (Dewi & Karwati, 2023). Adherence to therapy and fluid restriction is an important concern for the benefit of patients themselves, since non-compliance results in the accumulation of harmful substances from metabolic products in the blood. This condition causes the already-high rates of mortality and morbidity to rise even further (Iswara & Muflihatin, 2021). Various factors contribute to this non-compliance, including the patient's level of knowledge and internal motivation (Aprianti, Anggraini, & Noviasari, 2025). Its success depends on compliance with fluid restriction, measured through Intradialytic Weight Gain (IDWG) with an ideal limit of 2.5–3.5% of dry body weight (Wijayanti, Pujiarto, & Dewi, 2024). However, reality shows high non-compliance: a study at RSUD Bahteramas found that 67% of patients experienced IDWG > 4% due to excessive fluid intake (Gire & Sulaiman, 2023). Effective behavior and patient attitudes toward these restrictions are fundamental to achieving controlled fluid management (Rahmaputri & Anandhita, 2025).

Many factors contribute to increased IDWG, including patient and family-related factors. Family support is needed to keep patients consistent in controlling their fluid intake (Oka, 2023). Social support is recognized globally as a fundamental element in improving adherence to complex treatment regimens in hemodialysis patients (Alatawi, Alaamri, & Almutary, 2024). Family support is ideally expected to serve as a pillar of compliance through four dimensions: emotional, informational, instrumental, and appraisal (Fauziah, Fadilah, Nazala, Rohima, & Zahra, 2025). Furthermore, family involvement can mitigate psychological burdens such as anxiety and provide a detachment mechanism from the stress of illness (Tsabita, Anggraini & Faizin, 2024; Cong, Jianyi, Xiaoran, Qin, Nian, Xianglin, & Zuyang, 2026). Previous research at PKU Muhammadiyah Hospital and other Indonesian hospitals has demonstrated that structured family support significantly improves fluid restriction adherence (Safira, Setiawati, & Widiastuti, 2025; Teguhandany, Aprisunadi, Jamiatun, & Susanti, 2024; Tifany, Safuni, & Amalia, 2024).

This study aims to examine effective family support within the cultural context of Banten. Non-compliance with fluid restriction increases the risk of heart failure, hospitalization, and mortality (Ministry of Health of the Republic of Indonesia, 2020). Optimizing the role of the family not only enhances clinical adherence but also improves the patient's overall quality of life and reduces psychological stress related to the duration of treatment (Arisandy & Carolina, 2023; Abualhommos, Al Hawaj, Al-Khalaif, Althuwaini, Albasri, Balghounim, & Alsaqer, 2025; Putri, 2025).

RESEARCH METHOD

A quantitative study with a cross-sectional and descriptive correlational design was conducted to identify the relationship between family support as the independent variable and adherence to fluid intake restriction as the dependent variable among hemodialysis patients at Sari Asih Hospital, Serang. The study involved 100 hemodialysis patients selected using a total sampling technique.

Data were collected using the Family Support Scale (FSS) questionnaire to measure family support. The instrument was based on the theory of family support proposed by Friedman (1998) and further developed from the theoretical concept of family support by Dunst, Trivette, and Deal (2007). The questionnaire assessed several dimensions of family support, including emotional, informational, instrumental, and physical support.Compliance with fluid intake restriction was measured using the Fluid Control in Hemodialysis Patients Scale (FCHPS), developed to assess patients' knowledge, behavior, and attitudes toward fluid intake control (Albayrak Cosar & Cinar Pakyuz, 2016). The Indonesian-translated version of the FCHPS adapted for the local context was used in this study (Tifany et al., 2024). The instrument consists of 24 items, with total scores ranging from 24 to 72; higher scores indicate better compliance with fluid intake restriction (Rahmaputri & Anandhita, 2025).

Data analysis was performed using statistical software. Univariate analysis was conducted to describe respondent characteristics, while bivariate analysis was used to examine the relationship between family support and adherence to fluid intake restriction. The Somers' d test was applied as the statistical test, with the level of statistical significance set at $p < 0.05$ and correlation strength considered strong at $r > 0.6$

Sandy Sulistiawati*, Moch Aspihan, Iskim Luthfa

Fakultas Ilmu Keperawatan, Universitas Islam Sultan Agung
Corresponding Author: Sandy Sulistiawati. *Email: Sandysulistiawati09@gmail.com

DOI: https://doi.org/10.56922/msc.v6i1.3011

RESEARCH RESULTS

Table 1. Demographic and Clinical Characteristics of Hemodialysis Patients (N=100)

Variable	Results
Age (n/%) (Mean±SD)(Range)(Year)	(54.11±10.38)(17–75)
17–25 (Late Adolescent)	1/1.0
26–35 (Young Adult)	8/8.0
36–45 (Middle-Aged Adult)	5/5.0
46–55 (Pre-Elderly)	33/33.0
56–65 (Early Elderly)	46/46.0
>65 (Elderly)	7/7.0
Gender (n/%)	
Male	45/45.0
Female	55/55.0
Education Level (n/%)	
Primary	16/16.0
Secondary	55/55.0
Higher Education	27/27.0
Occupation (n/%)	
Unemployed	49/49.0
Employed	38/38.0
Retired	13/13.0
Underlying Disease (n/%)	
Hypertension	50/50.0
Diabetes Mellitus	38/38.0
Others	12/12.0
Duration of Hemodialysis (n/%)	
<1 Year	27/27.0
1–5 Years	53/53.0
>5 Years	20/20.0
Interdialytic Weight Gain (n/%)	
<2%	8/8.0
2–4%	51/51.0
4–6%	28/28.0
>6%	13/13.0

Sandy Sulistiawati*, Moch Aspihan, Iskim Luthfa

Fakultas Ilmu Keperawatan, Universitas Islam Sultan Agung
Corresponding Author: Sandy Sulistiawati. *Email: Sandysulistiawati09@gmail.com

DOI: https://doi.org/10.56922/msc.v6i1.3011

Table 1 presents the demographic and clinical characteristics of the respondents. The largest proportion of respondents were in the early elderly age group (56–65 years; 46.0%) and were female (55.0%). Geographically, 85.0% of the respondents resided in Serang City, and the most prevalent education level was senior high school (55.0%). Clinical data indicated that hypertension was the most common underlying disease (50.0%), and most patients received twice-weekly hemodialysis (98.0%). Notably, the cohort demonstrated high rates of good family support (91.0%) and fluid intake compliance (90.0%).

Table 2. Relationship Between Family Support and Compliance with Fluid Intake Restriction

Family Support	Compliance with Fluid Intake Restriction		
	High	Moderate	Poor
Good	87	4	0
Moderate	3	1	2
Poor	0	2	1

The bivariate analysis in Table 2, utilizing the Somer's d test, demonstrates a statistically significant relationship between family support and compliance with fluid intake restriction $p = 0.008$. The correlation coefficient $r = 0.631$ signifies a strong positive relationship, indicating that enhanced family support is significantly associated with superior compliance

A significant relationship between family support and adherence to fluid intake restrictions among hemodialysis patients at Sari Asih Hospital, Serang, with a p-value of 0.008 and a strong positive correlation (r = 0.631). These findings indicate that higher levels of family support are associated with better adherence to fluid intake restrictions, which is a crucial component in the management of patients undergoing hemodialysis.

The majority of respondents in this study demonstrated good family support (91%) and high adherence (90%). This condition may be influenced by the dominant age group of respondents, which was early elderly (56–65 years). Patients in this age group tend to rely more on family members for daily care and disease management. Family involvement plays a critical role in reminding, supervising, and motivating patients to comply with treatment recommendations, including fluid restrictions. This aligns with the theoretical concept where family support encompasses emotional, informational, instrumental, and appraisal dimensions that collectively influence patient behavior (Friedman, 1998).

The findings of this study are consistent with previous research indicating that family support significantly improves adherence among hemodialysis patients. A study conducted at PKU Muhammadiyah Hospital reported a significant relationship between family support and fluid restriction adherence (p = 0.000), emphasizing the importance of family involvement in patient care (Safira et al., 2025). Similarly, other studies have highlighted that patients who receive strong family support are more likely to maintain controlled fluid intake and achieve optimal Interdialytic Weight Gain (IDWG), thereby reducing the risk of complications such as fluid overload, hypertension, and cardiovascular events (Teguhandany et al., 2024; Tifany et al., 2024).

From a behavioral perspective, family support acts as an external reinforcement that strengthens patients' motivation and self-control. Emotional support helps reduce psychological stress, informational support enhances patient knowledge, and instrumental support assists in monitoring daily fluid intake. These combined effects contribute to better adherence behaviors. Conversely, patients with limited family support are more likely to experience difficulties in maintaining fluid restrictions, leading to increased IDWG and poorer clinical outcomes.

Despite the overall high level of adherence observed, a small proportion of patients still

DISCUSSION

Sandy Sulistiawati*, Moch Aspihan, Iskim Luthfa

Fakultas Ilmu Keperawatan, Universitas Islam Sultan Agung
Corresponding Author: Sandy Sulistiawati. *Email: Sandysulistiawati09@gmail.com

DOI: https://doi.org/10.56922/msc.v6i1.3011

demonstrated moderate to poor compliance. This suggests that, in addition to family support, other factors such as individual motivation, health literacy, duration of hemodialysis, and comorbid conditions may also influence adherence. Therefore, interventions should not only focus on family involvement but also address patient-centered factors.

The findings of this study have important implications for nursing practice. Healthcare professionals, particularly nurses, should actively involve family members in education and counseling programs related to fluid management. Strengthening family-based interventions can enhance patient adherence and ultimately improve clinical outcomes and quality of life among hemodialysis patients.

However, this study has several limitations. The use of a cross-sectional design limits the ability to establish causality between variables. Additionally, data were collected using self-reported questionnaires, which may be subject to response bias. Future research is recommended to use longitudinal designs and include additional variables such as psychological factors and healthcare system support to provide a more comprehensive understanding of adherence behavior in hemodialysis patients.

CONCLUSION

In this study, the following conclusions can be drawn: Most respondents were female and aged 56–65 years, representing the late productive age group, which is commonly associated with cumulative comorbidities such as hypertension and diabetes mellitus. Family support among hemodialysis patients was predominantly categorized as good, indicating that most respondents received adequate support in managing fluid intake restrictions. Compliance with fluid intake restriction was also predominantly in the high category, indicating that patients were able to monitor their dry weight gain and maintain IDWG within the recommended limits.

There was a significant relationship between family support and compliance with fluid intake restriction, with a p-value of 0.008 (< 0.05). The findings indicate that better family support is associated with higher compliance with fluid intake restriction among hemodialysis patients. Furthermore, the correlation coefficient of 0.631 demonstrates a strong relationship between family support and compliance with fluid intake restriction in hemodialysis patients.

REFERENCES

Abualhommos, A. K., Al Hawaj, M. A., Al-Khalaif, A. A. A., Althuwaini, M. A., Albasri, M. J., Balghounim, M. R., & Alsaqer, M. J. (2025). Assessment for Quality of Life for Patients with Chronic Kidney Diseases in Saudi Arabia: A Cross-Sectional Study. *Bahrain Medical Bulletin*, *47*(1).

Alatawi, A. A., Alaamri, M., & Almutary, H. (2024, October). Social support and adherence to treatment regimens among patients undergoing hemodialysis. In *Healthcare* (Vol. 12, No. 19, p. 1958). MDPI.

Albayrak Cosar, A., & Cinar Pakyuz, S. (2016). Scale development study: The F luid C ontrol in H emodialysis P atients. *Japan Journal of Nursing Science*, *13*(1), 174-182.

Aprianti, M., Anggraini, M. T., & Noviasari, N. A. (2025). Analisis Faktor-Faktor Kepatuhan Menjalani Hemodialisis Pada Pasien Penyakit Ginjal Kronik Di RS Roemani. *Journal of Comprehensive Science (JCS)*, *4*(4).

Arisandy, T., & Carolina, P. (2023). Hubungan Dukungan Keluarga dengan Kualitas Hidup Pasien Gagal Ginjal Kronik (GGK) yang Menjalani Terapi Hemodialisa: The Correlation of Family Support with Quality of Life of Chronic Kidney Failure (CRF) Patients on Those Undergoing Hemodialysis Therapy. *Jurnal Surya Medika (JSM)*, *9*(3), 32-35.

Cong, L., Jianyi, W., Xiaoran, L., Qin, W., Nian, L., Xianglin, L., & Zuyang, X. (2026). Family support, stigma, and psychological detachment in hemodialysis patients: a cross-sectional mediation analysis. *BMC Nephrology*.

Dewi, R. A. K., & Karwati, A. D. (2023). Hubungan dukungan keluarga dengan kepatuhan pembatasan asupan cairan pada pasien gagal ginjal kronik di unit hemodialisa. *J Health (Joh)*, *10*(2).

Sandy Sulistiawati*, Moch Aspihan, Iskim Luthfa

Fakultas Ilmu Keperawatan, Universitas Islam Sultan Agung
Corresponding Author: Sandy Sulistiawati. *Email: Sandysulistiawati09@gmail.com

DOI: https://doi.org/10.56922/msc.v6i1.3011

Dunst, C. J., Jenkins, V., & Trivette, C. M. (2007). Family support scale reliability and validity asheville.

Fauziah, N., Fadilah, R. N., Nazala, P. H., Rohima, D. K., & Zahra, A. (2025). Peran Keluarga dalam Meningkatkan Kesejahteraan

Friedman, M. M. (1998). *Family nursing: Research, theory, and practice* (5th ed.). Stamford, CT: Appleton & Lange. Retrieved from https://archive.org/details/familynursingres0000frie/page/n3/mode/1up

Safira, O., Setiawati, E. M., & Widiastuti, W. (2025, March). Hubungan dukungan keluarga terhadap pembatasan cairan pada pasien hemodialisa di RS PKU Muhammadiyah Yogyakarta. In *Prosiding Seminar Nasional Penelitian dan Pengabdian Kepada Masyarakat LPPM Universitas' Aisyiyah Yogyakarta* (Vol. 3, pp. 401-409).

Iswara, L., & Muflihatin, S. (2021). Hubungan kepatuhan menjalani terapi hemodialisa dengan kualitas hidup pasien gagal ginjal kronik yang menjalani hemodialisis: literature review. *Borneo Studies and Research*, *2*(2), 958-967.

Ministry of Health of the Republic of Indonesia. (2020). Retrieved from : Keputusan Menteri Kesehatan Republik Indonesia Nomor HK.01.07/MENKES/328/2020. Keputusan Menteri Kesehatan Republik Indonesia, 11, 1–189.

Oka, I. G. P. (2023). Hubungan Dukungan Keluarga dengan Kepatuhan Pembatasan Asupan Cairan pada Pasien Gagal Ginjal Kronik yang Menjalani Hemodialisa di RSUD Tabanan: The Correlation between Family Support and Compliance with Restricting Fluid Intake in Chronic Kidney Failure Patients Undergoing Hemodialysis at Tabanan Hospital. *Journal Nursing Research Publication Media (NURSEPEDIA)*, *2*(3), 156-166.

Indonesian Society of Nephrology. (2020). Dialysis consensus. Retrieved from https://www.pernefri.org/konsensus/Konsensus%20Dialisis.pdf

Putri, M. P. (2025). *Hubungan Lama Hemodialisis Dan Tingkat Stres Dengan Kualitas Hidup Pasien Hemodialisa* (Doctoral dissertation, Universitas Islam Sultan Agung Semarang).

Putri, S. I., Dewi, T. K., & Ludiana, L. (2023). Penerapan slow deep breathing terhadap kelelahan (fatigue) pada pasien gagal ginjal kronik di ruang HD RSUD Jendral Ahmad Yani Metro Tahun 2022. *Jurnal Cendikia Muda*, *3*(2), 291-299.

Rahmaputri, Y. A. (2025). *Kepatuhan pembatasan cairan pada pasien gagal ginjal kronis yang menjalani hemodialisis* [Undergraduate thesis, Universitas Diponegoro]. Retrieved from https://eprints2.undip.ac.id/id/eprint/33457/11/22020121120022-Yudhansa%20Anandhita%20Rahmaputri-Full%20Text.pdf

Teguhandany, F., Aprisunadi, A., Jamiatun, J., & Susanti, F. (2024). Hubungan Dukungan Keluarga dengan Kepatuhan Pembatasan Cairan pada Pasien CKD Hemodialisis di RS Pusdokkes Polri. *Jurnal Persatuan Perawat Nasional Indonesia (JPPNI)*, *9*(2), 117-124.

Tifany, A., Safuni, N., & Amalia, R. (2024). Dukungan Keluarga Terhadap Kepatuhan Pembatasan Asupan Cairan Pada Pasien Hemodialisis. *Jurnal Penelitian Perawat Profesional,* 6(2023), 1161–1168. https://www.jurnal.globalhealthsciencegroup.com/index.php/JPPP/article/download/2534/1911

Tsabita, N., Anggraini, M. T., & Faizin, C. (2025). Hubungan antara Dukungan Sosial dan Keluarga dengan Kualitas Hidup Penderita Penyakit Ginjal Kronik di RS ROEMANI SEMARANG. *Innovative: Journal Of Social Science Research*, *5*(2), 1288-1297.

Gire, W., & Sulaiman, E. (2023). Hubungan Pengetahuan dan Dukungan Keluarga Dengan Kepatuhan Pasien Gagal Ginjal Kronik Dalam

Sandy Sulistiawati*, Moch Aspihan, Iskim Luthfa

Fakultas Ilmu Keperawatan, Universitas Islam Sultan Agung
Corresponding Author: Sandy Sulistiawati. *Email: Sandysulistiawati09@gmail.com

DOI: https://doi.org/10.56922/msc.v6i1.3011

Menjalani Terapi Hemodialisa di RSUD Bahteramas Provinsi Sulawesi Tenggara Tahun 2023. *Jurnal Penelitian Sains dan Kesehatan Avicenna*, *2*(3), 60-68.

Wijayanti, S., Pujiarto, P., & Dewi, A. R. (2024). Hubungan Kepatuhan Hemodialisis dengan Interdialytic Weight Gain (IDWG) Pada Pasien Hemodialisis. *MAHESA Malahayati Heal Student J*, *4*(2), 475-84.

Sandy Sulistiawati*, Moch Aspihan, Iskim Luthfa

Fakultas Ilmu Keperawatan, Universitas Islam Sultan Agung
Corresponding Author: Sandy Sulistiawati. *Email: Sandysulistiawati09@gmail.com

DOI: https://doi.org/10.56922/msc.v6i1.3011