



Family Support Interventions in Hemodialysis Patients :A Systematic Review

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Abstract

Patients undergoing hemodialysis in hospitals are often faced with a variety of complex physical, psychological and social challenges. Family support has been identified as a key factor in improving patients' quality of life and adherence to therapy. Family support interventions for hemodialysis patients can help address issues related to the decline in quality of life. Objective this study aims to examine the relationship between family support interventions and self-care behaviors and the quality of life of chronic kidney patients undergoing hemodialysis. Methods this study was conducted using nine articles obtained between April 2 and May 18, 2025. Results a total of nine relevant research articles were identified and analyzed, revealing a positive relationship between family support interventions and both self-care behavior and the quality of life of chronic kidney patients undergoing hemodialysis. Several factors were found to influence the effectiveness of these interventions, including patient characteristics, family conditions, the type and intensity of the intervention, socioeconomic factors, and the role of healthcare professionals. However, some aspects remain underexplored, such as family emotional intelligence, multigenerational family dynamics, the role of technology in family support, family spirituality, caregiver burnout, and family perceptions and expectations regarding treatment outcomes. Conclusion family support interventions can enhance self-care behavior and improve the quality of life of hemodialysis patients.

Kata Kunci: *Hemodialysis Patients; Intervention; Family Support.*

@Jurnal Ners Prodi Sarjana Keperawatan & Profesi Ners FIK UP 2026

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INTRODUCTION

Chronic Kidney Disease (CKD) is an irreversible disease with abnormalities in the structure and function of the kidneys (1). Chronic kidney failure causes the kidneys to not function properly and results in an imbalance of fluids and electrolytes, causing a buildup of waste that cannot be excreted by the body or uremia (2). Chronic kidney failure is one of the main causes of death worldwide besides heart disease, cancer, stroke, liver cirrhosis, thalassemia, leukemia, and hemophilia from non-communicable diseases and the seventh leading cause of death in the world (3). According to a report from the United States Renal Disease Data System (USRDS), the rate of chronic kidney failure is increasing by 20-25% each year, resulting in approximately 100,000 new cases each year (4). Data from the World Health Organization (WHO) shows that in 2019, individuals suffering from chronic kidney failure comprised 15% of the global population and were responsible for 1.3 million deaths. In 2020, deaths related to chronic kidney failure jumped to 254,028, further increasing to 843.6 million in 2021, with projections showing an increase of 41.5% by 2040 (5).

Chronic Kidney Disease (CKD) causes a gradual decline in kidney function, characterized by a decrease in the Glomerular Filtration Rate/estimated Glomerular Filtration Rate (GFR/eGFR), which results in the kidneys being unable to remove toxins optimally, thus requiring renal replacement therapy (6). Hemodialysis, as a kidney replacement therapy, is the main choice for maintaining the lives of patients with end-stage CKD (7). Hemodialysis patients are not without challenges, patients often experience a variety of physical, psychological, social, and economic problems that can affect adherence to treatment, emotional well-being, and overall clinical outcomes (8). Patients undergoing hemodialysis will experience a decrease in their quality of life because they have resigned themselves to their illness, namely feeling physically tired, in pain, anxious, and having no motivation to get better (9).

Family support plays a crucial role. The family is the closest social system and is often the main source of emotional, informational, and practical support for patients undergoing hemodialysis (10). Adequate support from family can help patients cope with psychological distress, increase motivation to follow treatment regimens, facilitate access to health resources, and ultimately improve their quality of life.

Recent studies continue to highlight the importance of family support in the management of CKD and hemodialysis. Interventions involving families, both directly and indirectly, have been developed and implemented with the aim of optimizing the support provided to patients. This

literature review aims to summarize and analyze the latest evidence (as of 2021) regarding the effectiveness of family support interventions in patients undergoing hemodialysis. Understanding the impact of different types of family support interventions is expected to provide greater insight for health professionals, patient families, and policy makers in developing more effective and patient-centered support strategies. This review will explore the types of family support interventions that have been studied in recent years, the mechanisms by which family support affects hemodialysis patient outcomes, and identify gaps in recent research and future research directions (11). This study aims to determine the relationship between family support interventions with self-care behavior and quality of life in hemodialysis patients.

METODE

The search strategy for articles related to the relationship between family support interventions on self-care behavior and the quality of life of chronic kidney patients undergoing hemodialysis was carried out through a systematic literature study. The article selection process follows the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to ensure that the selection of studies is in accordance with the focus and objectives of the literature review. This study uses secondary data, namely data obtained from the results of previous studies, not from direct observation, so that all information is analyzed based on findings that have been published by previous researchers.

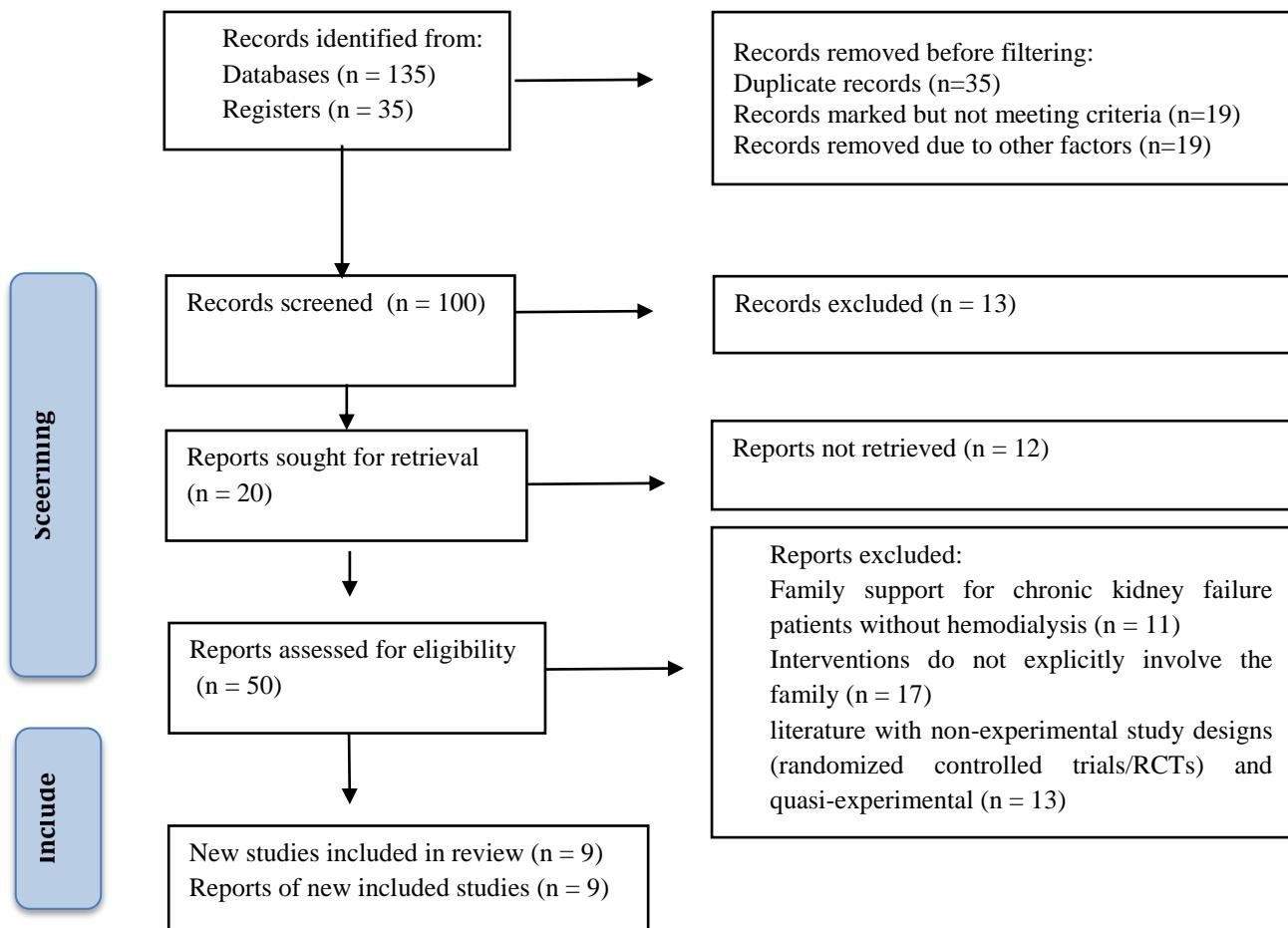
The search for research articles discussing the relationship between family support interventions with self-care behavior and the quality of life of chronic kidney patients undergoing hemodialysis was carried out in the period from April 2, 2025 to May 18, 2025. The search process was carried out through several scientific databases, namely Google Scholar, ProQuest, Wiley, and ScienceDirect. The keywords used are arranged based on Medical Subject Headings (MeSH) and use English, with a combination of terms: "Intervention" AND "Family Support" AND "Hemodialysis Patients". To ensure the relevance and quality of the studies obtained, the article selection process followed established inclusion and exclusion criteria, with a systematic approach based on the PICOS (Population, Intervention, Comparison, Outcome, Study design) framework.

RESULT AND DISCUSSION

Based on the results of a literature search on four databases using keywords that have been adjusted to MeSH, a total of 170 articles were found, consisting of 90 articles from ProQuest, 31

from Google Scholar, 29 from Wiley, and 20 from ScienceDirect. After reviewing the completeness of the compilation, 50 articles were obtained that met the initial requirements. The articles were then filtered using inclusion and exclusion criteria, resulting in 9 articles that were appropriate.

Furthermore, a quality assessment was carried out using guidelines from the Joanna Briggs Institute, and 9 articles were obtained that were considered relevant. This selection process is visualized through the following Flowchart



Picture 1. Search Flow Diagram

The literature review process focused on the relationship between family support interventions on self-care behavior and the quality of life of chronic kidney patients undergoing hemodialysis, researchers managed to identify nine articles that met the inclusion criteria. The articles were selected based on the suitability of the topic, Table 1. The results of studies that meet the criteria for this systematic review are as follows:

methodological quality, and relevance to the study objectives. These nine articles became the basis for analysis to understand the extent to which family involvement through structured interventions can have a positive impact on patients' ability to care for themselves and improve their quality of life during hemodialysis therapy.

No	Title, Author	Objective	Method	Results
1.	"Together We Stand": A Pilot study exploring the feasibility, Acceptability, and preliminary effects of a family based psychoeducational intervention for patients on hemodialysis and their family caregivers (Helena Sousa, Oscar Ribeiro , Constança Paúl , Elísio Costa, Roberta Frontini, Vasco Miranda, Jaime	Assess the extent to which the intervention can be implemented practically (feasibility), accepted by participants (acceptability), and examine the initial impact of the intervention on the psychological and behavioral aspects of patients and family members involved in the hemodialysis care	Quasi-experiment to assess the effect of educational program on families of hemodialysis patients. A total of 164 families were sampled. The independent variable in this study was educational intervention, while the dependent variable was the outcome of care provided by the family. Data collection was conducted through sociodemographic questionnaires, objective caregiver burden scale (OBCS), and caregiver optimism scale (BCOS). The	Training programs and provision of appropriate information regarding kidney failure and hemodialysis have been shown to be effective in improving the quality of life for both patients and their family members who care for them

	Oliveira, Fernando Ribeiro and Daniela Figueiredo,2021) (12)	process.	data obtained were analyzed using t-test through SPSS program.	
2.	Effect of Family Centered Empowerment Intervention on Burden and Coping Strategies among Caregivers of Hemodialysis Elderly Patients (ntsar A. Abdelsalam, Hanady Sh. Shehata, Hanan G. El-Bready, Hayam Labib, 2022)(13)	This study aims to determine the extent to which interventions or programs that focus on family empowerment can reduce the burden felt and increase their ability to face challenges when caring for the elderly undergoing hemodialysis.	This study used a quasi-experimental design with pre-test and post-test measurements. A total of 75 elderly caregivers undergoing hemodialysis were recruited from two hospitals in Menoufia Governorate, Egypt. The intervention provided was the Family-Based Empowerment program, which was the independent variable. Meanwhile, the level of caregiver burden and coping strategies used were the dependent variables. Data were collected using the Zarit Burden interview questionnaire and analyzed using a paired t-test.	Family-based empowerment programs have been proven effective in reducing the burden felt by caregivers of hemodialysis patients. In addition, this program also improves the ability of caregivers to deal with problems, so that they are better able to adapt during the role of caring for hemodialysis patients, thereby improving self-care behavior and quality of life of patients.
3.	Investigating the Effectiveness of a Virtual Family-centered Support Intervention on the Mental Health of Hemodialysis Patients and their Family Caregivers During the COVID-19 Pandemic(Marjan Moradi, Mahdi Amiri, Salman Daneshi, Seyyedeh Mona, Taghdisi Heydarian, Sam Saghari and Rasoul Raesi 2024)(14)	This study aims to evaluate the effectiveness of family support interventions through virtual education on mental health in hemodialysis patients and their caregivers during the COVID-19 pandemic.	This quasi-experimental study involved 30 families of hemodialysis patients at Bahman Hospital, Khaf. The independent variable was the effectiveness of the virtually delivered family support intervention, while the dependent variable was the mental health of hemodialysis patients and family caregivers. For four weeks, the experimental group received virtual education on mental health for caregivers. After the intervention, the mental health of patients and caregivers was measured using a questionnaire administered over the phone. Data were analyzed using independent t-test and t-test.	Virtual-based family support intervention showed a significant effect on improving the mental health of hemodialysis patients and their caregivers, with a significance value of $p < 0.001$.
4.	The Effect of Family-Centered and Peer Centered Education on the Sleep Quality of Hemodialysis Patients (15)	This study aims to examine the influence of education involving family and peers on the sleep quality of hemodialysis patients.	This study used a randomized controlled trial (RCT) design with convenience sampling technique. The sample consisted of 90 families of patients in the dialysis ward at Imam Reza Teaching Hospital, the interventions provided were family-focused and peer-focused education, and observing the sleep quality of hemodialysis patients was the dependent variable. Sleep quality was measured using the Pittsburgh Sleep Quality Index, and data were analyzed using the Wilcoxon test.	Education involving family and fellow patients has been proven to be effective in improving the sleep quality of hemodialysis patients with a significance value of $p=0.008$.
5.	The effect of educational intervention on the quality of life of family caregivers of hemodialysis patients (Reza Sotoudeh, Mousa	Assessing the effect of a family-based education program on the quality of life of caregivers of hemodialysis patients.	This RCT study involved 70 participants from Isfahan Hazrate Ali Asghar and Hazrate Zahraye Marzieh. The independent variable was the intervention, while the dependent variable was quality	The educational program was proven to be effective in improving self-care behavior and quality of life of family caregivers of hemodialysis patients. Significant improvements

Alavi, 2023)(16)	<p>of life measured using the Quality of Life Scale Short (QOLS). Measurements were taken twice, immediately after the intervention and one month later. Before analysis, data were tested using the Kolmogorov-Smirnov test for normality, Levene's test for homogeneity of variance, and Box's test for homogeneity of covariance to ensure statistical assumptions were met.</p> <p>This study used a quantitative design of a randomized controlled clinical trial (RCT) with 60 participants from families of hemodialysis patients. The independent variable was social support, while the dependent variable was the burden of care. Data were collected using a demographic questionnaire and the Zarit burden of care questionnaire. Data analysis included the Chi-square test, independent t-test, and Mann-Whitney U test to test the hypotheses, and the Wilcoxon signed-rank test and paired t-test for comparison within groups. Data normality was tested using the Kolmogorov-Smirnov test to ensure the accuracy of the analysis.</p>	<p>were seen in aspects of mental health, social relationships, and environmental health, both immediately after the intervention and one month later ($p < 0.001$).</p> <p>The effectiveness of support is evident in the physical, social and emotional aspects of care burden, but its impact on the economic aspect is still limited, indicating the need for additional financial support.</p>
6. Peer support groups and care burden in hemodialysis caregivers: a RCT in an Iranian healthcare setting (Nader Ghenaati, Hamid Reza Zendehtalab, Mohammad Namazinia and Masoud Zare, 2024)(17)	<p>This study aims to determine the role of social support in reducing the burden felt by caregivers of hemodialysis patients.</p>	
7. The influence of family support on fluid management in hemodialysis patients (Agus Susilawati, Hema Malini, Reni Prima Gusty, 2024)(18)	<p>Evaluating the influence of family support on fluid management compliance in hemodialysis patients.</p>	<p>Pre-experimental research with one group pretest-posttest design involved 42 respondents selected by purposive sampling. The independent variable was family assistance, and the dependent variable was fluid management compliance. Measurements were made using a family assistance action checklist and an Interdialytic Weight Gain (IDWG) observation sheet. Data were analyzed using a paired sample t-test.</p>
8. Application of family-centered care method to the quality of life of hemodialysis patients (Siti Nafisah, Ratnasari, Swanny Trikajanti, 2024)(19)	<p>Analyzing the effect of implementing the Family-Centered Care method on improving the quality of life of hemodialysis patients.</p>	<p>This study used a quasi-experimental pretest-posttest design with a control group and involved 118 respondents selected by purposive sampling. The independent variable was the family-centered care method, while the dependent variable was quality of life. Quality of life was measured using the KDQOL SFTM-36 instrument, and data were analyzed using the Chi-Square test and the Mann-Whitney test.</p>

9. Effects of dyadic psychoeducational interventions for haemodialysis patients and their family caregivers: a randomised controlled trial (Liyuan Zhan, Yan Chen, Wen Tang, Qian Wang, Li Zou and Lijuan Zhou, 2025)(20)	<p>This study examined the effectiveness of a 4-week dyadic psychoeducational intervention on patients' quality of life and psychosocial health, as well as caregivers' psychosocial burden and condition. Assessments were conducted at four time points: before the intervention (T0), immediately after (T1), 1 month (T2), and 3 months after the intervention (T3). The primary variables measured were patients' quality of life and caregiver burden, while secondary variables included partner coping, depressive and anxiety symptoms, and social support. Data were analyzed using Generalized Estimating Equations with an intention-to-treat approach.</p>	<p>This study used a quantitative Randomized Controlled Trial (RCT) design with 80 patients in Taizhou General Hospital, Jiangsu, China. Psychoeducation intervention was the independent variable, while patients' quality of life and psychosocial health were the dependent variables measured using the Chinese version of the KDQOL-36™. Independent T-test or chi-square was performed first to ensure the similarity of characteristics between the intervention treatment group and the control group</p>	<p>Dyadic psychoeducational interventions effectively improve self-care behavior, quality of life, and reduce the burden of hemodialysis patients, as well as improving physical function and social support of patients.</p>
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Family support interventions are essential in the management of hemodialysis patients. Such support not only impacts compliance and self-care behavior, but also significantly improves the mental health and quality of life of patients. Therefore, health workers need to involve families in every stage of care, including education, monitoring, and psychosocial support. Family support interventions refer to any form of action or program that is systematically designed to involve, empower, and equip family members in providing effective support to individuals who are facing health challenges, both physical and mental. The main focus is to optimize the role of the family as an important resource in the process of recovery, adaptation, or management of the patient's health condition. Well-implemented family support interventions in hemodialysis patients create a positive cycle that not only optimizes clinical outcomes and quality of life for patients, but also empowers families, while reducing the burden on the health care system.

Chronic kidney disease (CKD) patients undergoing hemodialysis face various physical and psychological challenges. Family support has been shown to play an important role in improving patient adherence to treatment and their quality of life. This family support intervention has been implemented in Indonesia and is one of the

interventions to improve care behavior and quality of life of hemodialysis patients. Comprehensive support from the family, which includes emotional encouragement, information that helps understanding, practical assistance, and appreciation for patient efforts, significantly contributes to the level of hemodialysis patient adherence to fluid restrictions (21). The family plays a role in building a strong understanding in the patient about the importance of fluid restriction by seeking additional information, re-explaining the advice from the doctor or nurse, or finding creative strategies to overcome thirst. The patient will truly understand the risks of fluid overload such as shortness of breath or swelling so that the patient will be more motivated to comply (22).

Hemodialysis patients' dietary compliance is greatly influenced by family support, including emotional, appreciation, informational, and instrumental support including factors such as age, gender, education, emotions, spirituality, family practices, socioeconomic, and cultural background also influence the level of family support (23). According to Butar-butar et al., (2022) Receiving good family support in undergoing a hypertension diet plays a role in higher dietary compliance.

Strong and significant family support, GGK patients undergoing hemodialysis will feel calmer, more motivated, and have the spirit to undergo

treatment. This is directly correlated with the improvement of their quality of life, both physically, psychologically, and socially. Family is not just a companion, but an integral part of the healing process and adaptation of patients to GGK conditions (22). Family support in various forms can improve the quality of life of patients undergoing hemodialysis. (25).

Susilawati et al., (2024) said that effective fluid management is a crucial aspect in the care of patients undergoing hemodialysis. Suboptimal handling of fluid intake and output can result in increased Interdialytic Weight Gain (IDWG), which is directly correlated with the risk of cardiovascular complications, such as pulmonary edema, hypertension, and heart failure. In this context, family support interventions play a fundamental role as essential non-pharmacological strategies to optimize fluid management in hemodialysis patients.

LIMITATIONS

The strength of this review lies in the importance of family support interventions in the management of hemodialysis patients. However, the broad scope of the review presents challenges in interpreting individual studies and drawing specific nursing implications. Management of pediatric AKI requires early detection and timely intervention. This includes close monitoring for rapid changes in the patient's condition, underscoring the importance of understanding renal physiology. Effective management involves collaborative care, monitoring fluid balance, and early identification and prevention strategies.

RESEARCH ETHIC

This systematic review was conducted using secondary data from previously published articles. Ethics approval was not required as the study did not involve human subjects or animals directly. However, the authors ensure that all articles included in this review have obtained appropriate ethics clearance from their respective institutional review boards and adhere to ethical research practices, including informed consent and confidentiality where applicable. Article selection and analysis followed a transparent and reproducible process in accordance with PRISMA guidelines to ensure integrity and objectivity.

CONFLICT OF INTEREST

The author declares no potential conflicts of interest

ACKNOWLEDGEMENT

The authors would like to express their deepest appreciation to the Master of Nursing Study Program, Postgraduate Program, Universitas Muhammadiyah Semarang, which has facilitated the publication of this research. This research

received no financial support from any public, commercial, or non-profit funding agency. The corresponding author will provide access to the dataset upon reasonable request.

CONCLUSION

Family support interventions play an important role in helping hemodialysis patients adapt to their condition, adhere to treatment, and achieve overall well-being. This support includes four main aspects: emotional (such as empathy and encouragement), instrumental (practical assistance in daily activities), informational (provision of knowledge related to care), and social (presence and involvement in the patient's life). These four forms of support work in a complementary manner to improve patient adherence to hemodialysis schedules and lifestyle management, strengthen self-care skills such as diet, fluid management, and medication adherence, and reduce the risk of psychological disorders such as stress, anxiety, and depression. As a result, the patient's quality of life can improve physically, emotionally, and socially. Therefore, active family participation in the care process is very important and should be facilitated through education, assistance, and family-based interventions by health workers.

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