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Nursing care plan for people undergoing hemodialysis: an evidence-based proposal

Abstract

Hemodialysis treatment requires continuous nursing care addressing clinical, educational, and psychosocial needs. This study aimed to develop a Nursing Care Plan for adults undergoing hemodialysis, grounded in scientific evidence and structured according to the Nursing Process. A systematized literature review with structured narrative synthesis was conducted. Of the 1,528 records identified, 24 studies were included in the final synthesis. The evidence focused on health education and self-care; vascular access management and preservation; prevention and management of complications and symptoms; and psychosocial support and continuity of care. The findings supported the development of the Nursing Care Plan according to the stages of the Nursing Process. The proposed plan requires further validation and assessment of its clinical applicability.

Keywords: hemodialysis, nursing care, nursing process, self-care, arteriovenous fistula

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Abbreviations: AVF, arteriovenous fistula; BP, blood pressure; CINAHL, cumulative index to nursing and allied health literature; COFEN, Federal Nursing Council (Conselho Federal de Enfermagem); HR, heart rate; JBI, joanna briggs institute; NP, nursing process; PRISMA, preferred reporting items for systematic reviews and meta-analyses

Introduction

The Nursing Process (NP) is a method that guides nurses' critical thinking and clinical judgment, directing the nursing team in the provision of care to individuals, families, communities, and special population groups.[1]

In Brazil, Federal Nursing Council (COFEN) Resolution No. 736/2024 establishes that the NP must be carried out deliberately and systematically in every socio-environmental context in which nursing care is provided and organized into the stages of Nursing Assessment, Nursing Diagnosis, Nursing Planning, Nursing Implementation, and Nursing Evaluation.[1] This Resolution reinforces the need for the NP to be grounded in theoretical frameworks and allows for the incorporation of standardized nursing languages, validated instruments, evidence-based protocols, and other resources that support clinical reasoning and professional decision-making.[1]

Nurses and nursing teams provide direct and continuous care to people undergoing hemodialysis, requiring technical and scientific competencies, clinical judgment, and interpersonal skills to recognize physical, emotional, cognitive, and social needs.[2,3] Nursing care in hemodialysis involves not only the safe delivery of therapy but also clinical monitoring, symptom management, support for self-care, treatment adherence, and psychosocial support.[4]

In this context, systematizing care through the NP enables the organization of clinical data, identification of nursing needs or diagnoses, establishment of expected outcomes, selection of interventions, and monitoring of patient progress.[1,2] This organization is particularly relevant in hemodialysis because of the complexity of treatment, the need for continuous monitoring, and the potential occurrence of complications related to the therapy itself and to vascular access.[5]

In hemodialysis units, nursing care involves different demands throughout the pre-, intra-, and post-dialysis periods, including clinical assessment, fluid balance management, vital signs monitoring, prevention and identification of complications, vascular access care, health education, and promotion of self-care.[2,5] Structured vascular access care is particularly important, as nursing protocols targeting arteriovenous fistulas may contribute to monitoring, prevention, and early identification of complications.[6]

In addition to the care provided during dialysis sessions, much of the management of kidney disease and its treatment occurs outside the dialysis service and depends on the active participation of the individual. Management of fluid and dietary intake, treatment adherence, monitoring of signs and symptoms, and arteriovenous fistula care are important components of self-care.[7,8] Recent evidence indicates that nursing educational interventions can improve adherence, self-care, knowledge, quality of life, and treatment self-management among people undergoing hemodialysis.[9–12]

The importance of these interventions is further supported by studies demonstrating the benefits of structured educational programs. Strategies based on the PRECEDE model (Predisposing, Reinforcing and Enabling Constructs in Educational/Environmental Diagnosis and Evaluation) have shown positive effects on self-care behaviors,[10] while individualized and continuous interventions may promote treatment adherence, quality of life, and psychological well-being.[11] The use of theoretical nursing models in educational interventions has also shown favorable outcomes in independence and self-care ability among people undergoing hemodialysis.[12]

However, the effectiveness of these interventions may be influenced by individual and psychosocial factors. Self-efficacy is an important element in treatment adaptation and the maintenance of health behaviors, and psychoeducational nursing interventions have shown improvements in psychological adjustment and dimensions related to self-efficacy.[13] Social support, individualized guidance, and continuous communication should therefore be considered when organizing longitudinal care.[11,13]

Furthermore, interventions specifically targeting vascular access demonstrate that education can promote self-care of the arteriovenous fistula. A Brazilian randomized clinical trial showed increased knowledge and self-care practices following a video-based educational intervention, reinforcing the role of educational technologies in nursing care.[14]

Despite the diversity of care needs among people undergoing hemodialysis, it remains important to organize these actions within a care proposal capable of integrating clinical assessment, complication prevention, vascular access management, health education, psychosocial support, and self-care. More comprehensive nursing models for hemodialysis that integrate risk stratification, complication prevention, structured education, adherence support, and psychosocial assessment have been associated with better clinical and patient-reported outcomes.[4]

Organizing this evidence according to the stages of the Nursing Process may support nurses' clinical reasoning and promote greater continuity between care provided within the hemodialysis service and care carried out at home.[1,4]

Therefore, this study aimed to develop an evidence-based Nursing Care Plan for adults undergoing hemodialysis, structured according to the Nursing Process.

Material and methods

This study involved the development of a Nursing Care Plan for adults undergoing hemodialysis, based on a systematized literature review with a narrative synthesis of the evidence, following JBI guidelines.[15] The review covered interventions, educational strategies, monitoring practices, and recommendations applicable to the pre-, intra-, and post-dialysis periods, as well as the promotion of self-care and continuity of care at home.

The process of identifying and selecting publications was structured to ensure transparency and traceability, using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 recommendations for reporting the stages of identification, screening, retrieval, eligibility assessment, and inclusion of publications.[16] PRISMA 2020 provides updated guidance for transparent reporting of the methods and results of systematic reviews.[16]

Information sources and search strategy

The literature search was conducted in PubMed/MEDLINE, CINAHL, Scopus, and LILACS Plus, covering publications from January 1, 2020 to July 31, 2026. Controlled descriptors and free-text terms related to Hemodialysis, Renal Dialysis, Nursing Care, Nursing Process, Self Care, Patient Education, Arteriovenous Fistula, and Vascular Access were combined using the Boolean operators AND and OR. The search strategies were adapted to the syntax, controlled vocabularies, and specific resources available in each database.[15]

The search initially retrieved 1,528 records: 319 from PubMed/MEDLINE, 342 from CINAHL, 655 from Scopus, and 212 from LILACS Plus. All records were exported to the Zotero reference manager, where they were organized according to the database of origin and checked for duplicate records. After 398 duplicates were removed, 1,130 unique records remained for the selection stage.

Eligibility criteria

Studies involving adults undergoing hemodialysis were considered eligible when they provided evidence applicable to nursing care, including interventions, protocols, educational strategies, monitoring practices, actions for the prevention and management of complications, or measures related to self-care and continuity of care. The prior definition and consistent application of eligibility criteria are central elements of the selection process in evidence syntheses.[15]

Studies were considered relevant when they addressed one or more of the following components: clinical assessment and monitoring; vascular access management and preservation; arteriovenous fistula cannulation; prevention and management of intradialytic complications; fluid and nutritional management; treatment adherence; pain, fatigue, and comfort management; health education; self-care; psychosocial aspects; and continuity of care after the hemodialysis session.

Studies exclusively addressing peritoneal dialysis, kidney transplantation, conservative treatment of chronic kidney disease, or acute kidney injury were excluded when they did not provide information applicable to the care of adults undergoing hemodialysis. Pediatric studies; exclusively pharmacological, surgical, or medical studies without identifiable applicability to nursing care; editorials; letters; commentaries; and publications with insufficient data to address the study objective were also excluded.

Studies were not excluded solely on the basis of methodological design, as the purpose of the review was to identify different types of evidence capable of supporting the development of the Nursing Care Plan.[15]

Selection of publications

Initially, the 1,130 unique records were screened by title and abstract according to the previously established eligibility criteria. Publications unrelated to the population, the hemodialysis context, or care components relevant to nursing were excluded at this stage.

Following title and abstract screening, 39 publications were considered potentially eligible and selected for full-text retrieval. Of these,[12] could not be retrieved in full text because full access was unavailable through the sources consulted or the authors were unable to provide the published full text. These records were classified as reports not retrieved rather than exclusions based on content, since their eligibility could not be determined through full-text assessment. This distinction follows the PRISMA 2020 selection framework, which differentiates screened records, reports sought for retrieval, reports not retrieved, and reports assessed for eligibility.[16]

Thus, 27 articles were assessed for full-text eligibility. After applying the previously established criteria, three were not included in the final synthesis: one because it did not address actions performed by the nursing team, one because it focused exclusively on a pediatric population, and one because it did not fully report the intervention results.[16] The remaining 24 studies comprised the final review sample.

The process of study identification, screening, retrieval, eligibility assessment, and inclusion is presented in the PRISMA 2020 flow diagram.[16]

Information data extraction and organization of evidence

For each included study, data were extracted on authorship, year of publication, country, methodological design, population or sample, characteristics of the intervention or care investigated, main outcomes, results, and implications for nursing care in hemodialysis. Structured data extraction was performed to enable comparison of the characteristics and findings across the included studies and to support evidence synthesis.[15]

The extracted evidence was grouped according to thematic convergence and clinical applicability into the following care domains: (1) clinical assessment and monitoring; (2) vascular access management; (3) prevention and management of hemodialysis-related complications; (4) fluid and nutritional management; (5) health education, adherence, and self-care; (6) pain, fatigue, and comfort management; (7) psychosocial aspects; and (8) continuity of care. This categorization was developed after reading and extracting information from the included studies, based on the convergence of the identified care practices and interventions.

Evidence synthesis

Due to the heterogeneity of the methodological designs, interventions, and outcomes assessed, the findings were subjected to a structured narrative synthesis aimed at identifying convergence among the described care practices, intervention effects, and their applicability to clinical nursing practice.[15] Statistical pooling of the results was not performed because the studies differed substantially in their designs, intervention characteristics, populations, and outcome measures.

The interpretation of the findings considered the methodological and clinical characteristics of each study, avoiding generalizations beyond the populations and contexts investigated.[15]

Development of the nursing care plan

Following the narrative synthesis, the identified care practices were reorganized according to the five stages of the NP, as established by COFEN Resolution No. 736/2024: Nursing Assessment, Nursing Diagnosis, Nursing Planning, Nursing Implementation, and Nursing Evaluation.[1]

The Resolution establishes that these stages are interrelated, interdependent, recurrent, and cyclical. It also determines that the NP should be grounded in theoretical support and may incorporate theories and models of care, standardized nursing language systems, validated instruments, evidence-based protocols, and other related knowledge. The regulation further establishes that nursing diagnoses, outcomes, indicators, interventions, and actions may be supported by the best available scientific evidence.[1]

For each care domain, relevant data were identified for Nursing Assessment, needs subject to clinical judgment and formulation of Nursing Diagnoses, expected outcomes for Nursing Planning, interventions and actions related to Nursing Implementation, and indicators applicable to Nursing Evaluation.[1]

The final proposal sought to integrate nursing care provided before, during, and after the hemodialysis session, as well as health education, self-care, and continuity of care at home.

Ethical considerations

As this study was developed exclusively from bibliographic sources and publicly available documents, without participant recruitment or intervention, collection of identifiable individual information, or review of medical records, there was no direct involvement of human participants in this investigation.

Results

The identification, screening, eligibility assessment, and inclusion process of the 24 resulting studies was organized according to PRISMA 2020[16] (Figure 1).

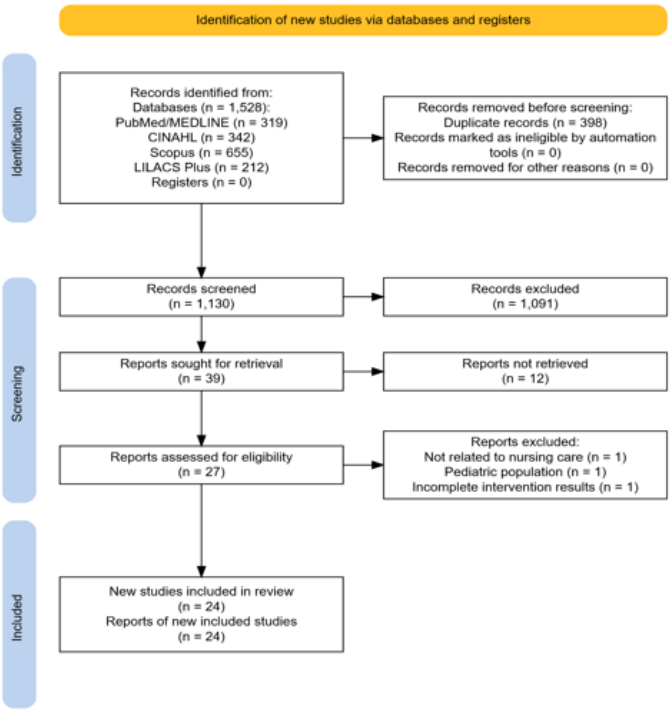

Figure 1 PRISMA 2020 Flow diagram of the study selection process.

Source: Prepared by the authors based on PRISMA 2020.[16]

The 24 included studies varied in terms of methodological design and the care strategies investigated, including randomized clinical trials, quasi-experimental studies, observational studies, and studies focused on the development and validation of interventions. The evidence focused primarily on health education and self-care, treatment adherence, management and preservation of the arteriovenous fistula, cannulation techniques, fluid and nutritional management, pain, fatigue and comfort management, psychosocial aspects, and continuity of care.[17–31] The characteristics of the included studies are presented in Table 1.

The included studies showed that nursing care for people undergoing hemodialysis was mainly concentrated in four care domains: health education and self-care; vascular access management and preservation; prevention and management of complications and symptoms; and psychosocial support and continuity of care. Educational interventions were frequently identified and addressed adherence to hemodialysis sessions, medication use, diet, fluid management, self-care, and longitudinal follow-up.[8–12,16,20,25,28,32]

Vascular access management, particularly arteriovenous fistula (AVF) care, represented another central component. Interventions related to AVF maturation and preservation, infection risk screening, self-care education, cannulation techniques, and prevention of complications were identified.[5,17,19,22,25–27,29]

Citation: Silva CAO, Bandeira OA, Rocha AF, et al. Nursing care plan for people undergoing hemodialysis: an evidence-based proposal. *Urol Nephrol Open Access J.* 2026;14(3):84–92. DOI: 10.15406/unoaj.2026.14.00379

Table 1 Characteristics of the studies included in the evidence synthesis (n = 24)

Study	Country	Design / sample	Intervention or focus	Main findings / contribution to the care plan
Arad et al.,[17]	Iran	Randomized controlled trial	Nurse-led educational program + telephone follow-up	Supported education and follow-up interventions related to adherence to HD sessions, medication use, fluid restriction, and diet.
Guo et al.,[18]	China	Intervention study	Care bundle for AVF maturation	Supported limb protection, exercises, education, postoperative monitoring, and prevention of thrombosis/stenosis.
Şen; Lafcı Bakar,[19]	Türkiye	Experimental study	Virtual reality during AVF cannulation	Demonstrated the use of a non-pharmacological strategy to reduce pain during cannulation and improve patient satisfaction.
Ibrahim et al.,[9]	Egypt	Intervention study	Nursing educational guidelines	Supported education on self-care, fluid and dietary management, communication, and quality of life.
Pinto et al.,[20]	Portugal	Clinical implementation study	Nurse-led consultation + vascular access infection risk screening tool	Supported systematic vascular access assessment, infection risk stratification, and decision-making regarding cannulation.
Ha; Park,[21]	South Korea	Quasi-experimental study	Repetitive digital dietary education	Supported nutritional education and monitoring of self-care, interdialytic weight gain, potassium, and phosphorus levels.
Naseri-Salahshour et al.,[22]	Iran	Randomized controlled trial	Nutritional education program	Supported educational interventions addressing diet, electrolyte management, and quality of life.
Helali et al.,[13]	Egypt	Intervention study	Psychoeducational nursing program	Supported assessment and interventions addressing self-efficacy, psychological adjustment, and self-care.
Ji et al.,[23]	China	Intervention study	Empowerment-based care for patients with AVF	Supported AVF self-care, monitoring of patency and complications, anxiety management, and quality of life.
Silva et al.,[6]	Brazil	Validation study	Validation of nursing care related to AVF	Provided validated nursing care practices for monitoring and preventing AVF complications during hemodialysis.
Mosavi et al.,[10]	Iran	Clinical trial	Education based on the PRECEDE-PROCEED model	Improved self-care, knowledge, attitudes, and behavioral factors; supported structured self-care education.
Zuo et al.,[24]	China	Randomized controlled trial	Nurse-led non-pharmacological multidisciplinary intervention	Supported walking, motivational interviewing, and education as strategies for fatigue management.
Şahin et al.,[25]	Türkiye	Randomized controlled trial	Lavender aromatherapy during AVF puncture	Supported a complementary non-pharmacological intervention for puncture-related pain and anxiety.
Özdemir; Şendir,[26]	Türkiye	Quasi-experimental study	Mobile application-based education for AVF care	Supported the use of educational technology to improve knowledge, adherence, and AVF self-care.
Wang; Gan, 2025[11]	China	Intervention study	Personalized health education	Supported individualized education and longitudinal follow-up for adherence, self-care, and quality of life.
Zhao et al.,[4]	China	Retrospective before-and-after study	Structured optimized nursing care model	Integrated risk stratification, complication prevention, education, self-management support, and psychosocial screening; it was associated with better clinical and patient-reported outcomes.
Tang et al.,[27]	China	Sequential multiphase study	Nurse-led perioperative exercise program for AVF	Supported exercises for AVF maturation, discharge education, reminders, and home follow-up.
Sariaslan; Kavurmaci,[32]	Türkiye	Intervention study	PRECEDE-PROCEED model-based education	Supported education on medication use, diet, fluid management, physical activity, stress, and quality of life.
Peralta et al.,[28]	Portugal	Randomized controlled trial	MuST versus rope-ladder cannulation technique	Supported safe cannulation practices and decision-making related to AVF.
Kaya; Şendir,[12]	Türkiye	Randomized controlled trial	Education based on the Roper–Logan–Tierney nursing model	Supported assessment of activities of daily living, independence, and self-care within a theoretical nursing model. The study used a two-group randomized design.
Yildirim et al.,[29]	Türkiye	Single-group pretest-posttest study	Nursing education	Supported guidance on diet, medication use, self-care, and quality of life.
Tao-feng et al.,[30]	China	Observational study	Vascular access and psychosocial dimensions	Demonstrated an association between vascular access problems and stress, anxiety/depression, supporting the inclusion of psychosocial assessment in the Care Plan.
Pessoa et al.,[14]	Brazil	Randomized controlled trial	Educational video on AVF self-care	Demonstrated the applicability of educational technology to improve knowledge and AVF self-care practices.
Anggraeni et al.,[31]	Indonesia	Intervention study	Warming gown during hemodialysis	Supported thermal monitoring and a comfort intervention for shivering/chills during the hemodialysis session.

Note: AVF = arteriovenous fistula; HD = hemodialysis.

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Interventions aimed at symptom management and promoting comfort were also identified, including non-pharmacological strategies for cannulation-related pain, anxiety, fatigue, and shivering during hemodialysis sessions.[18,23,24,30] This evidence reinforces that intradialytic care involves both clinical monitoring and measures addressing the patient's experience and comfort during treatment.

The studies also addressed psychosocial aspects, with interventions targeting self-efficacy and psychological adjustment to treatment. In addition, strategies aimed at promoting independence, treatment adherence, quality of life, and continuity of care were identified.[4,10–12,22,29] Based on the integration of these findings, the evidence was organized into care domains and aligned with the five stages of the Nursing Process, in accordance with COFEN Resolution No. 736/2024,[1] resulting in the proposal presented in Table 2.

Table 2 Proposed nursing care plan for adults undergoing hemodialysis

Nursing process stage	Assessment / identified needs	Expected outcomes	Nursing interventions and actions	Monitoring indicators	Evidence
Nursing Assessment	Assess general condition, vital signs, pre-dialysis weight, interdialytic weight gain, presence of edema, dyspnea, fatigue, pain, clinical changes, and complications since the previous session.	Early identification of clinical changes and treatment-related risks.	Perform a systematic assessment before the session; compare current weight with dry weight; assess vital signs and symptoms; identify changes requiring intervention or communication with the healthcare team.	BP, HR, temperature, weight, interdialytic weight gain, edema, dyspnea, pain, fatigue, and complications.	2–4, 24, 31
Nursing Assessment	Assess vascular access for patency, integrity, signs of infection, pain, edema, bleeding, and local changes.	Maintenance of functional vascular access and early identification of complications.	Inspect and assess the access before, during, and after the session; check for signs suggestive of infection or dysfunction; assess conditions for safe cannulation.	Thrill/bruit, inflammatory signs, pain, bleeding, cannulation difficulty, and access function.	6–7, 18, 20, 23, 27–28, 30
Nursing Assessment	Assess knowledge, self-care ability, treatment adherence, medication use, diet, fluid restriction, and vascular access care.	Identification of individual educational needs.	Assess knowledge, difficulties, barriers to adherence, self-care ability, and the need for family involvement.	Knowledge, adherence, interdialytic weight gain, self-care behavior, and vascular access management.	7–12, 17, 21, 26, 29
Nursing Assessment	Assess emotional aspects, anxiety, adjustment to treatment, self-efficacy, independence, and family/ social support.	Recognition of psychosocial needs that may interfere with treatment.	Assess anxiety, emotional distress, perceived self-care ability, independence, and support network.	Anxiety, self-efficacy, adjustment, independence, adherence, and quality of life.	4, 11–13, 23, 30
Nursing Diagnosis	Clinical judgment based on data obtained during assessment.	Identification of human responses and priority needs of the person undergoing hemodialysis.	Formulate nursing diagnoses, according to individual assessment, related to fluid balance, risk of vascular access complications, pain, fatigue, comfort, self-care, knowledge, adherence, and psychosocial responses.	Identified nursing diagnoses and established care priorities.	1–3, 5
Nursing Planning	Prioritize identified needs and risks and establish individualized goals.	Measurable care outcomes consistent with the individual's needs.	Define expected outcomes related to clinical stability, maintenance of vascular access, reduction of complications, symptom management, adherence, and development of self-care.	Established and documented clinical, behavioral, and educational goals.	1–4, 8–14
Nursing Implementation – Monitoring	Need for continuous monitoring during hemodialysis.	Maintenance of stability and early recognition of complications.	Monitor vital signs and clinical condition during the session; observe treatment-related changes; implement nursing measures in response to identified complications and communicate relevant changes.	Hemodynamic stability, occurrence and resolution of complications.	2–5
Nursing Implementation – Vascular Access	Need to preserve and safely use the AVF or other vascular access.	Preservation of patency and reduction of complications.	Protect the AVF limb; systematically assess the access; provide self-care education; use safe cannulation techniques; identify infection, stenosis, thrombosis, and other changes at an early stage.	Patency, absence of infection, controlled bleeding, cannulation conditions, and access-related complications.	6–7, 18, 20, 23, 26–28, 30

Table 2 Continued...

Nursing Implementation – Education and Self-Care	Insufficient knowledge, adherence difficulties, or need to improve self-care behaviors.	Increased knowledge, adherence, and self-management ability.	Provide individualized education on treatment, medications, diet, fluid intake, vascular access, and warning signs; use digital resources, videos, mobile applications, and telephone follow-up when available and appropriate.	Knowledge, adherence to sessions and medications, dietary behavior, fluid management, and self-care.	[8–14, 17, 21, 26, 29, 32]
Nursing Implementation – Fluid and Nutritional Management	Inadequate interdialytic weight gain, dietary difficulties, or diet-related alterations.	Improved fluid and dietary management and treatment-related parameters.	Provide guidance on fluid intake and diet; reinforce recommendations continuously; monitor interdialytic weight gain and relevant laboratory results in collaboration with the multidisciplinary team.	Interdialytic weight gain, dietary adherence, nutritional knowledge, potassium, and phosphorus.	[9–10, 21–22, 29, 32]
Nursing Implementation – Pain, Fatigue, and Comfort	Cannulation-related pain, fatigue, anxiety, or discomfort during the session.	Reduction of symptoms and improved comfort.	Systematically assess pain and fatigue; use evidence-supported non-pharmacological interventions appropriate to the individual's condition; promote comfort measures during the session.	Pain intensity, fatigue, anxiety, body temperature, shivering, and satisfaction.	[19, 24–25, 31]
Nursing Implementation – Psychosocial Aspects	Anxiety, low self-efficacy, difficulties adjusting to treatment, or impaired independence.	Improved adjustment to treatment, self-efficacy, and participation in care.	Provide educational and psychoeducational support; encourage active participation; involve family/support networks when appropriate; identify the need for referral to other healthcare professionals.	Self-efficacy, anxiety, adjustment, independence, adherence, and quality of life.	[4, 11–13, 23, 30]
Nursing Implementation – Continuity of Care	Need to maintain care actions outside the hemodialysis unit.	Continuity of self-care between sessions.	Reinforce home-care guidance; teach recognition of warning signs; use telephone or digital follow-up when available; encourage family involvement when necessary.	Adherence between sessions, self-care at home, timely healthcare seeking, and attendance at hemodialysis sessions.	[9–11, 17, 26–27]
Nursing Evaluation	Reassess responses to interventions and compare them with planned outcomes.	Assessment of the effectiveness of the care plan and identification of new needs.	Document clinical responses, complications, vascular access condition, symptoms, adherence, and progression of self-care; assess achievement of outcomes; maintain, modify, or replan interventions as needed.	Clinical progress, achievement of goals, complications, adherence, knowledge, self-care, and need for replanning.	[1–4]

Source: Prepared by the authors based on the evidence included in the review. [1-14, 17-32]

Discussion

The findings of this review show that nursing care for people undergoing hemodialysis encompasses multiple dimensions and extends beyond the technical activities performed during the dialysis session. The studies addressed actions related to health education and self-care, vascular access management, prevention of complications, symptom management, psychosocial support, and continuity of care.[4–14,17–31] The diversity of these needs highlights the importance of organizing care systematically by integrating assessment, clinical judgment, planning, implementation of interventions, and monitoring of outcomes in accordance with the stages of the Nursing Process.[1–3]

Among the interventions identified, educational strategies were prominent across the studies analyzed.[32] Different approaches were used, including face-to-face guidance, structured educational programs, telephone follow-up, individualized education, and digital resources. These interventions showed outcomes related to knowledge, treatment adherence, fluid and dietary management, medication use, self-care behaviors, independence, and quality of life.[8–14,17,21–23,26,29] Beyond providing one-time guidance, these findings reinforce the importance of incorporating health education into the ongoing care of people undergoing hemodialysis.

This continuity is particularly important because a substantial part of treatment management is carried out by individuals themselves outside the hemodialysis unit. During the interdialytic period, patients must manage their daily fluid and dietary intake, medication use, vascular access care, and recognition of warning signs requiring attention. In this context, strategies such as telephone follow-up, personalized education, and digital resources extend the possibilities for follow-up beyond the dialysis session and have shown outcomes related to adherence and self-care.[11,17,21,26] From this perspective, the care plan should not be limited to defining the guidance to be provided; it should also consider previous knowledge, individual difficulties, self-care ability, and the need to reassess, throughout treatment, the understanding and application of such guidance.

Another aspect highlighted in the studies was vascular access management, particularly arteriovenous fistula (AVF) care. The evidence included care related to AVF maturation and preservation, prevention of complications, infection risk assessment, exercise, self-care, monitoring, and cannulation techniques.[6,7,14,18–20,23,25–28,30] The recurrent presence of this topic across the studies reinforces the importance of vascular access for the continuity of hemodialysis treatment and highlights the role of nursing in its assessment, monitoring, and preservation.

The findings also indicate that AVF care should extend beyond assessment of the access at the time of puncture. Actions related to limb protection, exercise, education, and monitoring of AVF maturation were identified,[18] along with a nurse-led program focused on perioperative exercise.[27] Infection risk assessment during nurse-led vascular access consultations was also addressed.[20] Taken together, this evidence points to a longitudinal approach that begins before the AVF is effectively used and continues throughout its use.

AVF cannulation also emerged as a relevant aspect of nursing care, both because of the safety requirements of the procedure and the discomfort associated with repeated punctures. A specific cannulation technique aimed at vascular access safety was identified.[28] Other studies focused on managing pain and anxiety during puncture using non-pharmacological strategies, such as virtual reality[19] and lavender aromatherapy.[25] These findings show that care during cannulation involves not only the safe performance of the procedure but also attention to the experience of the person undergoing hemodialysis. Therefore, assessment of pain and anxiety, together with the adoption of comfort measures, may be incorporated into nursing care planning.

Among the interventions focused on comfort, strategies addressing fatigue, pain, anxiety, and changes in body temperature were identified.[19,24,25,31,32] A nurse-led multidisciplinary intervention incorporated non-pharmacological measures targeting fatigue,[24] while another study evaluated the use of a warming gown to manage shivering and body temperature during hemodialysis.[31] Although these interventions differ in nature, they demonstrate the possibility of identifying symptoms during assessment and implementing actions tailored to the individual needs of the person undergoing therapy.

Findings related to nutritional and fluid management also deserve attention. Dietary educational interventions showed outcomes related to dietary knowledge, self-care behaviors, physiological indicators, and quality of life.[9,21,22,29,32] These findings reinforce that fluid and nutritional management should not be reduced to the prescription of restrictions. In nursing care, it is important to identify difficulties with adherence, understanding of recommendations, and barriers to incorporating them into daily life, using this information to individualize educational interventions and monitor their outcomes.

Another important aspect identified in the studies concerns the psychosocial dimensions associated with treatment. Psychoeducational and educational interventions, as well as structured care models, showed outcomes related to self-efficacy, psychological adjustment, independence, adherence, and quality of life.[4,11–13,23,30] A psychoeducational intervention showed outcomes related to self-efficacy and psychological adjustment to treatment,[13] while an educational program based on the Roper–Logan–Tierney model improved independence and self-care ability.[12] These findings point to the importance of incorporating emotional, cognitive, social, and functional dimensions into nursing assessment.

This incorporation is particularly important because a care plan that is excessively focused on biomedical parameters may fail to identify barriers that can compromise treatment. Insufficient knowledge, low self-efficacy, emotional distress, or difficulties in performing self-care activities may interfere with adherence even when technical guidance is adequately provided.[11–13] Assessing these dimensions therefore allows for more individualized interventions and for monitoring whether the expected outcomes are being achieved.

Continuity of care also emerged as a cross-cutting element of the identified interventions. Telephone follow-up, digital resources, family involvement, and follow-up after educational interventions demonstrate that some nursing actions can extend beyond the time spent in the hemodialysis unit.[17,26] This is particularly relevant given the continuous nature of treatment and the need to maintain self-care behaviors in daily life.

The main contribution of the proposal developed in this study lies not in presenting entirely new interventions, but in integrating the available evidence into a care framework organized according to the Nursing Process. Previous studies have already described nursing interventions and activities applicable to hemodialysis, as well as initiatives to systematize care.[2,3] However, the present proposal incorporates evidence on health education and digital resources, longitudinal follow-up, self-care, vascular access management, cannulation, symptom management, and psychosocial aspects, integrating these components with the stages of the Nursing Process.[4,9–14,17–31]

This organization is supported by COFEN Resolution No. 736/2024, which establishes Nursing Assessment, Nursing Diagnosis, Nursing Planning, Nursing Implementation, and Nursing Evaluation as interrelated, interdependent, recurrent, and cyclical stages.[1] From this perspective, the identification of a need during assessment should inform clinical judgment, the definition of expected outcomes, the selection of interventions, and the subsequent evaluation of the response obtained. Therefore, the value of the Nursing Care Plan lies not in the number of procedures described, but in the integration of identified needs, clinical judgment, expected outcomes, proposed interventions, and evaluation of the outcomes achieved.

This aspect also represents an important consideration for the practical application of the proposal. The plan should not be interpreted as a rigid and uniform prescription for all people undergoing hemodialysis. The clinical, functional, psychosocial, and educational heterogeneity of this population requires individualized care. Furthermore, the included evidence was produced across different countries, services, populations, and care settings; therefore, it cannot be assumed that all interventions will have the same effectiveness across different contexts. The proposal should thus serve as a framework to support nurses' clinical reasoning, allowing interventions to be selected according to the needs identified for each individual.

Limitations

Some limitations should be considered when interpreting the results. Although four databases were searched, 12 potentially eligible publications could not be retrieved in full text, preventing a definitive assessment of their eligibility. In addition, the included studies were heterogeneous in terms of methodological designs, population characteristics, interventions, and outcomes assessed. Therefore, a narrative synthesis was conducted without quantitative pooling of the results.

This methodological diversity implies varying levels of robustness among the evidence supporting the components of the Nursing Care Plan. Consequently, the inclusion of a given intervention in the proposed plan should not be interpreted as indicating equivalence among all the evidence included. Furthermore, the proposal was developed based on the synthesis of the literature and, in this study, was not subjected to content validation by experts or to assessment of its feasibility, acceptability, or effectiveness in clinical practice. These steps represent relevant directions for future research.

Implications for nursing practice and research

Organizing the evidence according to the Nursing Process may help support clinical reasoning, promote continuity of care, and broaden attention to dimensions that extend beyond the physiological parameters of the dialysis session, including self-care, comfort, functional status, and psychosocial needs.[1–3] The proposal may also support future initiatives aimed at developing clinical care protocols, documentation tools, and educational programs for nursing teams in hemodialysis services.

However, additional evaluation is required before recommending its incorporation as a clinical care protocol. Future studies may conduct expert content validation, assess clinical applicability, and undertake prospective studies to investigate outcomes related to safety, adherence, self-care, vascular access complications, quality of life, and other nursing-sensitive outcomes. This process would enable progression from an evidence-based proposal toward a care technology that is progressively validated for use in clinical practice.

Conclusion

This study enabled the development of a proposed Nursing Care Plan for adults undergoing hemodialysis, grounded in scientific evidence and structured according to the stages of the Nursing Process. The evidence identified showed that nursing care in this setting extends beyond clinical monitoring during the dialysis session and encompasses health education and self-care, vascular access management and preservation, prevention and management of complications and symptoms, psychosocial support, and continuity of care.

The organization of these findings made it possible to integrate care provided during the pre-dialysis, intradialytic, and post-dialysis periods with actions undertaken during the interdialytic period and at home, linking assessment, clinical judgment, planning, implementation, and outcome monitoring. Thus, the proposed plan may serve as a resource to support the systematization of nursing care and nurses' clinical reasoning, promoting individualized, continuous, and evidence-based care.

However, its use as a clinical care protocol still requires further validation.

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Conflicts of interest

The authors declare no conflicts of interest.

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