

## Challenges in patient accessibility to hemodialysis treatment

*Desafíos en la accesibilidad de los pacientes al tratamiento de hemodiálisis*

*Desafios na acessibilidade do paciente ao tratamento hemodialítico*

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### How to cite this article:

Moraes CLK, Santos ACG, Souza FPB, Paula IBB, Oliveira RFLF. Challenges in patient accessibility to hemodialysis treatment. Glob Acad Nurs. 2024;5(1):e422. <https://dx.doi.org/10.5935/2675-5602.20200422>

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Submission: 04-11-2024

Approval: 06-07-2024

### Abstract

This study aimed to identify the challenges in accessing treatment for hemodialysis patients. This is an integrative literature review, using the following steps: selection of the research question; literature search; characterization of studies; analysis of findings; interpretation of results; and synthesis of the review. The content analysis adopted allowed the analysis and discussion of the results found. A total of 339 articles were found and, after applying the inclusion and exclusion criteria, the final sample resulted in three articles. The content analysis adopted allowed the analysis and discussion of the results found. It was found that the challenges in accessing hemodialysis treatment affect the quality of life of patients with kidney disease and their families since some patients seek care in distant regions due to the search for excellence or the lack of nearby vacancies, which results in displacements, migrations and impacts on social relationships and quality of life. Given the scenario presented by this review, it is important to implement public policies that promote technologies for improvement, prevention, mental health, and innovations for more effective and accessible treatments.

**Descriptors:** Hemodialysis; Geographic Accessibility; Pendulum Migration; Chronic Renal Failure; Chronic Kidney Failure.

### Resumen

El objetivo fue identificar los desafíos en la accesibilidad al tratamiento para pacientes en hemodiálisis. Se trata de una investigación bibliográfica del tipo revisión integrativa de la literatura, utilizando los siguientes pasos: selección de la pregunta de investigación; búsqueda de literatura; caracterización de estudios; análisis de hallazgos; interpretación de resultados; resumen de revisión. El análisis de contenido adoptado permitió analizar y discutir los resultados encontrados. Se encontraron 339 artículos y luego de aplicar los criterios de inclusión y exclusión, la muestra final resultó en tres artículos. El análisis de contenido adoptado permitió analizar y discutir los resultados encontrados. Se encontró que los desafíos en la accesibilidad al tratamiento de hemodiálisis afectan la calidad de vida de los pacientes con enfermedad renal y sus familiares, ya que algunos pacientes buscan atención en regiones lejanas por la búsqueda de la excelencia o la falta de lugares cercanos, lo que resulta en desplazamientos, migraciones e impactos en las relaciones sociales y la calidad de vida. Ante el escenario que presenta esta revisión, es importante implementar políticas públicas que promuevan tecnologías para la mejora, la prevención, la salud mental e innovaciones para tratamientos más efectivos y accesibles.

**Descriptores:** Hemodiálisis; Accesibilidad Geográfica; Migración Itinerante; Insuficiencia Renal Crónica; Insuficiencia Renal Crónica.

### Resumo

Objetivou-se identificar os desafios na acessibilidade ao tratamento de pacientes em hemodiálise. Trata-se de uma pesquisa bibliográfica do tipo revisão integrativa da literatura, utilizando-se das seguintes etapas: seleção da pergunta de pesquisa; busca na literatura; caracterização dos estudos; análise dos achados; interpretação dos resultados; síntese da revisão. A análise de conteúdo adotada permitiu analisar e discutir os resultados encontrados. Foram encontrados 339 artigos e pós aplicação dos critérios de inclusão e exclusão, a amostra final resultou em três artigos. A análise de conteúdo adotada permitiu analisar e discutir os resultados encontrados. Constatou-se que os desafios na acessibilidade ao tratamento hemodialítico afeta a qualidade de vida de pacientes com doença renal e seus familiares, visto que alguns pacientes buscam atendimento em regiões distantes devido à busca por excelência ou à falta de vagas próximas, o que resulta em deslocamentos, migrações e impactos nas relações sociais e qualidade de vida. Diante do cenário apresentado por esta revisão, é importante implementar políticas públicas que promovam tecnologias de melhoria, prevenção, saúde mental e inovações para tratamentos mais eficazes e acessíveis.

**Descritores:** Hemodiálise; Acessibilidade Geográfica; Migração Pendular; Insuficiência Renal Crônica; Falência Renal Crônica.



## Introduction

According to the Brazilian Society of Nephrology, in 2021, there were approximately 140,000 patients undergoing dialysis treatment in Brazil, with approximately 90% of them using hemodialysis as a treatment method. This process requires a significant commitment on the part of patients, as they undergo long-term treatment that can last several hours a day, several days a week. This frequency and duration of therapy can impact the quality of life of patients<sup>1</sup>.

Treatment can be challenging for patients, as it involves a series of care and restrictions that can affect their quality of life. In addition, changes in routine, the need to deal with dietary restrictions, and the dependence on medical procedures can cause discouragement and stress for people living with chronic kidney disease (CKD). Unfortunately, in some situations, people may feel overwhelmed by the demands of treatment and even abandon necessary care. This can result in serious health complications, including worsening kidney function, increased risk of cardiovascular complications, and other health problems<sup>2</sup>.

It is important to note that the hemodialysis treatment policy is indeed complex, requiring specialized care for people with Renal Failure (RF) who require dialysis regularly. The distance between patients and dialysis centers can be a significant challenge, and this can negatively impact the health indicators of these patients, making access to treatment more difficult and resulting in complications<sup>3</sup>.

The National Policy for Regulation of the Unified Health System (SUS) aims to organize, control, and manage access and care flows in the health system in Brazil<sup>4</sup>.

The intermunicipal reference, that is, the establishment from where the patient is referred for specialized treatment, is the responsibility of the state manager, who must ensure that patients can be referred to more suitable treatment centers, even if this involves travel between municipalities<sup>5</sup>. The establishment of the National Policy for Care for Patients with Kidney Disease aims to ensure universal care for all people with Kidney Failure, regardless of the level of care. This means that access to treatment and care related to kidney disease must be made available to all patients, whether in primary, secondary, or tertiary care, seeking a comprehensive and integrated approach<sup>6</sup>.

Ordinance No. 211/2004 of the Brazilian Ministry of Health, published on February 19, 2004, is a regulation that regulates highly complex nephrology services within the Unified Health System (SUS). This ordinance establishes important guidelines for the organization of nephrology services, especially those related to renal replacement therapy (RRT). One of the guidelines highlighted in Ordinance No. 211/2004 is the need for health facilities that offer nephrology services regulated by the SUS to have a defined territorial base of operation. This area of coverage should be regulated by the Ministry of Health and the Ministry of Education, seeking to optimize the coverage and accessibility of quality services for the largest possible number of patients in need, thus maximizing the efficiency

of available resources and offering accessible care to patients with CKD, especially those who require RRT<sup>5</sup>.

Due to their proximity to patients and constant presence, the nurse plays a crucial role in this scenario, not only providing clinical care but also acting as a link of communication and support between the health team, the patient, and the family<sup>7</sup>.

The nurse's holistic and continuous approach contributes to more complete and effective care, helping patients face the challenges of CKD and live healthier and more satisfying lives, even in the face of the limitations imposed by the disease<sup>7</sup>.

It is observed that, because of the COVID outbreak in 2019, the number of individuals seeking hemodialysis treatment increased. Given this, the question arises regarding the accessibility of these patients to treatment. To this end, the question was raised: "What are the challenges in dialysis patients' accessibility to their treatment?" Therefore, the objective of this article is to identify the challenges of accessibility to hemodialysis treatment.

## Methodology

This is a bibliographic research of the integrative literature review type, using the following steps: selection of the research question; literature search; characterization of the studies; analysis of the findings; interpretation of the results; synthesis of the review<sup>8</sup>.

The following research question was presented as a guiding question for the search for studies in the literature: "What are the challenges in dialysis patients' access to their treatment?". The search was conducted through the Virtual Health Library (VHL) in the databases Latin American and Caribbean Literature in Health Sciences (LILACS), Nursing Database (BDENF), Medical Literature Analysis and Retrieval System Online (MEDLINE), and Scientific Electronic Library Online (SciELO) and articles published in the last five years. The inclusion criteria were complete articles available in full for free in Portuguese. The exclusion criteria considered were review studies, theses, dissertations, letters, and editorials. The following descriptors with Boolean operators were used to search the databases: ("chronic renal failure") AND ("Hemodialysis") AND ("Geographic Accessibility"), ("commuting") AND (Hemodialysis). The database search was carried out in October 2023.

The selected studies, after applying the inclusion and exclusion criteria, were read in full and organized in electronic spreadsheets with the following information: author, title (year of publication, journal), objective, results, and conclusion. The data were analyzed through content analysis and with the approximation of the pertinent literature<sup>9</sup>.

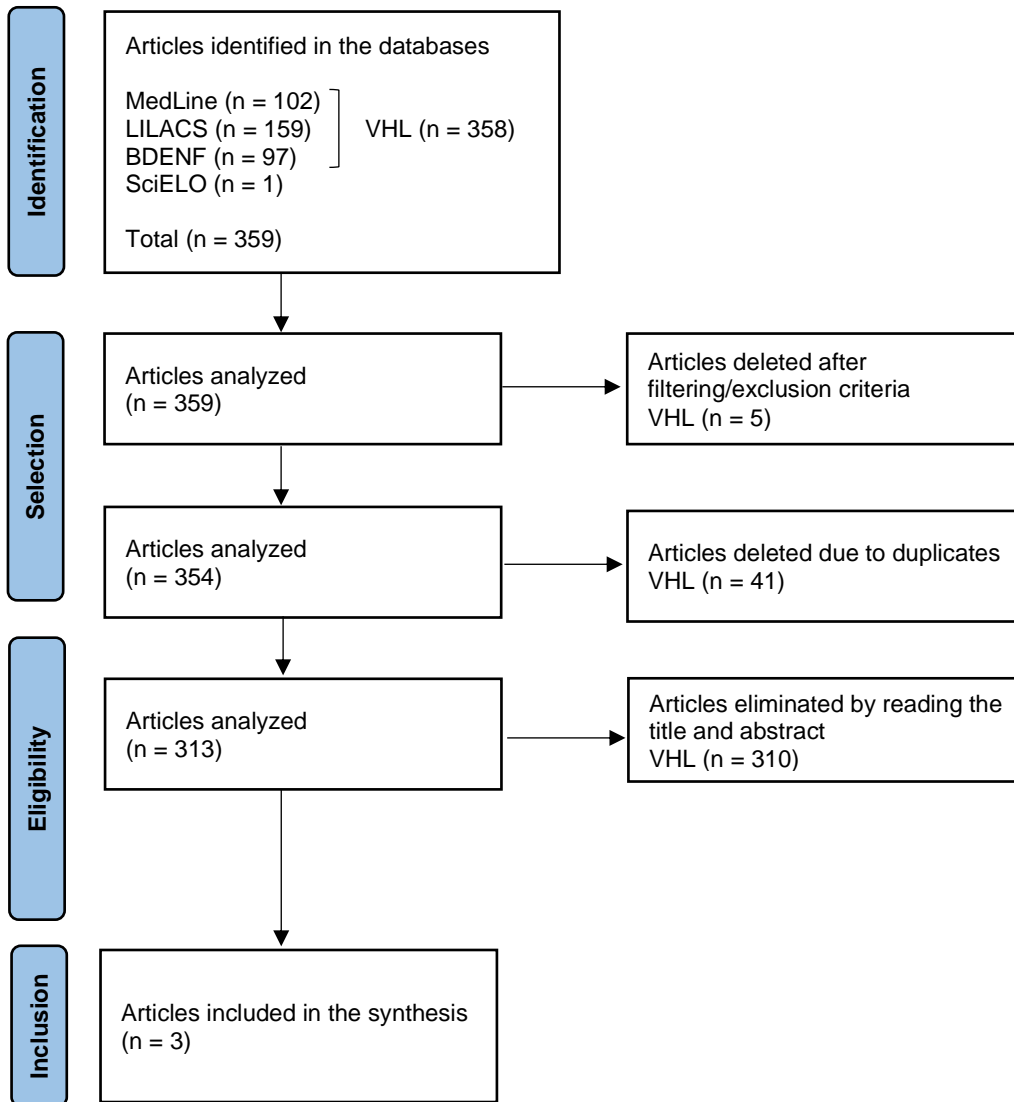
The first search found six articles, the second 332 articles, and the third only one, of which 195 were from LILACS, 118 from BDENF and 97 from MEDLINE, and one from SciELO, totaling 339. After applying the inclusion and exclusion criteria and a careful reading, the results were three articles in total, one from SciELO and two from BDENF. The articles were read in full and organized in a spreadsheet with the following information: year/journal, author,



objective, result, and conclusion, arranged in the results chapter. The data obtained were analyzed through content

analysis and with the approximation of the pertinent literature<sup>9</sup>.

Figure 1. Flowchart of the article selection process (adapted from PRISMA). São José, SC, Brazil, 2018-2023



**Results**

The total number of articles selected that met the objective of the study - which is to identify the challenges of

accessibility to hemodialysis treatment - was three articles. Regarding the year of publication, the articles range from 2018 to 2022, with one in 2018 and two in 2022.

Chart 1. List of the final sample of articles by author(s), year of publication/journal, objectives, results, and conclusion. São José, SC, Brazil, 2018-2023

Authors/ Journal/ Year	Objective	Results	Conclusion
Spigolon et al. Rev. enferm. UFPE on line; 2018.	Identify accessibility to treatment and the health status of hemodialysis patients.	Of the 151 patients, 49.6% are elderly; 54.3% have low levels of education; 66.2% have a monthly income of up to two minimum wages; 93.4% have their treatment financed by the SUS, however, 45.7% report spending on treatment; 66.9% speak of non-compliance with conservative treatment; 84.1% received pre-dialysis care; 84.1% report their health as good and half of them are followed by primary health care (50.3%).	There is a need to strengthen the social support and health care network since the characterized condition of vulnerability elucidates new challenges in the development of actions in health promotion, prevention of complications, and the accessibility and organization of the flow of care.
Elaine et al. Enferm. actual Costa Rica (Online); 2022.	Characterize the sociodemographic and clinical profile of people undergoing hemodialysis in the South of Rio Grande do Sul, Brazil.	Were interviewed 335 people undergoing hemodialysis in five municipalities in the south of Rio Grande do Sul, Brazil. The majority, most with low family income, reported spending related to treatment, mainly on medications.	The findings pointed to the need to reorganize care for chronic kidney disease within primary and secondary care services, aiming at early detection of the disease and



Authors/ Journal/ Year	Objective	Results	Conclusion
		Diabetes mellitus was the main etiology of kidney disease. The occurrence of infectious diseases, such as hepatitis B, C, and HIV, was observed.	clinical control of risk factors, including diabetes, especially in less favored socioeconomic groups, facilitating access of this population to health care network services.
Muniz et al. Preprints SciELO; 2022.	Highlight the pendular migration from the search for the Hemodialysis service, and the secondary objectives were to outline the possible profiles and their intersections, and the longevity of the patients.	Of the 262 patients who underwent hemodialysis treatment, 17.55% were commuters to the service. Pinheiro had the highest proportion of patients commuting, followed by Santa Inês and Coroaá. The predominant sex was female, especially in Pinheiro. Coroaá and Imperatriz had more male patients. Mixed races were the majority, except for Imperatriz, which had 100%. Mortality was present in females, especially in the 5-14 and 25-34 age groups. Incomplete elementary education was common. Illiteracy occurred in almost all macro-regions. Macro-regions close to São Luís had patients with higher life expectancies than those further away.	The study indicates that most patients were female, brown, had not completed primary education and were between 5 and 14 years old. This points to flaws in the health system. The life expectancy of commuting patients was lower, with 23.91% living up to 250 days. Geographic accessibility to health services plays a crucial role in this context. In short, distances, geographical limitations and the quality of health services affect commuting in the health area.

After reading the published articles regarding the challenges in patient access to hemodialysis treatment, the results obtained were discussed considering the literature to promote an enriching discussion, increasing knowledge on the study topic.

**Discussion**

Patient access to dialysis treatment can be facilitated or hindered by several factors. Understanding the strategies that enhance access to treatment for this group of patients, as well as the barriers that still need to be overcome, makes us think more consciously, visualizing opportunities for improvement. According to a study<sup>10</sup>, the following elements are evident as facilitators of access to hemodialysis treatment: the implementation of the National Policy for Care for CKD patients; full financing of therapy by the SUS, as well as the cost of transportation and access to medications; increase (expansion) of active units for the treatment of dialysis patients; the possibility of peritoneal dialysis. Studies have shown that access to treatment by the SUS ensures greater adherence to treatment and a decrease in mortality since CKD patients have limitations in maintaining their professional activity. The increase and expansion of specialized hemodialysis units is an important factor seen.

The distance between hemodialysis centers and the homes of these patients and the low use of alternative methods such as peritoneal dialysis, associated with the time spent traveling for therapy, make treatment stressful, favoring non-adherence to medical recommendations supporting treatment<sup>11</sup>.

Another result of this review was the issue of factors that hinder access to dialysis treatment, which include: low education level; low income (aggravated by loss of wages due to decreased productivity); geographic barriers (the lower the income and education level, the further away the residence is from specialized centers); restriction on companions during transportation to specialized hemodialysis centers, paying for some medications with one's own resources and underutilization of peritoneal

dialysis. Other studies have already pointed out the impacts of low socioeconomic conditions on health maintenance. It is worth noting that CKD has significant impacts on society, the economy, and the quality of life of those affected, in addition to overloading the public health system, causing the loss of years of useful life, and generating economic and social costs for the patient and their family<sup>12,13</sup>.

Most people with CKD face significant financial difficulties, with almost half of the participants using their savings to cover the extra costs of treatment, in addition to problems with paying for medical, dental, and medication care, transportation difficulties to treatment, and purchasing medications. These factors can represent barriers to accessing the care needed by people with CKD<sup>14</sup>.

The selected studies demonstrated the commuting in search of hemodialysis services in Brazilian states and the predominance of social minorities in patient profiles, thus proving geographic accessibility to health services as a relevant determinant of hemodialysis therapy<sup>3</sup>.

Study<sup>15</sup> defines "polarized regions" in the geographic approach as hierarchical spaces, where one city is more "structured" than another, promoting the centrality of cities and a multilateral spatial system increasing the economic lifestyle, driving exchanges and flows of goods, services, and labor, influencing social issues such as demographic migrations. Geographical barriers make the provision of quality care more difficult, due to distance and the need to assess the transfer and acceptance of patients in the macroregion patients. Patients may seek care in distant regions due to the search for excellence or the lack of nearby vacancies, which results in displacements, migrations, and impacts on social relations and quality of life. The unavailability of vacancies in the nearby clinic influences the employment relationship and, in some cases, may require changes of domicile patients<sup>11</sup>.

Commuting establishes relationships that are relevant to studies on accessibility to health services, since unlike other types of travel, commuting is a determining factor in the health-disease process, since in cases of some pathologies, physical effort demands poorer adherence and



success of procedures. Difficulties in accessing treatment in cities in the interior of the state, lead patients to travel, often long distances, interfering with their physical conditions, and leaving them vulnerable to risk of physiological changes. Other limitations/challenges reported were regarding transportation to hemodialysis sessions, where most use public transportation to get to and from treatment locations. CKD treatment changes the entire lifestyle of patients, in addition to the issue of accepting the diagnosis as mentioned above, there are changes in their personal, family, and professional relationships<sup>13</sup>.

Patients undergoing hemodialysis therapy need to attend the dialysis center at least three times a week, which amounts to 144 days throughout the year. The hemodialysis treatment regimen can impose physical and psychosocial strain, in addition to changes in the self-image of patients due to the time spent exclusively on treatment, as well as its characteristics that impact the quality of life of patients. The complexity of the therapeutic regimen for patients undergoing dialysis therapy and the recurrent growth in the population undergoing hemodialysis treatment over the last decades has become a challenge for health planning. Ensuring access to therapy close to home is of fundamental importance to minimize psychosocial, physical, and economic impacts and to improve aspects related to quality of life, as it will allow less time to be spent exclusively on patient treatment<sup>11</sup>.

Regarding the migration process in search of hemodialysis services, the relationship between the distribution of Brazilian dialysis units and the incidence and prevalence rates of chronic kidney disease is problematic. Through the establishment of the National Policy for Care for Patients with Kidney Disease, universal care is established for all patients with RI in care and at all levels of care<sup>3,13,16</sup>.

Population movements, including commuting, are a significant feature of Brazilian life. In Brazil's public health sector, the search for better access to hospital and outpatient services is one of the main reasons for these migrations. Commuting in the health sector is influenced by distances, the availability of therapeutic services, the quality of care, and the proximity of individuals. The hinterland of the most important cities (regions far from urban areas or metropolitan centers) and economic factors play a decisive role in this dynamic, affecting accessibility to specialized health services. Access to hospital services is influenced by factors such as the physical location of hospitals and the availability of public or SUS-subsidized services for patients<sup>3,11</sup>.

According to a study<sup>11</sup>, Health care is not limited to the existence of hospital/outpatient units and material services, but a plural action that considers their spatial

distribution. And, when this relationship is understood, it is noted that this population movement based on flows in search of clinical resolutions, notifies geographic accessibility in the context of health. However, although the SUS has made progress in serving people with chronic kidney disease, at the three levels of health care, it is undeniable that there are still gaps in terms of the supply and access of the population to these services, a fact that compromises the effectiveness of the SUS principles, especially concerning comprehensiveness. In addition to the issue of accepting the diagnosis, the limitations/challenges related to treatment were evident, regarding access to the hospital/medical team for monitoring and hemodialysis sessions and continuous medication use to maintain the patient's health.

Regarding the epidemiological profile of patients, the predominant characteristics were: female gender; brown skin color/race; incomplete elementary education, and between the ages of 5 and 14. These data also expose a flaw in the health system, which implies that it is not a problem focused on the provision of the service itself, but on its accessibility in numerous circumstances, with social problems as a backdrop, especially the blatant economic and racial inequalities<sup>3</sup>.

### Final Considerations

Difficulty in accessing hemodialysis treatment is a critical issue that affects the quality of life of patients with kidney disease. Given the scenario presented by this review, it is of utmost importance that future studies address the challenges of access to chronic kidney disease treatment, to advance discussions on the topic and the measures to be adopted for better health promotion to better meet the needs of the population.

Providing close access to hemodialysis therapy improves quality of life and reduces the time spent on treatment. Building more hemodialysis centers in high-demand areas reduces the distance for patients. It is important to implement public policies that promote technologies for improvement, prevention, mental health, and innovations for more effective and accessible treatments. It is suggested to promote education on kidney health, expand telemedicine, encourage home dialysis, holistically offer transportation subsidies, also targeting the companion, create financial support, increase awareness, and eliminate bureaucratic barriers to improve access to hemodialysis treatment and prevent kidney diseases.

Some limitations need to be highlighted, such as the absence of regional publications, since geography and population diversity, as well as the economy in different regions of the country, may present different scenarios related to accessibility to hemodialysis therapy.

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