

## Nurse's Role In The Kidney Transplant Process: Integrative Review

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### Abstract:

The role of nurses in the context of kidney transplantation is a fundamental element for comprehensive and effective patient care. The study aimed to identify nurses' care in the kidney transplant process. An integrative review was carried out. The search took place in September 2023 in the databases: (MEDLINE); (LILACS), (BDENF). The Health Sciences Descriptors (DeCS ) and *Medical Subject Headings* ( MeSH ) were used: (Chronic Renal Failure; *Kidney Failure* , *Chronic* ) AND ( *Kidney Transplant* ; *Kidney Transplantation* ) AND ( *Nursing Care* ). The inclusion criteria were primary articles that addressed nurses' actions in the kidney transplant process, published between 2018 and September 2023, in Portuguese, English and Spanish. The exclusion criteria were: editorials, theses, dissertations, review articles and those that did not answer the research question. 256 publications were identified and, after applying the exclusion criteria, 12 articles were eligible for analysis. As a result, the findings highlight the importance of communication, precise protocols, education, emotional support, personalized care and ongoing training to obtain more satisfactory clinical results and provide a better quality of life for kidney transplant patients. In conclusion, it is recommended that further study of the implementation of standardized care protocols and the evaluation of their effectiveness in improving the quality of care for kidney transplant patients be carried out.

**Key Word:** *Nursing care; Chronic Kidney Failure; Kidney transplantation; Renal Patient.*

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### I. Introduction

Solid organ transplantation is a treatment option that can improve the quality of life for people of any age with an advanced, irreversible chronic disease. Since the first successful organ transplant in 1954, solid organ transplantation has steadily advanced in the treatment of kidney, pancreatic, liver, heart, lung, intestinal, and other diseases (Breitsameter; Breitsameter, 2022).

According to Cunha and Lemos (2020), chronic kidney disease (CKD) is defined by a syndromic diagnosis with progressive and irreversible loss of glomerular filtration and/or lesions in the renal parenchyma over a period of three or more months and is an indication for it to be performed organ transplant.

It is configured as an important global public health problem that affects more than 90 thousand people in Brazil, with a higher incidence in the age group of 19 to 64 years. This rate tends to increase as chronic diseases are affecting the population on an increasing scale, due to population aging and delays in diagnosing the condition (Souza *et al.*, 2023).

A kidney transplant is a surgical procedure that involves the transfer of a healthy organ from one person (donor) to another (recipient) to restore lost or ineffective function and depends on the assessment of points such as the underlying disease, stage, rate of progression and comorbidities for it to be carried out (Patucci *et al.*, 2023).

It is currently considered the best treatment option from a medical, social, and economic point of view, compared to hemodialysis, as it is accompanied by cost savings and can be attributed mainly to advances in the

surgical technique performed. In addition to being an option that can improve long-term survival (Pimentel; Cavalcante; Silva, 2021).

An epidemiological study carried out using secondary data observed that 19,823 kidney transplants were registered in Brazil, in the years between 2013 and 2017. Of these, it was found that 79.94% were through deceased donors (DF) and 53.01% occurred in Southeast region. It was found that only 3,970 (20.06%) were Living Donors (VD) in the country, with the majority (13.13%) also being the responsibility of the southeast region, totaling 53.01% of the total transplants performed in the country (Souza Júnior *et al.*, 2019).

In 2019, Brazil performed more than 23,000 transplants and of them, a total of 6,283 were kidney transplants. There were 5,210 with DF and 1,073 with DV. In Rio Grande do Sul, in the same period, the numbers were 491 transplants in total, the majority of which were from DF (458). It is also noteworthy that the southern region was responsible for having the highest number of donors per million in the population (36.1), which puts it above the national average of donors per million population (Machado *et al.*, 2022).

The success of a complex procedure such as kidney transplantation is directly linked to the health support network in which the transplanted person is inserted, because, throughout the process, there may be numerous cases of hospital needs such as hospitalizations and highly complex procedures, as well as monitoring primary care in its home country (Rocha *et al.*, 2021).

It is noteworthy that the professional nurse is essential in the care of the transplanted person, since he is the professional who is closest to the patient throughout the process, capable of encouraging, alerting, and providing pre-, trans- and post-transplant guidance to the user. about the modification of behaviors necessary to live after the procedures, knowing that the practical theoretical improvement in training must be a continuous action, at all levels of health care (Silva; Loiola, 2020).

As it is a highly complex procedure, kidney transplantation requires specific care from the nursing team. To achieve this, it is necessary for nurses to systematize their actions, care and interventions with periodic assessment of patients. The health care provided to transplant patients thus becomes quality and safe care, as this activity is based on scientific evidence (Melo; Peixoto; Silva, 2023).

It is emphasized that the professional nurse must be trained and have skills and competencies to assist the transplant patient to enable safe care for the patient and the team, better quality of care provided, greater graft survival and better quality of life in recipients. of kidney transplantation (Oliveira *et al.*, 2023).

Based on these foundations and observing the increase in the number of kidney transplants performed, it is essential that nurses involved in the process have specific knowledge and skills to provide safe and effective care to patients. Furthermore, nurses have a fundamental role in educating and supporting transplant patients and their families, as well as preventing and treating postoperative complications. Therefore, it is important to investigate the specific actions of nurses in this process to improve the care provided. Therefore, the present study aimed to identify nurses' care in the kidney transplant process.

## **II. Material And Methods**

This research is characterized as an integrative literature review, which consists of preparing a comprehensive analysis of data from the literature, being used as an aid for discussions on research methods and results, in addition to containing numerous explanations of concepts, review of theories and evidence and analysis of methodological problems, leading to reflection on the execution of future studies (Mendes; Silveira; Galvão, 2008). The method's initial purpose is to acquire an understanding of a phenomenon exposed in questions based mainly on scientific evidence (Munn *et al.*, 2018).

As a basis for the present study, six steps were used to complete this review: 1) Preparation of the starting question; 2) search and selection of research that will make up the study; 3) Definition of the characteristics of the studies; 4) Critical analysis for inclusion of studies; 5) Interpretation and discussion of results; 6) Presentation of the review (BOTELHO; CUNHA; MACEDO, 2011). The process review will be based on recommendations from the *Preferred checklist Reporting Items for Systematic Reviews and Meta-Analyses* (PRISMA) (Moher *et al.*, 2010).

The research question was developed according to the Population Interest Context (PICO) strategy, being (acronym for P: population/disease; I: intervention; Context). The PICO strategy is used to help determine what the research question should specify. When considering, therefore, the following structure: P- kidney disease; I- Kidney Transplant; Co- Nursing care. Therefore, the following question was developed: What are the nurse's precautions in the kidney transplant process in the existing literature?

The data search was carried out in September 2023, in which articles were selected through online access in electronic databases: *Medical Literature Analysis and Retrieval System Online* (MEDLINE), through the *National Library of Medicine National Institutes of Health* (PUBMED); Latin American and Caribbean Literature in Health Sciences (LILACS), Nursing Databases (BDENF) via Virtual Health Library (VHL). A secondary search was also carried out on *Google Scholar*; *ClinicalTrial.gov* and ReBEC, cross-references, in

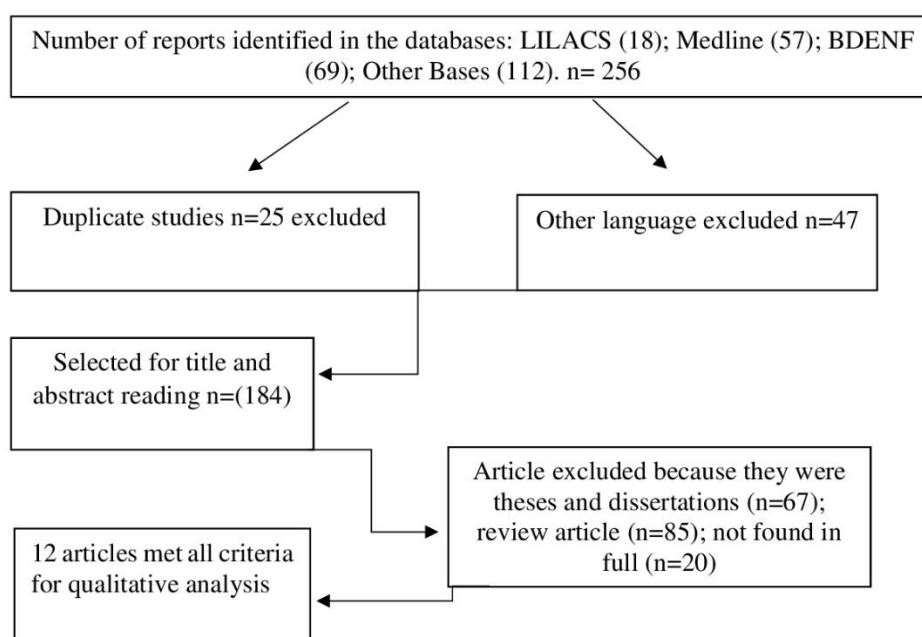
addition to analyzing the reference list of the primary studies that were included, with the aim of identifying other publications relevant to the study.

To construct the search strategy, ordered descriptors registered in Health Sciences Descriptors (DeCS) and *Medical Subject Headings* (MeSH) were used: (Chronic Renal Failure; *Kidney Failure, Chronic*); (Kidney Transplantation; *Kidney Transplantation*); (Nursing care; Nursing Care). The Boolean operator *AND* was used to cross-reference the descriptors. Search strategy can be defined as a tool or group of rules to make the comparison between a generated question and the information recorded in a database admissible. *EndNote* bibliographic software was used to store, organize, and manage references and ensure systematic and comprehensive searching.

The inclusion criteria were primary articles that addressed nurses' actions in the kidney transplant process, published between 2018 and September 2023, in Portuguese, English and Spanish. The exclusion criteria were editorials, theses, dissertations, review articles and those that did not answer the research question.

After selecting the scientific publications, the content was read, followed by a thorough analysis of the main information seeking to understand and expand specific knowledge on the topic. The concepts were prepared based on references extracted from selected publications. The conformation of the results and debates of the information was carried out in a descriptive way and through the construction of a synoptic table, containing the title of the study, author, year of publication, databases, type of study and results.

**Figure no 1:** Analytical flowchart of the bibliographic survey of the integrative review. Brazil, 2023



Source: Author's own work (2023)

According to figure 1, 256 publications were found, therefore, 25 were excluded because they were duplicates, 47 articles were excluded because they were in a language other than English, Portuguese or Spanish, 67 studies were excluded because they were theses and dissertations, 85 articles were excluded because were reviews and 20 studies were excluded because they were not found in full, leaving 12 studies included for analysis.

### III. Result

After thoroughly reading and analyzing the collected data, it was feasible to select 12 publications that exemplify the main concepts that met the purposes of this research. These were coded in chronological order of publication from oldest to most recent, where they are presented in table 1 below.

**Table no 1:** Studies included in the literature review. Brazil, 2023.

N.	Author/year	Title	Kind of study	Results
1	Ferreira <i>et al.</i> (2018)	Dialogic relationship with the client regarding kidney transplantation: educational nursing care	Qualitative cross-sectional study	The dialogue enabled reflection on the construction and reconstruction of knowledge and practices about kidney transplantation and revealed co-responsibility between professionals, clients

				and their families in the recovery process from the surgical procedure and graft maintenance (AU).
2	Silva <i>et al.</i> (2018)	Predictors for establishing nursing diagnoses in kidney transplant patients	Qualitative cross-sectional study	The predictors identified were invasive procedures for diagnosing risk of infection; disruption of the skin surface, invasion of body structures and immune deficiency for impaired skin integrity; report of tiredness and disease state for fatigue and verbal report of pain and harmful agents for acute pain.
3	Pedroso <i>et al.</i> (2019)	Nurse's guidance and changes in behavior: path to survival for kidney transplant recipients	Descriptive, exploratory study with a qualitative approach	behavioral changes of post-kidney transplant users, based on the guidance received by the nurse for home care, are identified from the speeches, with some weaknesses in the users' adherence to the expected conduct for the maintenance of the transplanted graft.
4	Elmaasarani <i>et al.</i> (2019)	Protocol-based nursing coordinator management of outpatient tacrolimus dosing in de novo kidney transplant recipients - a single-center experience with a large African American population .	Retrospective study with a qualitative approach	Transplant nurse coordinators are able to accurately follow a protocol for tacrolimus dosage adjustment in a large, racially diverse kidney transplant center.
5	Kochhann ; Figueiredo, (2020)	Nursing in kidney transplantation: comparison of care demands between scales	Prospective Cohort Study	The findings of this study suggest that there is a difference between the number of hours of care required by kidney transplant recipients in the postoperative period when comparing the SCP and NAS instruments, and this also affects the type of care.
6	Silva <i>et al.</i> (2020)	Perception of individuals with chronic kidney disease on hemodialysis about kidney transplantation	Qualitative, descriptive, exploratory study	The importance of health education, especially in Nursing, was also identified, influencing the clarification and reduction of concerns regarding transplantation.
7	Zílio <i>et al.</i> (2020)	Kidney transplant: intensive care nurse in the immediate postoperative period	Qualitative study	The study highlighted the strengthening of nurses' knowledge, highlighted the use of checklists, the importance of continuing education and family members as a source of support for patients
8	Ribeiro <i>et al.</i> (2021)	Feelings, experiences and expectations of kidney transplant recipients and challenges for nurses	Qualitative, descriptive study	The nurse's approach to the chronic kidney patient and the kidney transplant recipient favors the finding of solutions to the demands of the disease and allows them greater capacity to implement individualized care, surrounded by a relationship of trust and respect.
9	Mercês <i>et al.</i> (2021)	Factors associated with nursing diagnoses in chronic kidney disease patients	Cross-sectional study	The main nursing diagnoses and their association with clinical and sociodemographic variables in chronic kidney disease patients in the Brazilian context. Future research may lead to the implementation of care plans for the most prevalent nursing diagnoses in this type of population.
10	Herrera <i>et al.</i> (2021)	Nursing care for pre-operative, immediate post-transplant and immediate kidney transplant patients at the Renal Transplant Unit of the Hospital de Especialidades Carlos Andrade Marín	Qualitative, descriptive study	Nursing care within this pathway is specialized and comprehensive, which includes the pre-operative, immediate and early post-transplant periods, also incorporating an educational process between the nurse, the patient and the family/caregiver, in order to preserve survival.
11	Machado <i>et al.</i> (2022)	Technical-assistance model of nursing care for kidney transplant patients	Qualitative, descriptive study	The model developed was based on the theories of Watson and Orem, covering comprehensiveness, promotion of self-care and nurses' actions, as well as needs highlighted by patients.
12	Muhammad <i>et al.</i> (2022)	Knowledge About Postoperative Care Of Kidney Transplant Patients Among Nurses In Peshawar, Pakistan	Descriptive cross-sectional study	Nurses demonstrate little knowledge about postoperative care for kidney transplant patients. Education and experience play an essential role in improving the training of nursing staff working in kidney transplant units. Formal training needs to be provided

				to provide quality care to kidney transplant patients.
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Source: Author's own work (2023)

When analyzing the year of publication, 2020 and 2021 were the periods with the highest number, three (25.00%) both, followed by 2018, 2019 and 2022 with two (16.7%) both, the year 2023 did not identify eligible publications for this study. The concentration of studies in 2020 and 2021 may indicate a recent increase in interest in research related to kidney transplants and nursing care in this context, probably influenced by the challenges and advances in this area.

Regarding the place where the studies were carried out, the country with the greatest predominance was Brazil, with eight (66.7%), the others were: one (8.3%) in the United States, one (8.3%) in Ecuador, one (8.3%) in Colombia, and one (8.3%) in Pakistan. Regarding languages, six (50%) were published in Portuguese, five (42%) in English and one (8%) in Spanish. As for the databases, five (42%) in BDNF, four (33%) in Lilacs and three (25%) in Medline.

It is interesting to note that most studies were carried out in Brazil, which may reflect the interest and research activity around nursing care for kidney transplant patients in that country. Furthermore, the prevalence of studies in Portuguese is understandable, given that many local studies are published in the region's dominant language. It is also notable that Brazil has a strong presence in databases specific to nursing, such as BDNF and Lilacs.

Based on the articles, the most common type of study observed is the qualitative study, followed by cross-sectional and prospective cohort studies. These types of qualitative studies often involve analysis of interviews, observations, or narratives to understand the experiences and perceptions of patients and nursing professionals in the context of kidney transplants. Qualitative cross-sectional studies analyze relationships at a particular point in time, while prospective cohort studies follow a group of patients over time to identify trends and changes.

#### **IV. Discussion**

Chronic Renal Failure (CRF) represents a significant concern in the health sector, and the need to explore new research in search of improvements in the treatment of this condition is undeniable. According to the observations of Silva *et al.* (2020), *the situation of individuals who depend on hemodialysis therapy to treat CRF is remarkably complex. Adapting to this process is a crucial stage of treatment, as it involves several changes in the daily life of the patient and those around them.*

The study by Silva *et al.* (2018), with the cross-sectional method carried out with 84 patients in a hospital in the Northeast region of Brazil through an interview guide and physical examination, observed the complexity of the adaptation process of patients after kidney transplantation and the importance of an approach interdisciplinary and personalized to meet the specific needs of each patient. These findings have significant implications for clinical practice and may contribute to improving the quality of life and survival of kidney transplant patients. At the beginning of the process, the nurse plays an important role in the initial assessment of patients. This includes collecting a detailed patient's medical history and identifying factors that may affect their transplant eligibility. This assessment is essential to ensure that only suitable patients are considered for the procedure, increasing the chances of success.

In this sense, Ferreira *et al.* (2018), their study with 11 patients with chronic kidney disease eligible for transplantation, in a university hospital in the city of Rio de Janeiro, through individual interviews between March 2016 and February 2017, points to the need for a comprehensive and interactive approach to the care of kidney transplant patients. This includes effective communication, promoting adherence to treatment and empowering the patient and their family to deal with the challenges and uncertainties that may arise in the transplant process. This approach contributes to a better quality of life and better long-term outcomes for patients.

Pedroso *et al.* (2019), in their research using the descriptive, exploratory method with a qualitative approach, carried out with 13 users through semi-structured interviews and thematic analysis of the data, pointed out that communication plays an essential role in the effectiveness of this process. Nurses need to provide clear guidance and comprehensive information, covering everything from initial assessment to post-transplant follow-up. This is essential for patients to understand what they can expect at each stage, deal with the uncertainties inherent to the procedure and make informed decisions.

For Elmaasarani *et al.* (2019), it is important to recognize that the kidney transplant process is complex and often permeated by challenges and uncertainties. Understanding these uncertainties, as well as possible complications and their reactions, is essential for preparing for and effectively coping with these situations, both by the patient and the medical team.

The role of nurses plays a crucial role in providing high-quality care to patients undergoing kidney transplantation. The results of the Kochhann study; Figueiredo, (2020), highlight that nurses play an essential

role in the initial assessment of patients after kidney transplantation. Determining the severity of patients through the Patient Classification System is essential for the efficient allocation of resources and defining the level of care required. This allows for equitable distribution of the workforce and ensures patients receive the appropriate level of care, which is crucial to optimizing clinical outcomes.

Kochhann; Figueiredo, (2020), also highlight variability in the Nursing Activity Score (NAS) scores, indicating that some patients require more care than others. In this context, the nurse plays a fundamental role in adapting care to the specific needs of each patient, ensuring that the care plan is personalized to meet individual demands.

In this sense, Silva *et al.* (2020), add that monitoring and providing intensive care are a fundamental part of the nurse's role. Items such as laboratory investigations, medication administration and treatment to improve lung function require close supervision by nurses. This includes ensuring that medications are administered correctly, test results are monitored, and that lung function is optimised, for example through chest physiotherapy.

Corroborating Silva *et al.* (2020), Zílio *et al.* (2020), point out that in addition to clinical aspects, nurses play an important role in the efficient management of the care unit. This involves administrative and managerial tasks, ensuring resources are available and processes are effective, enabling nursing staff to provide high-quality care on an ongoing basis.

Another relevant point is raised in the study by Ribeiro *et al.* (2021), support for the patient and family. Items such as support and care for family members play a critical role in patients' recovery. Nurses provide emotional support to patients and their families, helping to alleviate the stress and anxiety associated with the kidney transplant process. This support is vital for the general well-being of patients and their adaptation to their new health situation.

Mercês *et al.* (2021), also point out that patient education is an integral part of the nurse's role. During the hospital stay, nurses could educate patients about their treatment, medications, self-care and warning signs. This is important for the patient's successful transition from the intensive care unit to life after transplant, ensuring they have the skills and knowledge needed to manage their own health. Patient education and preparation are also a crucial part of a nurse's role. They provide comprehensive information about the transplant process, including risks, benefits, and alternatives. In addition, they advise patients on preparation for surgery, including the need for fasting, adequate hygiene and the correct use of medications.

The study by Muhammad *et al.* (2022), nursing plays a fundamental role in all phases of the post-kidney transplant period, prioritizing the early identification of possible problems and offering personalized care to prevent complications and ensure the success of the transplant. It is important to highlight that health education is also an essential part of the nurse's role in this care process.

Otherwise, Machado *et al.* (2022), point out that nurses play a fundamental role in coordinating care and managing the needs of patients who are on the kidney transplant waiting list. They are responsible for conducting consultations, assessing patients' health status, providing information about the process and assisting in decision-making in collaboration with other members of the multidisciplinary team. Furthermore, nurses play a vital role in educating patients about necessary exams, preparation for surgery and the importance of self-care, especially when it comes to controlling diseases such as diabetes mellitus and systemic arterial hypertension.

Herrera *et al.* (2021), point out that in interviews with patients, the nurse is the health professional who can provide essential guidance and information about kidney transplantation. They are responsible for addressing patients' expectations, answering questions, alleviating fears, and providing detailed information about post-transplant treatment. The nurse's role in this context is crucial to ensure that patients are well-informed, prepared for the process and aware of the changes in lifestyle that may arise after illness and transplantation.

During focus groups with nurses, the performance of these professionals is discussed critically. They share experiences, concerns, and suggestions to improve care for kidney transplant patients. This is where the lack of standardization in care and the need for a clear flow of care are identified. Nurses propose strategies to improve communication, education, and coordination of care between different phases of kidney transplantation. Furthermore, they highlight the importance of providing information at different points of contact with patients, such as waiting rooms and inpatient units (Kochhann; Figueiredo, 2020).

One of the most evident difficulties is the complexity of the kidney transplant procedure. This is a delicate surgery that involves several aspects, from rigorous patient assessment to the administration of complex postoperative care. Nurses play a fundamental role in coordinating this care and ensuring that each step is carried out accurately Mercês *et al.*, 2021).

The study conducted by Mercês *et al.* (2021), analyzed the factors associated with nursing diagnoses in patients with chronic kidney disease. The results of this study highlighted that nursing care is often determined by medical prescriptions, rather than being based on individualized assessments made by nurses. The authors highlighted that, in the health unit studied, not all stages of the Nursing Care Systematization (NCS) process

were implemented, with only the prescription, diagnosis and nursing evolution phase being applied. Therefore, this emphasizes the importance of nurses structuring their care in a more comprehensive way, fully using the specific instruments of their profession.

In the study by Silva *et al.* (2020), the environment in the hospitalization unit for patients undergoing transplants was noted as a significant challenge, characterized by a high level of stress, tension and intense demands. Nurses often face pressure from both the medical team and nursing colleagues, and, in many cases, complications occurring with patients in this unit are attributed to the nursing team.

Regarding the instructions provided by nurses to patients in the context of transplants, the study of Machado *et al.* (2022), points out that these guidelines are often not completely understood or assimilated, which can complicate the treatment to which they are undergoing. Often, discharge instructions are presented only at the time of hospital discharge, without taking advantage of the period of hospitalization to fully educate patients. During this moment, various information about the necessary care is transmitted, and often it is only communicated verbally, which can make it difficult for the patient to understand and increase the risk of errors. Furthermore, discharge instructions do not follow a single standard, as they consider the patient's individual conditions and needs, depending on each nurse's criteria. This is seen yet another challenge faced by nurses in providing care to patients after transplant surgery.

Furthermore, there is a lack of continuity in work and a lack of integration between the various professionals involved, which does not guarantee that patients receive the necessary guidance and, instead, exposes them to repetitive and exhaustive information. Nurses realize that it is essential to have better organization and greater cooperation both within and between health teams, who participate in the transplant program, in order to provide more effective care for patients (Machado *et al.*, 2022).

For Ribeiro *et al.* (2021), despite all the advances in scientific knowledge and health systems over time, we still face numerous challenges regarding chronic kidney disease. Furthermore, difficulties in diagnosis continue to be evident and, inevitably, contribute to worsening the patients' situation. In line with these findings, Machado *et al.* (2022), highlight that the diagnosis of chronic kidney disease, the treatment, and the changes that the pathology causes in people's lives are experienced amidst a series of battles, restrictions, resignations, fear, anger, sadness and other feelings that are often expressed in a variety of ways in hospitals, clinics and healthcare institutions that care for individuals with chronic kidney disease.

According to a study by Ferreira *et al.* (2018), stress can weaken the patient's psychological and emotional stability, leading to feelings of incapacity. In the study by Silva *et al.* (2018), it is crucial that professionals who are in direct contact with these individuals are attentive to patients' reports about the discomforts they experience before and after hemodialysis sessions and during hospitalization. Notwithstanding Pedroso *et al.* (2019), point out that there is a crucial need for the nursing team, together with other health professionals, to act in a more comprehensive way, understanding and implementing actions that can effectively improve the reality of many patients who face treatment challenges.

## **V. Conclusion**

The main objective of this study was to investigate nurses' care in the kidney transplant process, with a special focus on the performance and difficulties faced by these professionals. Based on the integrative review of the studies, it can be concluded that the objective was achieved, providing a comprehensive view of the importance of nurses' actions in this context. The results highlight that nurses play a fundamental role in all phases of the kidney transplant process. From the initial assessment of patients to post-transplant follow-up, your contribution is essential to ensure the success of the procedure and the quality of life of patients.

They play a central role in assessing patients, providing education, coordinating care, and providing emotional support. However, this study also identified significant challenges that nurses face, including procedural complexity, lack of standardization in care, stress on the inpatient unit, and lack of integration among healthcare professionals. These challenges highlight the need for a more effective interdisciplinary approach and a concerted effort to improve care for kidney transplant patients.

For future research, it is recommended to further study the implementation of standardized care protocols and evaluate their effectiveness in improving the quality of care for kidney transplant patients. Furthermore, investigations into strategies to promote effective communication between healthcare professionals and optimization of care coordination are necessary to overcome the identified difficulties. It is also important to consider research that explores the impact of nursing interventions on the clinical outcome of patients undergoing kidney transplantation, as well as studies that evaluate the impact of patient education on their adaptation to the procedure and on promoting better self-care.

This study contributed to understanding the importance of the nurse's role in the kidney transplant process and the challenges that need to be overcome.

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