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Kidney transplantation and its impact on quality of life: an integrative review

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Abstract: Chronic kidney disease (CKD) is highly prevalent worldwide and carries significant morbidity and mortality rates. Kidney transplantation is the last-line therapy for patients with end-stage renal disease. The quality of life after kidney transplantation is a widely studied topic, given its importance in assessing not only the clinical aspects but also the overall impact on the patient's life. Objective: This study aims to analyze the key impacts of kidney transplantation on the quality of life of transplant recipients. Methods: An integrative literature review was conducted using the Virtual Health Library (VHL) and PubMed databases. Articles were selected between April and June 2025 using the descriptors "kidney transplantation," "quality of life," and "transplant recipient," combined with the Boolean operator AND. Inclusion criteria were primary studies published in national and international journals within the last five years. Exclusion criteria were review articles, experience reports, editorials, articles requiring a subscription for open access, and studies that did not address the research question. The guiding question of this study was: What are the main impacts of kidney transplantation on the quality of life of patients after the procedure? Results and Discussion: Kidney transplantation significantly improves the quality of life and physical well-being, such as the ability to resume daily activities, enhanced self-esteem, reduced depressive symptoms, and increased autonomy. However, these benefits are accompanied by challenges, including side effects of immunosuppressive medications, sleep disorders, and physical limitations. Continuous care is essential, emphasizing the need for a multidisciplinary approach. The results highlight the positive influence of transplantation on work capacity and social reintegration, though factors like age, education level, and access to rehabilitation can affect this process. Psychologically, patients show significant improvements in mental well-being post-transplant compared to those on dialysis, with reduced levels of depression, anxiety, and stress. However, the side effects of immunosuppressants may lead to mood swings, insomnia, and fear of graft rejection. Conclusion: While kidney transplantation leads to significant improvements in the patients' quality of life particularly in physical, psychological, and social domains these benefits are not without challenges. Recipients face ongoing issues such as immunosuppressive side effects, sleep disturbances, functional and mental limitations, and the need for continuous multidisciplinary care.

Keywords: kidney transplantation, quality of life, transplant recipient, psychological well-being, immunosuppressive therapy.

1. Introduction

Chronic Kidney Disease (CKD) is a prevalent condition globally, with high morbidity and mortality rates. The primary causes of kidney damage are diabetes mellitus and hypertension. Renal replacement therapies (RRTs), including hemodialysis, peritoneal dialysis, and kidney transplantation, offer patients extended survival, though often accompanied by various comorbidities. Kidney transplantation is the final therapeutic option for patients with end-stage renal disease (ESRD). Compared to dialysis, kidney transplant recipients generally experience better long-term prognosis, improved quality of life, and lower treatment costs. However, the use of immunosuppressive therapies to prevent organ rejection makes recipients more vulnerable to infections, representing a significant complication in the post-transplant period.

Initial costs associated with kidney transplantation are high due to the complexity of the surgical procedure. However, expenses following surgery are lower, mainly related to post-transplant care and immunosuppressive medications (critical for preventing organ rejection and ensuring graft survival). In contrast, costs for hemodialysis and peritoneal dialysis rise due to the disease's progression, irreversible kidney function loss, and associated cardiovascular complications.

The quality of life following kidney transplantation has been widely studied in the literature because it is essential to assess not only the clinical aspects post-procedure but also the broader impact on patients' lives. This therapy offers several advantages compared to hemodialysis and peritoneal dialysis. Kidney transplant recipients often experience a significant improvement in quality of life, gaining more energy to resume daily activities and becoming less dependent on ongoing medical treatments.

However, the perception of quality of life is subjective, varying based on individual experiences and the daily changes in routine caused by the disease and its treatment. Kidney transplantation provides significant emotional, psychological, and survival benefits. Nonetheless, patients face new challenges, such as fears of losing the new kidney, anxiety, uncertainties, and frustrations related to adapting to the new life as transplant recipients.

Several instruments are currently used to assess quality of life, with specific versions adapted for different contexts and population profiles, allowing for a more sensitive evaluation based on the unique characteristics and needs of each group. One such tool is the Health-Related Quality of Life (HRQOL) scale, which assesses quality of life in relation to health aspects. Developed in the 1970s, this tool expanded the focus from merely diagnosing the presence of diseases to understanding how health impacts daily life, well-being, and overall satisfaction. In addition, specific scales exist for particular populations. The Kidney Disease Quality of Life – Short Form (KDQOL-SF) is widely used in clinical practice to evaluate different domains of quality of life specific to CKD. Developed by a group of researchers in the 1990s in the United States, it is based on the SF-36 (Short Form 36 Health Survey), a broader tool for assessing general perceptions of physical and mental health.

Kidney transplantation represents one of the key therapeutic interventions for individuals with end-stage renal disease, offering not only extended survival but also substantial improvements in quality of life. It is a highly effective alternative to dialysis therapies, enabling greater autonomy, physical well-being, and psychological health.

The goal of this literature review is to analyze the main impacts of kidney transplantation on the quality of life of transplant recipients, considering physical, emotional, and social aspects related to the rehabilitation and post-transplant adaptation process.

2. Methodology

This study is an integrative literature review, conducted according to the methodological steps outlined by Mendes, Silveira, and Galvão: (1) defining the theme and formulating the research question; (2) literature search through databases; (3) data collection; (4) categorization and analysis of information; (5) discussion of the results found; and (6) critical analysis and synthesis of the literature review. This approach allows the integration of results from different study designs, broadening the understanding of the impacts of kidney transplantation on quality of life.

2.1 Guiding Question and PICO Strategy

The guiding question for this review was: "What are the main impacts of kidney transplantation on the quality of life of patients after the procedure?" To direct the database searches and organize the research question, the PICO strategy was used as follows:

- P (Population) – descriptor "transplant recipient"
- I (Intervention) – descriptor "kidney transplantation"
- O (Outcome) – descriptor "quality of life."

2.2 Information Sources and Search Strategy

The literature search was conducted in the PubMed and Virtual Health Library (BVS) databases between April and June 2025. Controlled descriptors (MeSH/DeCS) and keywords were used, combined with the Boolean operator AND. The strategies were structured to ensure reproducibility and transparency.

2.2.1 Search Strategy — PubMed

The following query was used:

("Kidney Transplantation"[MeSH] OR "kidney transplantation"[Title/Abstract])
AND
("Quality of Life"[MeSH] OR "quality of life"[Title/Abstract])
AND
("Transplant Recipients"[MeSH] OR "transplant recipient"[Title/Abstract])
Filters applied: Full-text availability, Articles published within the last 5 years, Original studie

2.2.2 Search Strategy — BVS

The search strategy was:

(transplant recipient) AND (kidney transplantation) AND (quality of life)

Filters applied: Full text, Primary studies, Last 5 years

2.3 Eligibility Criteria

Inclusion Criteria:

- Primary studies (cross-sectional, cohort, clinical trials, prospective or retrospective studies)
- Published in national or international peer-reviewed journals

- Available in full and open access
- Published within the last five years
- Addressed quality of life in the context of kidney transplantation.

Exclusion Criteria:

- Literature reviews, Experience reports, Editorials, or letters to the editor.
- Articles without free full-text access
- Studies that did not answer the guiding question

2.4 Study Selection Process

The selection process occurred in three stages:

1. Title screening → exclusion of studies unrelated to the topic.
2. Abstract screening → preliminary application of eligibility criteria.
3. Full-text reading → confirmation of relevance to the guiding question.

The process was documented according to PRISMA guidelines[9] and resulted in 12 studies included.

2.5 Data Extraction and Analysis

The selected articles were analyzed using a structured extraction form containing:

- Study identification (title, authors, year, country)
- Study design
- Sample characteristics
- Instruments used to assess quality of life (e.g., SF-36, KDQOL-SF, QOLI)
- Main findings and conclusions

A thematic qualitative analysis was conducted, appropriate for the heterogeneity of the studies. After extraction, the findings were grouped into predefined thematic categories, allowing comparison of converging and diverging results.

2.6 Data Synthesis

Due to the diversity in study designs, assessment tools, and outcomes, a narrative synthesis was conducted, organized into three interpretative axes:

1. Effects of kidney transplantation on quality of life and physical well-being
2. Repercussions on functional capacity and work-related activities
3. Impact on mental health and psychosocial dimensions

This synthesis enabled the integration of both quantitative and qualitative evidence, providing a comprehensive overview of the effects of kidney transplantation

2.7 Ethical Considerations

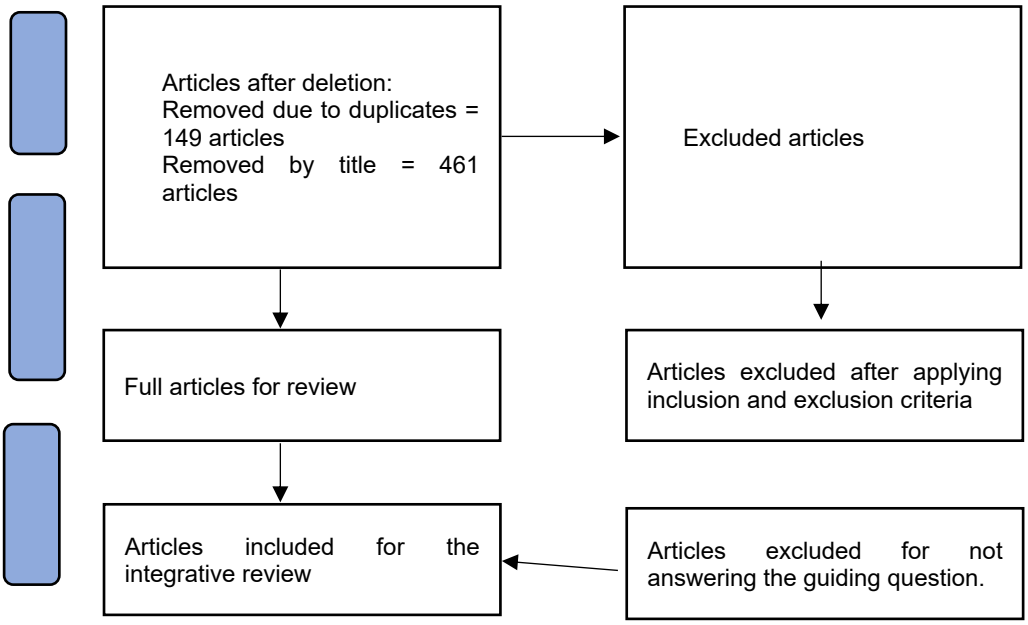
As this is a secondary study based on publicly available data, ethical approval was not required. All included studies reported approval from institutional ethics committees, following current ethical standards.

3. Results and Discussion

To systematize the process of study selection and definition of the final sample, the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) methodology was adopted. The steps involved in this process are represented by the flowchart in Figure 1. Considering the search strategy applied in the previously mentioned databases, a total of 689 articles were identified

(477 in PubMed and 212 in BVS). Initially, 149 duplicate articles were excluded. After reading the titles, an additional 461 articles were excluded, and after reviewing the abstracts, another 44 articles were excluded, totaling 654 articles removed. After applying the inclusion and exclusion criteria, 17 more studies were excluded, followed by another 5 studies that did not address the research question. After this process, 12 articles remained for full-text evaluation, and these were selected to form the final sample for this review.

Figure 1 – PRISMA Flowchart:



Source: Developed by Author (2025).

	TITLE	AUTHORS	OBJECTIVES	METHOD	RESULTS
A1[10]	Comparison between depression, stress, anxiety, cognitive status, and quality of life before and after kidney transplantation.	Sudip S. M. Suprakash C. (2024)	To compare levels of depression, anxiety, stress, cognitive status, and quality of life in kidney transplant recipients before and after surgery.	A descriptive, qualitative, and comparative study was conducted with 100 patients scheduled for kidney transplantation at a tertiary care center in Pune, India. Participants were assessed before and one month after surgery using scales that assess stress, anxiety, and depression, quality of life in kidney disease, and cognitive and psychological assessment.	The study showed a significant decrease in depression, anxiety, and stress, reduced cognitive impairment, and improvement in 15 of the 17 dimensions of quality of life, particularly in physical functioning and social interactions, although psychological challenges may still persist.
A2[11]	A prospective study on depression and quality of life after kidney transplantation	Hermanns, et al. (2024)	To investigate whether kidney transplantation, the treatment of choice for chronic kidney failure, improves depression and health-related quality of life (HRQoL) throughout life and whether this effect is sustainable in the long term.	In a longitudinal observational cohort study, we assessed depression and quality of life in patients on the waiting list for kidney transplantation, 3 months and 1 year after the procedure. The following instruments were used: Beck Depression Inventory-II (BDI-II), version 1.3 of the Kidney Disease Quality of Life Short Form, and the composite physical health score (PCS) and composite mental health score (MCS).	A total of 239 BDI-II assessments of 99 patients and 143 Kidney Disease Quality of Life version 1.3 assessments of 59 patients were analyzed. The results show that depression and quality of life improve after kidney transplantation. Although depression improves at all ages, the improvement in HRQoL, especially in PCS (physical health), is more evident in younger patients. This improvement in depression and HRQoL is maintained for at least 1 year after the procedure.
A3[12]	Quality of life of kidney transplant recipients in Amazonas	Cordeiro, et al. (2024)	To analyze the quality of life of kidney transplant recipients in the state of Amazonas.	A cross-sectional, descriptive study was conducted with 222 individuals who had undergone kidney transplantation and were registered at a private clinic and a public health clinic. Data were collected through a structured interview in which quality of life was measured using the Kidney Disease Quality of Life – Short Form (KDQOL-SF). Descriptive statistics were used for data analysis.	The quality of life scores ranged from 36.5 to 83.1. The disease-specific quality of life domains were higher than the generic ones. The most compromised domains were work situation, sleep, physical function, and emotional function. Most (63.2%) of the quality of life domains obtained high scores, and the kidney disease-specific component had higher scores than the generic component.

Table 1 – Title and authors of the study, objectives, methodological design of the research, and main results obtained.

A4[13]	Kidney transplantation improves health-related quality of life in elderly recipients	Boer, et al. (2024)	To identify potential determinants of health-related quality of life (HRQoL) after kidney transplantation.	The study was conducted using data from the Transplant Lines Biobank and Cohort Study (a database that tracks the same patients over time) and compared the health-related quality of life (HRQoL) of elderly patients on the waiting list for kidney transplantation and elderly patients one year after transplantation. A total of 145 patients on the waiting list and 115 transplant recipients were evaluated, all with an average age of 70 years. HRQoL was measured using the SF-36 questionnaire.	Transplant recipients had higher mental and physical HRQoL than those on the waiting list. In 46 patients who had data before and after transplantation, there was a significant improvement in physical HRQoL and a trend toward improvement in mental HRQoL. The main factor associated with poorer HRQoL was the side effects of immunosuppressants.
A5[14]	Sleep quality, fatigue, social participation, and health-related quality of life in kidney transplant recipients: a cross-sectional and longitudinal cohort study	Knobbe, et al. (2023)	To analyze which clinical factors interfere with the sleep quality of transplant patients and what consequences of poor sleep quality are related to fatigue, concentration, motivation, physical activity, social participation, and HRQoL reported by patients.	The study used cross-sectional and longitudinal data from kidney transplant patients enrolled in the Transplant Lines Biobank and Cohort Study. Sleep quality was assessed using the Pittsburgh Sleep Quality Index, while individual strength was measured by a combination of factors such as fatigue, concentration, motivation, and physical activity. In addition, social participation and health-related quality of life (HRQoL) were assessed using validated questionnaires.	The study included 872 kidney transplant patients and 335 healthy patients. Longitudinal data showed that sleep quality improved in men after kidney transplantation, but not in women. Poor sleep quality is common among kidney transplant recipients, a fact that may make sleep quality a target for improving fatigue, social participation, and HRQoL in these patients.
A6[15]	Employment status and work performance among kidney transplant recipients	Knobbe, et al. (2022)	To investigate the proportion of employed kidney transplant recipients and to assess their professional performance. Finally, we investigated the trajectory of professional performance before and after transplantation.	This was a descriptive, prospective study conducted at a medical center in the Netherlands. The study used data from the Transplant Lines Biobank and Cohort and data from employed adults living in the community. The professional performance of kidney transplant recipients was assessed using the Professional Functioning Questionnaire 2.0 and compared with the performance of potential kidney donors and employed adults in the community.	The study included 668 working-age kidney transplant recipients, with an average of 3 years of transplantation, 246 potential kidney donors, and 553 employed adults living in the community. Employed kidney transplant recipients had lower work functioning scores than employed kidney donors but higher than adults in the community. Kidney transplant recipients with stable employment perform well at work, with a significant improvement after transplantation.

A7[16]	Experiences of adults living with a kidney transplant—Effects on physical activity, physical function, and quality of life: A descriptive phenomenological study	Auntoun, et al. (2022)	To investigate the experiences of adults living with advanced kidney disease, with an emphasis on quality of life, physical activity, and physical function, and to analyze how these outcomes vary in comparison to a group of kidney transplant recipients.	Descriptive phenomenological study conducted at a nephrology and transplant center in the United Kingdom. Data were collected through individual semi-structured interviews with 20 participants (10 pre-kidney transplant patients and 10 post-kidney transplant patients).	Participants with advanced kidney disease reported feelings of loss and changes in their life plans. Kidney transplant recipients, on the other hand, reported greater freedom, independence, and improvement in quality of life, physical activity, and function. However, they also expressed anxiety about the health of the transplant and fear of its failure.
A8[17]	Manual dexterity, daily functioning, and health-related quality of life in kidney transplant recipients	Knobbe, et. al. (2022)	To assess manual dexterity among kidney transplant patients and identify potential clinical or biochemical determinants of manual dexterity and investigate the associations between manual dexterity and activities of daily living and HRQoL.	Prospective study conducted using data from the Transplant Lines Biobank and Cohort Study. The study included 309 stable kidney transplant recipients with a functional allograft, with a mean transplant time of 4 years, with available data on manual dexterity.	The mean time to complete the manual dexterity test was 23.9 seconds. Among the 309 kidney transplant recipients, 71 (23%) performed below expectations, based on a reference population sample. Impaired manual dexterity was associated with compromised daily functioning and limited physical HRQoL. Impaired interaction between sensory and motor functions may therefore be an important and hitherto neglected phenomenon.
A9[18]	Quality of life of kidney transplant recipients and hemodialysis patients in Palestine: a cross-sectional study.	Sarhan, A.L., Jarareh, R.H., & Shraim, M. (2021)	Compare HRQoL in kidney transplant recipients and hemodialysis (HD) patients.	Cross-sectional study of 100 kidney transplant patients and 272 HD patients from two renal units in Palestine, using the SF-36 questionnaire. SF-36 questionnaire.	Transplant recipients had better HRQoL in the main domains and subscales of the SF-36, including physical functioning, physical role, bodily pain, general health, vitality, social functioning, emotional role, and mental health.
A10[19]	Quality of life among kidney transplant recipients in Bahrain:	El-Agroudy, et al. (2021)	To assess quality of life (QoL) in kidney transplant recipients in Bahrain.	A cross-sectional study was conducted with kidney transplant recipients from nephrology clinics at a hospital in Bahrain, a small Arab country located in the Middle East. This study included 58 stable kidney transplant patients aged	The highest quality of life scores were observed in the psychological/spiritual (87.4), family (85.5), health and functioning (82.7), and social and economic (80.5) domains. Most kidney transplant patients in Bahrain are satisfied with

	experience from a single center.			between 26 and 71 years. A structured questionnaire was used for data collection, and QoL was measured using the Quality of Life Index (QOLI).	their QoL, which, after transplantation, is impacted by sociodemographic and clinical factors.
A11 [20]	Personalized physical rehabilitation program and employment in kidney transplant recipients: a randomized trial.	Kastelz, et. al. (2021)	To evaluate the effects of a personalized physical rehabilitation program on the employment status of kidney transplant patients.	Randomized clinical trial comparing the effects of a 12-month physical exercise rehabilitation program (intervention) with standard care (control) in kidney transplant recipients. The intervention consisted of personalized resistance training twice a week with 80 participants (52 in the intervention and 28 in the control).	For those who were unemployed at baseline, employment increased by 52.3% in the intervention group, compared to 13.3% in the control group. For those already employed, 100% remained employed after 12 months in both groups. The intervention group showed significant improvements in physical health, mental and overall health, and physical function. Exercise rehabilitation after kidney transplantation can improve employability, physical and mental health, and generate better health outcomes in kidney transplant recipients.
A12 [21]	Factors associated with health-related quality of life in kidney transplant recipients in South Korea	Hwang, Y. Misoo, K. Kyoungok M. (2021)	To investigate the associations between perceived health status, social support, self-determination, post-traumatic growth, and health-related quality of life (HRQOL) in kidney transplant recipients.	This study consisted of a descriptive self-assessment survey involving 163 kidney transplant recipients at a transplant center in South Korea. Information was collected on the general characteristics of the participants, the transplant, perceived health status, post-traumatic growth, social support, self-determination, and health-related quality of life (HRQOL). The data were statistically analyzed using SPSS software, version 25.0.	The factors that influenced HRQOL were perceived health status, post-transplant occupation, and source of income. HRQOL showed significant positive correlations with perceived health status, social support, self-determination, post-traumatic growth, and health-related quality of life. To promote HRQoL in kidney transplant recipients, it is necessary to help them return to work and create an environment in which they can act with self-determination.

Discussion

The selected studies addressed issues related to the impact of kidney transplantation on quality of life after the procedure. For a better understanding and discussion of the results, three thematic categories were developed, which will allow for a more comprehensive analysis of the topic.

Effects of kidney transplantation on quality of life and physical well-being

Compared to dialysis therapy, kidney transplantation can bring significant benefits in terms of physical and mental well-being, as it allows individuals to resume various daily activities that were not possible before the procedure. This therapy also increases patients' independence due to reduced medical dependence and improved physical function.

The main change reported by patients is improved self-esteem and satisfaction at being able to return to a "normal" life. Despite these benefits, the use of immunosuppressants and complications associated with transplantation also affected quality of life, as the fear of losing the transplanted organ can generate feelings of fear and anxiety, accompanied or not by restrictive behaviors to preserve the health of the graft. Although transplant recipients show improvements in physical function after transplantation, they still have a lower quality of life compared to the general population. Barriers such as lack of motivation and fatigue are common, indicating the need for improved follow-up to encourage physical activity and reduce anxiety (Antoun et al., 2023).

One consequence of kidney transplantation is decreased manual dexterity. Motor function is compromised in transplant recipients due to damage to the nervous system resulting from advanced chronic kidney disease.

Pre-transplant hemodialysis is also a determining factor in manual dexterity, considering that dialysis patients often have neurological complications related to the uremic state resulting from renal failure or as an effect of dialysis therapy. Impaired interaction between sensory and motor functions can be a significant indicator of the patient's overall decline in health. This aspect, which has been little explored, shows that manual dexterity is associated with difficulties in daily activities and limited physical quality of life (Knobbe et al., 2022).

It is essential to develop health education programs and actions focused on the care and lifestyle of patients in the post-kidney transplant period, with an emphasis on guidance and promotion of physical exercise compatible with the clinical conditions of this population.

In this context, nursing plays a strategic role, considering its continuous and prolonged contact with patients undergoing outpatient follow-up. It is also important to pay attention to the quality of sleep of transplant patients, to identify factors related to sleep disorders, and to implement strategies that favor its regulation. It is also important to highlight the relevance of awareness campaigns on organ donation, as well as the dissemination of scientific evidence that points to the benefits of kidney transplantation for the quality of life of recipients (Cordeiro et al., 2020).

In the context of the elderly population, it was found that kidney transplantation promotes a significant improvement in health-related quality of life (HRQoL) when compared to those who remain on the waiting list.

It was observed that the HRQoL of transplanted individuals was similar to or even higher than that of the general population of the same age group, with the greatest benefits occurring among patients who had a poorer quality of life before the procedure. Among the main factors associated with reduced HRQoL after transplantation are the adverse effects of immunosuppressive therapy, episodes of graft rejection, and a previous history of dialysis. Hospitalization can contribute to a perception of less control over one's own health condition, especially among the elderly, intensifying awareness of the disease and negatively impacting mental health. Given this, it is essential that healthcare professionals be aware of these determinants in order to provide adequate physical and psychosocial support throughout the post-transplant recovery process (De Boer et al., 2024).

Sleep quality is a very important factor and is directly associated with the quality of life of all people. The sleep quality of transplant recipients is lower compared to the healthy population, and this factor is directly associated with lower social participation, less enthusiasm for daily activities, and excessive sleepiness.

A significant number of kidney transplant recipients report difficulty sleeping. Among the main factors associated with this problem are: female gender, anxiety, smoking, low protein intake, physical inactivity, low magnesium levels, use of calcineurin inhibitors and absence of mTOR inhibitors (immunosuppressants often used after transplantation), and use of benzodiazepines. Although calcineurin inhibitors are widely recommended to prevent graft rejection, there are other different immunosuppressive drugs or even slow-release tacrolimus, but these are still rarely used in clinical practice. The high prevalence of poor sleep quality among transplant recipients is concerning because it can trigger other problems such as cardiovascular disease, cancer, and infections, which are the leading causes of death among these patients (Knobbe et al., 2023).

Among the main limitations imposed by dialysis therapy are: time restrictions and routine changes due to the frequency of hemodialysis sessions, extreme physical fatigue, diets and fluid restrictions, changes in body image, and long-term complications such as cardiovascular problems, neuropathies, osteopenias, and infections.

For these reasons, the quality of life of patients with chronic kidney disease on hemodialysis therapy, when compared to that of a kidney transplant recipient, shows significant differences in several domains such as physical functioning, bodily pain, general health, vitality, social and emotional functioning, and mental health, indicating that after transplantation, the person shows improvements in health-related quality of life (HRQoL) (Sarhan et al., 2021).

Repercussions of kidney transplantation on work capacity and daily activities

Work capacity and employability can be one of the determining factors in the quality of life of transplant patients. Returning to work after kidney transplantation is directly related to improved health-related quality of life (HRQoL), as it reflects satisfactory physical condition and provides financial stability for the patient.

The proportion of kidney transplant recipients entering the labor market has increased modestly over the years and, despite this slight growth, employed individuals reported satisfactory work performance, especially when compared to workers with other chronic diseases. This performance may be related to factors such as advances in post-transplant care, an increase in preventive transplants, and improvements in the occupational environment. It should be noted,

however, that the data analyzed refer mainly to younger recipients in better health. The good work performance of these patients seems to be influenced by aspects such as physical and mental health, type of occupation, and education level (Knobbe et al., 2022).

Physical rehabilitation programs carried out through physical exercises tailored to individual clinical conditions, applied to kidney transplant recipients, can significantly improve quality of life.

Improved physical conditioning also contributes to an improvement in employability rates. These programs do not impact renal function markers such as serum creatinine and estimated glomerular filtration rate and do not cause graft rejection. Structured physical rehabilitation programs can play an important role in the reintegration of these individuals into the workforce and in improving their functionality, with positive repercussions for both their quality of life and their social and productive integration (Kastelz et al., 2021).

Source of income and level of education positively influence the physical and mental components of HRQoL. In addition, age has been shown to be a determining factor for the physical component of HRQoL, reinforcing the need for specific attention to elderly patients, especially given the gradual increase in the average age of individuals awaiting kidney transplantation (Hwang et al., 2021).

In this context, it is important to create institutional policies that encourage and support kidney transplant recipients in reintegrating into the labor market. These findings contribute to the deconstruction of stigmas related to work capacity after kidney transplantation

Influence of kidney transplantation on the mental health of transplant patients

Although kidney transplantation provides a better outlook for the patient's life, symptoms of depression, stress, and anxiety can often remain after the procedure.

These symptoms are highly prevalent among people with advanced kidney disease, as they face a number of physical, emotional, and social challenges throughout their treatment. Recurrent hospitalizations, uncertainty about prognosis, disease burden, isolation, and changes in body image are the main factors contributing to the decline in mental health in these individuals (Mukherjee & Chaudhury, 2024).

Kidney transplantation, by restoring the individual's renal function, allows for greater autonomy, less dependence on the healthcare system, and fewer dietary and fluid restrictions, positively impacting physical, emotional, and social well-being.

Patients on dialysis therapy have a lower quality of life when compared to both the general population and individuals who have undergone kidney transplantation, as it provides patients with a greater sense of control over their lives and health and is associated with longer-term survival (Hermanns et al., 2024).

4. Conclusion

The evidence obtained through this study allows us to understand that the success of transplantation goes beyond surgical intervention and requires continuous multidisciplinary

follow-up and strategies that promote patient adaptation and well-being throughout life. Kidney transplantation has a positive impact on several aspects of recipients' quality of life, promoting improvements in the physical health, functional capacity, and mental health of these individuals. The literature shows important repercussions of transplantation on the social reintegration of patients. Improvements in health-related quality of life are strongly associated with the possibility of returning to the labor market, financial stability, and the preservation of autonomy. Despite this, patients face several challenges after receiving the new organ. Among them are the side effects of immunosuppression, sleep disturbances, functional limitations, and the constant need for monitoring.

Finally, it is concluded that, although kidney transplantation provides a significant improvement in patients' quality of life—especially in physical, psychological, and social aspects—this progress does not occur without obstacles.

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