

Assessment of readings after kidney transplantation in the organizational work context

Avaliação das reinternações após o transplante renal no contexto organizacional de trabalho

Evaluación de lecturas después del trasplante renal en el contexto laboral organizativo

RESUMO

Objetivo: avaliar as causas das reinternações de pacientes submetidos a transplante renal em um hospital de Fortaleza, no contexto organizacional de trabalho. Método: Estudo com delineamento transversal e retrospectivo. Participaram 249 pacientes submetidos ao transplante renal com doador falecido no período de janeiro de 2019 a dezembro de 2021. Resultados: Os pacientes possuem, em média, 35 anos, sexo masculino, pardos e de procedência do interior do Estado. Evidenciou-se prevalência de idade (40 e 59 anos) e do sexo (masculino) em relação à reinternação hospitalar. A escolaridade apresentou resultado significativo. A diabetes mellitus e a hipertensão arterial sistêmica se apresentaram como fator de risco para a ocorrência de reinternação hospitalar pós-transplante renal. Conclusão: Os fatores sociodemográficos não possuem relação direta com a incidência de reinternação hospitalar, com a diabetes e a hipertensão arterial sistêmica como doença de base se apresentando como maior fator de risco.

DESCRIPTORES: Hospitalização; Tempo de Internação; Transplante Renal; Readmissão Hospitalar.

ABSTRACT

Objective: to evaluate the causes of readmissions of patients undergoing kidney transplantation in a hospital in Fortaleza, in the organizational context of work. Method: Study with a cross-sectional and retrospective design. A total of 249 patients who underwent kidney transplantation with a deceased donor participated in the period from January 2019 to December 2021. Results: The patients are, on average, 35 years old, male, brown and from the interior of the state. There was a prevalence of age (40 and 59 years) and gender (male) in relation to hospital readmission. Schooling showed a significant result. Diabetes mellitus and systemic arterial hypertension were presented as a risk factor for the occurrence of hospital readmission after kidney transplantation. Conclusion: Sociodemographic factors have no direct relationship with the incidence of hospital readmissions, with diabetes and systemic arterial hypertension as the underlying disease presenting itself as the greatest risk factor.

DESCRIPTORS: Hospitalization; Hospitalization Time; Kidney Transplant; Hospital Readmission.

RESUMEN

Objetivo: evaluar las causas de los ingresos de pacientes sometidos a trasplante renal en un hospital de Fortaleza, en el contexto organizacional de trabajo. Método: Estudio con diseño transversal y retrospectivo. Participaron un total de 249 pacientes que se sometieron a trasplante renal con donante fallecido en el período de enero de 2019 a diciembre de 2021. Resultados: Los pacientes tienen, en promedio, 35 años, sexo masculino, moreno y del interior del estado. Predominó la edad (40 y 59 años) y el sexo (masculino) en relación con el ingreso hospitalario. La escolaridad mostró un resultado significativo. La diabetes mellitus y la hipertensión arterial sistémica se presentaron como un factor de riesgo para la ocurrencia de ingreso hospitalario después del trasplante renal. Conclusión: Los factores sociodemográficos no tienen relación directa con la incidencia de ingresos hospitalarios, presentándose como mayor factor de riesgo la diabetes y la hipertensión arterial sistémica como enfermedad de base.

DESCRIPTORES: Hospitalización; Tiempo de Hospitalización; Transplante de riñón; Readmisión Hospitalaria.

RECEBIDO EM: 16/09/2022 APROVADO EM: 12/10/2022

Nayane Almeida de Sousa

Nurse, Specialist in Organ and Tissue Transplantation by the Multiprofessional Residency Program at the Hospital Geral de Fortaleza – HGF, Fortaleza, Ceará.

ORCID: 000-0002-2985-921X

Antonia Rozângela Souza de Oliveira

Nurse, Specialist in Organ and Tissue Transplantation by the Multiprofessional Residency Program at the Hospital Geral de Fortaleza – HGF, Fortaleza, Ceará.

ORCID: 0000-0002-8803-6213

Rita Mônica Borges Studart

Studart - Nurse Doctor in Nursing by the UFC. Adjunct professor at the University of Fortaleza
ORCID: 0000-0002-5862-5244

Aglauvanir Soares Barbosa

Nurse, Master from the University of International Integration of Afro-Brazilian Lusophony. Doctoral student in Collective Health at the State University of Ceará (UECE).
ORCID: 0000-0003-4909-563X

Alan Rodrigues da Silva

Pharmacist, Master and Specialist in Organ and Tissue Transplantation – UECE, Hospital Geral de Fortaleza – HGF, Fortaleza, Ceará. Doctoral student at the Federal University of Ceará.
ORCID: 0000-0002-9633-363X

Aumerinda Evangelista de Andrade

Nurse. Multiprofessional Residency in Organ and Tissue Transplantation - Hospital Geral de Fortaleza. Postgraduate student in Urgency and Emergency - JF Educational Services in Health.
ORCID: 0000-0003-1464-5558

Ana Thaís Alves Lima

Nutritionist graduated from the Centro Universitário Estácio do Ceará.
ORCID: 0000-0002-2939-9962

Karine Vieira Queiroz

Physiotherapist graduated from the Higher Education Institution Centro Universitário Estácio do Ceará
ORCID: 0000-0003-2881-0809

INTRODUÇÃO

In recent years, a considerable increase in people with chronic kidney disease (CKD) has been observed in Brazil and in the world, due to the aging of the population and the epidemic of type 2 diabetes mellitus and obesity. ⁽¹⁾ In July 2017, the Brazilian Society of Nephrology (SBN) registered 852 nephrology outpatient treatment centers, of which 758 had active dialysis programs. ⁽²⁾

CKD implies dietary restrictions, polypharmacy and dependence on specialized follow-up, either on an outpatient basis in its early stages, or on renal replacement therapy that includes dialysis and kidney transplantation. ^(1,2) Transplantation is considered the treatment of choice for significantly improving quality of life and reducing mortality. ⁽³⁾

However, despite the improvement in quality of life, kidney transplantation is a procedure that involves clinical and surgical risks due to the complexity of the procedure, which implies the success of the graft. ⁽⁴⁾ Renal graft survival depends on

several variables, which reflect the quality of the organ and subsequent insults, which may be immune, infectious or related to the surgical technique. ⁽⁵⁾

It is noteworthy that these are patients who require special care, thus, the nurse has an active role in all stages of the transplant process. ⁽⁶⁾ Therefore, knowing the profile of patients who have been readmitted after kidney transplantation is a fundamental factor for health professionals to improve their work process, identifying clinical factors that may evidence the possibility of complications. ⁽⁶⁾

It should be noted that the early monitoring of the patient allows the identification of health weaknesses in the hospital and outpatient setting, enabling the implementation of corrective interventions. ⁽⁷⁾ Early hospital readmission, defined as all readmissions within 30 days of initial hospital discharge, is a measure of quality of care. It is influenced by the demographic characteristics of the population at risk, the multidisciplinary approach to hospital discharge, the access, coverage and scope of the health system, and reim-

bursement policies. ⁽⁷⁾

The main causes of readmission are opportunistic infections, clinical and surgical complications. Strategies to reduce them are therefore essential and must consider local factors, including socio-economic, epidemiological conditions and endemic diseases. ^(7,8)

Measures to reduce readmission should also consider multiprofessional interventions, considering local demography, discharge protocols, coverage and reimbursement of health care for the local clinical and epidemiological situation. ⁽⁹⁾ Effective actions will certainly reduce morbidity, mortality and costs, increasing the quality of life of kidney transplant recipients. ⁽⁶⁾

Unplanned readmissions are associated with unexpected events and are therefore used for research purposes and can theoretically be preventable. Quality of care during the initial hospitalization, planning, adequate follow-up after discharge, and coordination between the hospital and the clinic are all associated with readmissions. ⁽⁶⁻⁸⁾

Given the above, the interest arose in finding out which complications appear most frequently, whether they can be avoided, and how these patients evolve during these readmissions. The research carried out has social relevance, since the identification of the various causes that lead these patients to readmission in the first year after transplantation will show avenues for investigations and goals to be traced with the competent bodies and multidisciplinary team to reduce them.

The relevance of this study is also highlighted, considering that the results can be used as a subsidy for the creation of an instrument that identifies early signs and symptoms of complications so that it is possible to reduce the number of readmissions, thus exposing patients to lower risks from the hospital environment and, consequently, more beds will be released, relieving the system and reducing costs for the institution.

In this context, this study aims to evaluate the readmissions of patients undergoing kidney transplantation in the organizational context of work.

METHODS

This is a descriptive, documentary and retrospective study, with a quantitative approach. The main objective of the descriptive study is to describe the characteristics of a given population through the use of standardized data collection techniques.⁽¹⁰⁾ Documentary research is restricted to written documents, constituting what are called primary sources.⁽¹¹⁾

Descriptive studies in the area of Health make it possible to analyze, evaluate and determine the distribution of diseases according to certain conditions from a place and in a certain time scale, parameters that characterize certain groups of individuals may be added, allowing for a better characterization and specification of the population studied.⁽¹¹⁾

The research was carried out in medical records of patients undergoing kidney transplantation in a hospital in Fortaleza, a reference center throughout the State of

Ceará for kidney, pancreas, liver and cornea transplants. This Health institution works in tertiary care of the state public network. This unit specializes in kidney, liver and pancreatic transplantation and has an interdisciplinary team. It serves adults, children and adolescents in Brazil. More than 3000 transplants have been performed so far.

The research was carried out in medical records of patients undergoing kidney transplantation in a hospital in Fortaleza, a reference center throughout the State of Ceará for kidney, pancreas, liver and cornea transplants. This Health institution works in tertiary care of the state public network. This unit specializes in kidney, liver and pancreatic transplantation and has an interdisciplinary team. It serves adults, children and adolescents in Brazil. More than 3000 transplants have been performed so far.

Data collection was carried out from January 2021 to December 2021, through the forms used and filed in the medical records used by the Renal Transplant Center of that hospital, through an instrument containing sociodemographic data, clinical and laboratory aspects, effectively contemplating the patients who were in full outpatient follow-up at that period.

Documentary sources were constituted by the files of patients who were being followed up at outpatient clinics, which gathered information about the tests performed and the conduct adopted by health professionals.

The results were consolidated in the Microsoft® Excel 2105 electronic spreadsheet, creating a database, whose analysis was presented in the form of tables. Data were exported to SPSS program version 23.0 for statistical analysis.

The results were presented using descriptive statistics, considering the frequency of data (%) and the probability of significance (p value) between the sociodemographic profile and the clinical profile of patients' readmissions.

Variables with a p-value < 10% were included in a multivariate forward stepwise binary logistic regression model. A p value of less than 5% (0.05) was considered statistically significant.

The research met the fundamental ethical and scientific requirements of Resolution 466/12 of the National Health Council - CNS (Conselho Nacional de Saúde) / Ministry of Health - MS (BRAZIL, 2012), once the study was forwarded to the Ethics and Research Committee to be appreciated and awaited the opinion for its development.

The project was approved under opinion number 5,070,891 and CAAE: 46569921.7.0000.5040.

RESULTS

In this step, the results will be presented according to the proposed objective. For the sample calculation, a confidence interval of 95%, sampling error of 5%, P (level of approval) and Q (level of failure) of 50%, sample calculation for a finite population with non-probabilistic sampling, since criteria established for convenience by the researcher were used in accordance with the objectives of the study.

Patients had a mean age of 35 years. There was a prevalence of males (151, 60.6%), married marital status (122, 49.0%), low education, predominantly elementary school (108, 43.4%). It is also noteworthy that 50.2% (125) were from the interior of the state. The results described are detailed in Table 1.

Related to the days of hospitalization, these ranged from three to 139 days, with a median of 11 days. The results showed that most patients were hospitalized for a normal period (137, 55.02%), that is, around ten days. It is noteworthy that a number of more than 15 days is considered to be a prolonged period of hospitalization. This data can be visualized in Figure 1.

The need for readmission of patients undergoing kidney transplantation at the hospital under study was associated with sociodemographic characteristics (Table 2), with 37.75% (94) having to be readmitted.

A significant result was verified in relation to education ($p = 0.012$), however, the result may have been stimulated by the majority of patients having elementary and high school education. The results showed that the age group between 40 and 59 years old was the one that most demanded readmission (46, 48.9%), the male gender was also prevalent in relation to readmission cases (57, 60.6%).

Underlying diseases were also associated with readmissions (Table 3), and no significant results were found during the correlation, with 19.1% (18) of readmissions having undetermined underlying disease. Diabetes Mellitus (22, 23.4%) and Systemic Arterial Hypertension (16, 17.0%) were found as prevalent underlying diseases among readmission cases.

DISCUSSION

The number of patients who receive kidney transplantation has steadily increased over the years, and it can be said that post-adverse events occur concomitantly, which often result in unplanned hospital readmissions, especially in the first year after transplantation. It is important to mention that this study considered the hospital readmissions that occurred in the hospital studied, with no control over the possibility of patients having been readmitted to other hospitals.

The results showed that the incidence of hospital readmissions after kidney transplantation is related to the age group between 40 and 59 years and to the male sex, a result also verified in the research by Fé⁽¹²⁾ which also showed a prevalence of males and a mean age of 50 years of patients in hospital readmission after kidney transplantation. Tavares et al.⁽¹³⁾ also found age over 40 years as a risk factor.

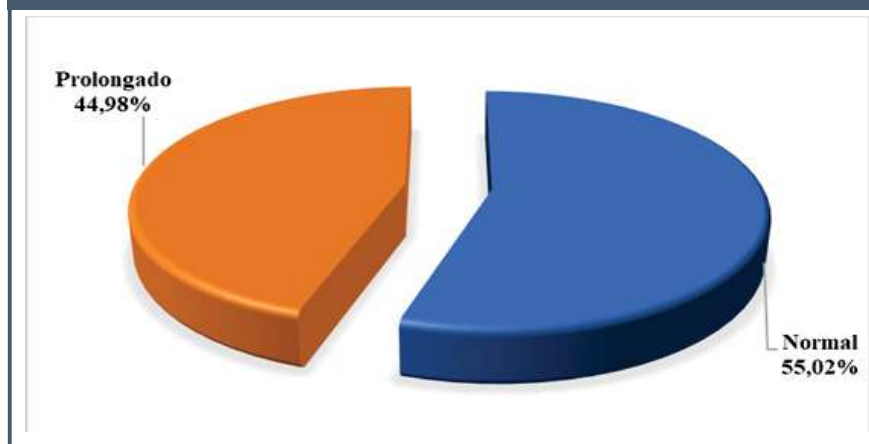
These results differed from the study performed by Nguyen et al.⁽¹⁴⁾, who verified in their research age over 50 years and female gender as risk factors for hospital readmission. Hogan et al.⁽¹⁵⁾ and Haugen et al.⁽¹⁶⁾ also pointed out that advanced age and female sex were independently associated with the first and subsequent

Table 1 – Sociodemographic characteristics of kidney transplant recipients. Fortaleza, CE - 2022 (n = 249)

Characteristics	n	%
Age group (in years)		
18 to 39	88	35,3
40 to 59	116	46,6
≥ 60	18,1	
Gender		
Male	151	60,6
Female	98	39,4
Education		
Illiterate	12	4,8
Elementary School	108	43,4
High School	102	41,0
Higher education	27	10,8
Marital Status		
Single	96	38,6
Married	122	49,0
Stable Union	19	7,6
Divorced	9	3,6
Widowed	3	1,2
Origin		
Fortaleza	94	37,8
Interior of the state	125	50,2
Another state	30	12,0

Source: Prepared by the author.

Figura 1 – Hospitalization profile of patients undergoing kidney transplantation. Fortaleza - CE



Source: Prepared by the author.

post-transplant readmission. These differences in results may point to differences in the profile of readmission after kidney transplantation among Brazilians and in the international community.

As verified in this study, Fé⁽¹²⁾ and Dols et al.⁽¹⁷⁾ showed an association between hospital readmission rates of post-kidney transplant patients and low education levels. This association may be related to knowledge about the problem experienced and adherence to appropriate treatment, which tends to be lower in this population. As for marital status, Tavares et al.⁽¹³⁾, in their systematic review, they did not find any association with the incidence of hospital readmission.

Patients from the interior of the state were also mentioned in the research by Fé⁽¹²⁾ as the majority among the patients analyzed, differing between the Metropolitan Region (42.0%) and the countryside (35.7%). According to the author, this fact can be explained by the distance from the cities in the interior of the State to the transplant center, which makes it difficult to travel for patient treatment.

Tavares et al.⁽¹³⁾ highlighted that the local characteristics of patients and the health system are the main predictors of hospital readmission, making it important to pay attention to them. However, there has been a scarcity of research on the subject in the last five years, still requiring bases for me to be able to consider them as indicators of care for the health team, with a view to seeking strategies to reduce cases of hospital readmission.

In addition to the risk factors already mentioned in relation to older age, female gender and low education of patients, Naylor et al.⁽¹⁸⁾ found that longer initial hospitalization is also a predictor of cases of hospital readmission after kidney transplantation. About the subject, Tavares et al.⁽¹³⁾ found that the length of stay in the first hospitalization of more than five days is a risk factor for hospital readmission.

Based on this, it is possible to say that 44.98% of the patients analyzed in this study were more likely to be readmitted. However, Pestana⁽¹⁹⁾ states that if the ini-

Table 2 - Readmissions according to sociodemographic characteristics. Fortaleza - CE (n = 249)

Variables	Re-hospitalization n (94)	Not Re-hospitalized n (155)	p Value
Age Group			0,187 ¹
18 to 39 years	25 (26,6%)	38 (24,5%)	
40 to 59 years	46 (48,9%)	85 (54,8%)	
≥60 years	23 (24,5%)	32 (20,6%)	
Gender			0,055 ²
Male	57 (60,6%)	93 (60,0%)	
Female	37 (39,4%)	62 (40,0%)	
Education			0,012 ²
Illiterate	4 (4,2%)	8 (5,1%)	
Elementary School	48 (51,1%)	71 (45,8%)	
High School	37 (39,4%)	67 (43,2%)	
Higher education	5 (5,3%)	9 (5,8%)	

¹ chi-square test; ² Fisher's exact test
Source: Prepared by the author.

Table 3 - Readmissions according to underlying diseases

Variables	Re-hospitalized n (94)	Not Re-hospitalized (155)	p Value
Undetermined	18 (19,1%)	36 (23,2%)	0,697 ¹
Alport	4 (4,3%)	5 (3,2%)	0,557 ²
Urinary tract infection	7 (7,4%)	9 (5,8%)	1,000 ²
Focal Segmental Glomerulosclerosis	2 (2,1%)	8 (5,1%)	1,000 ²
Chronic Glomerulonephritis	9 (9,6%)	13 (8,4%)	1,000 ²
Systemic lupus erythematosus	2 (2,1%)	6 (3,9%)	1,000 ²
Nephrolithiasis	6 (6,4%)	7 (4,5%)	1,000 ²
Polycystic	5 (5,3%)	10 (6,5%)	0,534 ²
Diabete Mellitus	22 (23,4%)	21 (13,5%)	0,665 ¹
Systemic Arterial Hypertension	16 (17,0%)	25 (16,1%)	0,490 ¹
Others	3 (3,2%)	15 (9,7%)	1,000 ²

¹ chi-square test; ² Fisher's exact test
Source: Prepared by the author.

tial hospitalization is well managed, the results can be more beneficial, since it provides sufficient time for diagnosis and treatment of various complications that

may arise associated with the transplant, which would reduce the risk of readmission.

In relation to the underlying disease,

Diabetes Mellitus (DM) and Systemic Arterial Hypertension (SAH) was also evidenced in the studies by Dols et al.⁽¹⁷⁾, Haugen et al.⁽¹⁶⁾ and Hogan et al.⁽¹⁵⁾ as directly related to hospital readmission rates in post-kidney transplant patients. Schucht et al.⁽²⁰⁾ and Leal et al.⁽²¹⁾ showed that patients with diabetes are at greater risk of hospital readmission.

In view of the above, it appears that the results verified in this study, for the most part, corroborate the evidence found by other authors, which demonstrates that they can be considered in clinical practice so that it is possible to act early with more prone transplant patients, with a view to mitigating cases of readmission.

CONCLUSION

The results verified in this study showed that the patients had a mean age of 35 years, male, brown and from the interior of the state. As the underlying disease, a large part was of unknown etiology (42.3%), and 19.1% of these underwent readmission, most had comorbidities such as diabetes and arterial hypertension. It was concluded that sociodemographic factors have no direct relationship with the incidence of hospital readmissions, with DM and SAH as the underlying disease presenting itself as the greatest risk factor.

It should be noted that the present study brings contributions to the knowledge

of the clinical profile of these patients and their association with hospital readmission, believing that they can be used as indicators of care in hospital practice with these patients.

As limitations of this study, we mention the lack of control over the possibility of patients having been readmitted in other hospitals, only considering as readmission in the case of records in the hospital under study. The gap in not having studied the motivation for hospital readmission of these patients is also mentioned, suggesting that future research should consider the immediate motivation for hospital readmission so that a more direct contribution to this practice is possible.

REFERÊNCIAS

1. Silva Junior GB, Bentes AC, Daher ED, Matos SM. Obesity and kidney disease. *Brazilian Journal of Nephrology*. 2017 Mar;39(1):65-9.
2. Thomé FS, Sesso RC, Lopes AA, Lugon JR, Martins CT. Brazilian chronic dialysis survey 2017. *Brazilian Journal of Nephrology*. 2019 Mar 28;41:208-14.
3. da Silva AR, de Almeida Barbosa FM, da Costa PQ, Rocha CM, Branco KM, da Silva Junior GB, Studart RM. Percepção dos pacientes transplantados renais sobre a farmacoterapia imunossupressora: perspectivas e dificuldades. *Revista Eletrônica Acervo Saúde*. 2020 Jul 23(53):e3768-.
4. Ecker R, Beltrame V, Dallacosta FM. Mortalidade pós-transplante renal. *Revista Interdisciplinar de Estudos em Saúde*. 2019 Dec 2:253-60.
5. Pape L, de Zwaan M, Tegtbur U, Feldhaus F, Wolff JK, Schiffer L, Lerch C, Hellrung N, Kliem V, Lonnemann G, Nolting HD. The KTx360-study: a multi-center, multisectoral, multimodal, telemedicine-based follow-up care model to improve care and reduce health-care costs after kidney transplantation in children and adults. *BMC health services research*. 2017 Dec;17(1):1-7.
6. Rocha CC, da Lima Neto AV, da Silva AB, Farias VA, Junior AD, da Silva RA. Cuidados de enfermagem ao paciente transplantado renal: scoping review. *Aquichan*. 2021 Sep 30;21(3):e2136-.
7. Li, Bernadette, et al. Predicting patient survival after deceased donor kidney transplantation using flexible parametric modelling. *BMC nephrology*, 2016, 17.1: 1-11.
8. Plantinga LC, King L, Patzer RE, Lea JP, Burkart JM, Hockenberry JM, Jaar BG. Early hospital readmission among hemodialysis patients in the United States is associated with subsequent mortality. *Kidney international*. 2017 Oct 1;92(4):934-41.
9. Oliveira FL. Complicações como causas de reinternações no primeiro ano pós-transplante kidney [dissertação]. Fortaleza: Universidade Federal do Ceará. 2018.
10. Hulley SB, Cummings SR, Browner WS, Grady DG, Newman TB. *Delineando a pesquisa clínica-4*. Artmed Editora; 2015.
11. Polit DF, Hungler BP. *Fundamentos de pesquisa em enfermagem. In: Fundamentos de pesquisa em enfermagem 1995* (pp. 391-391).
12. Fé AM. Readmissões hospitalares no primeiro ano pós transplante renal: estudo de coorte retrospectivo. Universidade Federal do Rio Grande do Sil. Porto Alegre.
13. Tavares MG, Tedesco-Silva Junior H, Pestana JO. Readmissão Hospitalar Precoce no transplante renal: artigo de revisão. *Brazilian Journal of Nephrology*. 2020 Mar 20;42:231-7.
14. Nguyen MC, Avila CL, Brock GN, Benedict JA, James I, El Hinnawi A, Rajab A, Elkhammas E, Pelletier RP, Henry M, Bumgardner GL. "Early" and "Late" Hospital readmissions in the first year after kidney transplant at a single center. *Clinical Transplantation*. 2020 Mar;34(3):e13822.
15. Hogan J, Arenson MD, Adhikary SM, Li K, Zhang X, Zhang R, Valdez JN, Lynch RJ, Sun J, Adams AB, Patzer RE. Assessing predictors of early and late hospital readmission after kidney transplantation. *Transplantation direct*. 2019 Aug;5(8).
16. Haugen CE, King EA, Bae S, Bowring MG, Holscher CM, Garonzik-Wang J, McAdams-DeMarco M, Segev DL. Early hospital readmission in older and younger kidney transplant recipients. *American journal of nephrology*. 2018;48(4):235-41.
17. Dols JD, Chargualaf KA, Spence AI, Flagmeier M, Morrison ML, Timmons A. Impact of population differences: Post-kidney transplant readmissions. *Nephrology Nursing Journal*. 2018 May 1;45(3):273-81.
18. Naylor KL, Knoll GA, Slater J, McArthur E, Garg AX, Lam NN, Le B, Li AH, McCallum MK, Vinegar M, Kim SJ. Risk Factors and Outcomes of Early Hospital Readmission in Canadian Kidney Transplant Recipients: A Population-Based Multi-Center Cohort Study. *Canadian journal of kidney health and disease*. 2021 Nov;8:20543581211060926.
19. Pestana JM. A pioneering healthcare model applying large-scale production concepts: Principles and performance after more than 11,000 transplants at Hospital do Rim. *Revista da Associação Médica Brasileira*. 2016 Oct;62(7):664-71.
20. Schucht J, Davis EG, Jones CM, Cannon RM. Incidence of and Risk Factors for Multiple Readmissions after Kidney Transplantation. *The American Surgeon*. 2020 Feb;86(2):116-20.
21. Leal R, Pinto H, Galvão A, Rodrigues L, Santos L, Romãozinho C, Macário F, Alves R, Campos M, Mota A, Figueiredo A. Early rehospitalization post-kidney transplant due to infectious complications: Can we predict the patients at risk?. *In: Transplantation proceedings 2017 May 1* (Vol. 49, No. 4, pp. 783-786). Elsevier.