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## ORIGINAL ARTICLE

### DEMOGRAPHIC AND CLINICAL FACTORS ASSOCIATED WITH HEALTH-RELATED QUALITY OF LIFE OF KIDNEY-TRANSPLANTED PATIENTS

#### FATORES SOCIODEMOGRÁFICOS E CLÍNICOS ASSOCIADOS À QUALIDADE DE VIDA RELACIONADA À SAÚDE DOS PACIENTES TRANSPLANTADOS RENAI

#### FACTORES DEMOGRÁFICOS Y CLÍNICOS ASOCIADOS A LA CALIDAD DE VIDA RELACIONADA CON LA SALUD DE LOS PACIENTES TRASPLANTADOS RENALES

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#### ABSTRACT

**Objective:** to identify the demographic and clinical factors of patients with chronic kidney disease (CKD) who underwent kidney transplantation, and correlate them to the quality of life. **Method:** descriptive, cross-sectional study conducted with 49 kidney-transplanted patients attending outpatient follow-up appointments. The data were collected by means of interviews and the questionnaire WHOQOL-BREF, and analyzed using the Epi Info™ 7 software. The research project was approved by the Research Ethics Committee, CAAE No. 252214. **Results:** 77.55% of the patients were men with an average age of 46.5±14.3 years, 95.92% were literate, and 63.26% lived with a partner. The main reasons of CKD were: arterial hypertension (28.57%); and nephritis (20.41%). Regarding quality of life, the most affected domains were the physical and the environment. **Conclusion:** the demographic profile was characterized by men, of productive age, white, literates, and with partners. The most affected domains of quality of life were the physical and the environment. **Descriptors:** Kidney Transplantation; Quality of Life; Nursing.

#### RESUMO

**Objetivo:** identificar os fatores sociodemográficos e clínicos dos pacientes com doença renal crônica (DRC) que realizaram transplante renal e correlacioná-los à qualidade de vida. **Método:** estudo descritivo e transversal realizado com 49 pacientes transplantados renais em acompanhamento ambulatorial. A coleta de dados foi realizada por meio de entrevista e o questionário WHOQOL-BREF e analisados pelo programa Epi Info™ 7. O projeto de pesquisa foi aprovado pelo Comitê de Ética em Pesquisa, CAAE nº 252214. **Resultados:** 77,55% dos pacientes eram homens, com idade média de 46,5±14,3 anos, 95,92% eram alfabetizados e 63,26% moravam com companheiros. Os principais motivos da DRC foram: hipertensão arterial (28,57%); e nefrite (20,41%). Na qualidade de vida, os domínios mais afetados foram o físico e o ambiental. **Conclusão:** o perfil sociodemográfico caracterizou-se por homens, em idade produtiva, brancos, alfabetizados e com companheiros. Os domínios da qualidade de vida mais afetados foram o físico e o ambiental. **Descritores:** Transplante Renal; Qualidade de Vida; Enfermagem.

#### RESUMEN

**Objetivo:** identificar los factores demográficos y clínicos de los pacientes con enfermedad renal crónica (ERC) que realizaron trasplante renal y correlacionarlos con la calidad de vida. **Método:** estudio descriptivo y transversal realizado con 49 recipientes trasplantados renales en seguimiento ambulatorio. Los datos fueron recogidos mediante entrevistas y con el cuestionario WHOQOL-BREF y analizados usando el software Epi Info™ 7. El proyecto de investigación fue aprobado por el Comité de Ética en Investigación, CAAE N° 252214. **Resultados:** el 77,55% de los pacientes eran hombres; con edad promedio de 46,5±14,3 años, el 95.92% era alfabetizado y el 63,26% vivía con compañero. Las principales razones de la ERC fueron: hipertensión arterial (28,57%); y nefritis (20,41%). Con respecto a la calidad de vida, los dominios más afectados fueron el físico y el ambiente. **Conclusión:** el perfil demográfico estaba constituido por hombres, en edad productiva, blancos, alfabetizados y con compañeros. Los dominios de la calidad de vida más afectados fueron el físico y el ambiente. **Descriptores:** Trasplante Renal; Calidad de Vida; Enfermería.

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## INTRODUCTION

Chronic kidney disease (CKD) is a progressive and irreversible loss of kidney function. It causes future physical, social, and psychological limitations to patients. Due to its high incidence and prevalence in the population, the CKD is an important public health problem.<sup>1</sup> A total of 92,091 dialysis patients were recorded, of which 90.6% were undergoing hemodialysis and 9.4% peritoneal dialysis. Regarding the profile of the patients, 30.7% were aged  $\geq 65$  years and 28% were diabetics. The annual gross mortality rate was 17.9%.<sup>2</sup>

Although CKD is still an incurable disease, there are several methods for dialysis treatment and kidney transplantation, and the latter can be performed using a living or deceased donor's kidney. This new kidney survival will depend on the immunosuppressive therapy that the transplant recipient has to undergo during the entire time in which the transplanted kidney is functioning.<sup>3</sup>

So that patients can undergo the surgery, they need to go through several visits, examinations, and evaluations. Still, they must face concerns such as the possibility of finding a compatible donor, the difficulties in preparing for the surgery, and the challenges that will arise after transplantation, such as the possibility of rejection of the graft and the importance of adherence to the immunosuppressive therapy.<sup>4</sup>

The World Health Organization (WHO) defines quality of life as "individual's perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns". These aspects involve physical, psychological, religious or spiritual conditions, wellness, functional capacity, social interactions, and economic factors.<sup>5</sup>

The assessment of quality of life is the understanding of the state of health as a range of factors that can only be evaluated by the individuals.<sup>6</sup> The disease and the renal replacement therapy influence the quality of life in patients with CKD. It is possible to establish clinical, demographic, and laboratory factors that contribute to the reduction of quality of life. If these factors are not identified at the beginning of the treatment, they may contribute to the progression of the disease.<sup>7</sup>

Although studies on the quality of life of patients with CKD are very frequent, few of them have addressed the quality of life of

kidney-transplanted patients.<sup>8-9</sup> After hospital discharge, even with a functioning graft and a successful transplantation, the patients continue to live with a chronic disease. Frequent outpatient visits are required and they can generate stress, especially during the first year after transplantation, when the visits are more frequent. When the intense routine of outpatient visits decreases, the return to a normal lifestyle causes new concerns, such as the return to the professional life and other responsibilities.<sup>8</sup>

The most present human responses in kidney-transplanted patients are: body-image change; concern about physical health; fear of rejection; and medication regimen adherence. This way, nurses perform actions in order to assess and judge current or potential health problems based on these events.<sup>10-1</sup>

After receiving a renal graft, the patients always run the risk of rejection. Therefore, to be able to live with the possibility of rejection, it is necessary that the patients receive appropriate information about the new way of life they have to assume, now without undergoing dialysis sessions, but with a dependency on the daily use of immunosuppressants.<sup>12</sup>

Kidney-transplanted patients should be followed up carefully, providing guidance on medications, diets, physical activities, and prevention of infections, because the successful development of the transplantation is confronted with complications, graft survival, and quality of life. This way, the goal of the present study was to identify the sociodemographic profile and assess the quality of life of patients undergoing treatment for kidney transplantation cared for at the post-transplantation service of Sao Jose do Rio Preto, State of São Paulo, Brazil.

## METHOD

This is a descriptive, cross-sectional study with quantitative approach<sup>13</sup> conducted with 49 kidney-transplanted patients being followed up at the Outpatient Clinic of São José do Rio Preto Medical School (FAMERP) from August to December 2013.

Inclusion criteria were: 18 years of age or older; being followed up in post-transplantation outpatient visits during data collection; accepting to participate in the study by signing an informed consent form; providing medical diagnosis of kidney transplantation for three months or more; and exhibiting cognitive ability to interpret and answer the questionnaires.

Data collection was carried out with the patients during the post-transplantation visits. A semistructured interview was elaborated to characterize the patients from a demographic, economic, and clinical perspective regarding the CKD and treatments. The content of the interview was submitted for evaluation and validation by three healthcare workers specialized in nephrology.

The generic instrument of the WHO known as WHOQOL-BREF was used to assess the quality of life. This questionnaire is composed of 26 questions distributed into four domains: social relationships; psychological; physical; and environment. The answers were obtained by using a Likert-type scale, in which the score varies between one and five, plus two questions about general life quality, calculated together to generate a single score, regardless of the domain scores, named overall or general quality of life.

For the calculation of domain scores, the indexes of the aspects summarize the domain to which they belong. The domains and the general quality of life are measured in positive direction, i.e., higher scores denote better quality of life.

It is worth mentioning that the WHOQOL-BREF does not allow establishing a single total score. The two instruments were developed from the premise that the quality of life is a multidimensional construct. Therefore, there is greater coherence considering each domain and their respective score individually.

For the analysis, a data sheet was drawn using the Excel software (Windows - Microsoft®) and the data were recorded two

times in order to validate and check them and obtain typo-free data. Subsequently, the data were transferred to the Epi Info™ 7 statistical software to perform the descriptive statistical analysis. The results of the correlation between the variables of the study were described using correlation tests (Pearson's test for continuous variables and Spearman's test for categorical variables).

In accordance with the Resolutions 196/96 and 251/97 of the National Health Council, the research project was approved by the Research Ethics Committee of São José do Rio Preto Medical School - SP (FAMERP) under CAAE No. 252214. The patients signed an informed consent form containing relevant information relating to the study, in addition to being informed that the participation would be of their own free will and accord, ensuring the anonymity of the respondents.

RESULTS

Of the 49 patients who participated in the research, 38 (77.55%) were men, with an average age of 46.5±14.3 years. The predominant age group was between 41 and 59 years with 29 (59.17%) patient, 30 (61.22%) patients were white, 45 (95.92%) knew how to read and write, and 31 (63.26%) had a partner (Table 1).

**Table 1.** Sociodemographic characteristics of kidney-transplanted patients in a center of the State of São Paulo, São José do Rio Preto, SP, 2013.

| Sociodemographic variables     | No. | %      |
|--------------------------------|-----|--------|
| <b>Sex</b>                     |     |        |
| Male                           | 38  | 77.55% |
| Female                         | 11  | 22.45% |
| <b>Age</b>                     |     |        |
| 18 to 21 years                 | 05  | 10.20% |
| 22 to 40 years                 | 08  | 16.33% |
| 41 to 59 years                 | 29  | 59.17% |
| Over 60 years                  | 07  | 14.30% |
| <b>Race</b>                    |     |        |
| White                          | 30  | 61.22% |
| Non-white                      | 18  | 38.78% |
| <b>Marital status</b>          |     |        |
| Never got married              | 12  | 24.49% |
| Lives with a partner           | 31  | 63.26% |
| Separated/Divorced             | 05  | 10.20% |
| Widow                          | 01  | 2.04%  |
| <b>Education</b>               |     |        |
| Illiterate                     | 02  | 4.08%  |
| Elementary school (incomplete) | 13  | 26.53% |
| Elementary school              | 13  | 26.53% |

|                             |    |        |
|-----------------------------|----|--------|
| High school                 | 12 | 24.49% |
| Higher/Vocational education | 09 | 18.37% |
| Total                       | 49 | 100%   |

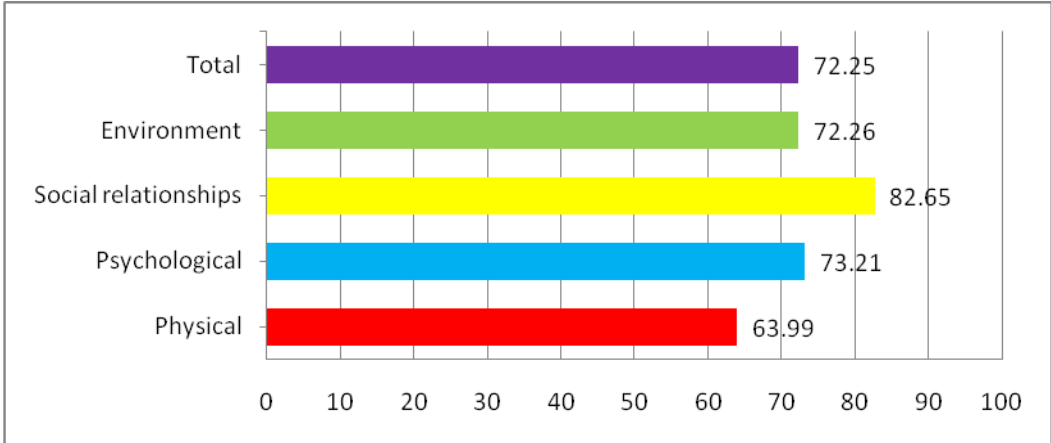
The most frequent comorbidities were: arterial hypertension (87.76%); visual deficit (51.02%); diabetes mellitus (34.69%); cataract (20.41%); heart failure (18.37%); hearing deficit (16.33%); osteopathies (14.29%); hepatopathies, acute myocardial infarction, and varicose veins (12.24%); autoimmune diseases (8.16%); and cerebrovascular diseases (2.04%). Other data such as pericarditis, malignant neoplasias, benign neoplasias, and other diseases were not found among the patients under study.

The causes of CKD found in the present study were: arterial hypertension (28.57%);

nephritis (20.41%); polycystic kidneys (16.33%); did not know (14.29%); diabetes mellitus (10.20%); and others (2.04%).

Regarding the type of kidney donors, it was found that most of them had been deceased donors (n = 36 - 73.47%) and 13 had been living donors (26.53%). The most frequent criteria were: 32 (65.31%) standard; 13 (26.53%) reported not knowing; and four (8.16%) extended criteria.

With respect to the analysis of the domains of the quality of life questionnaire WHOQOL-BREF, the averages of each domain are presented in the figure below (Figure 1).

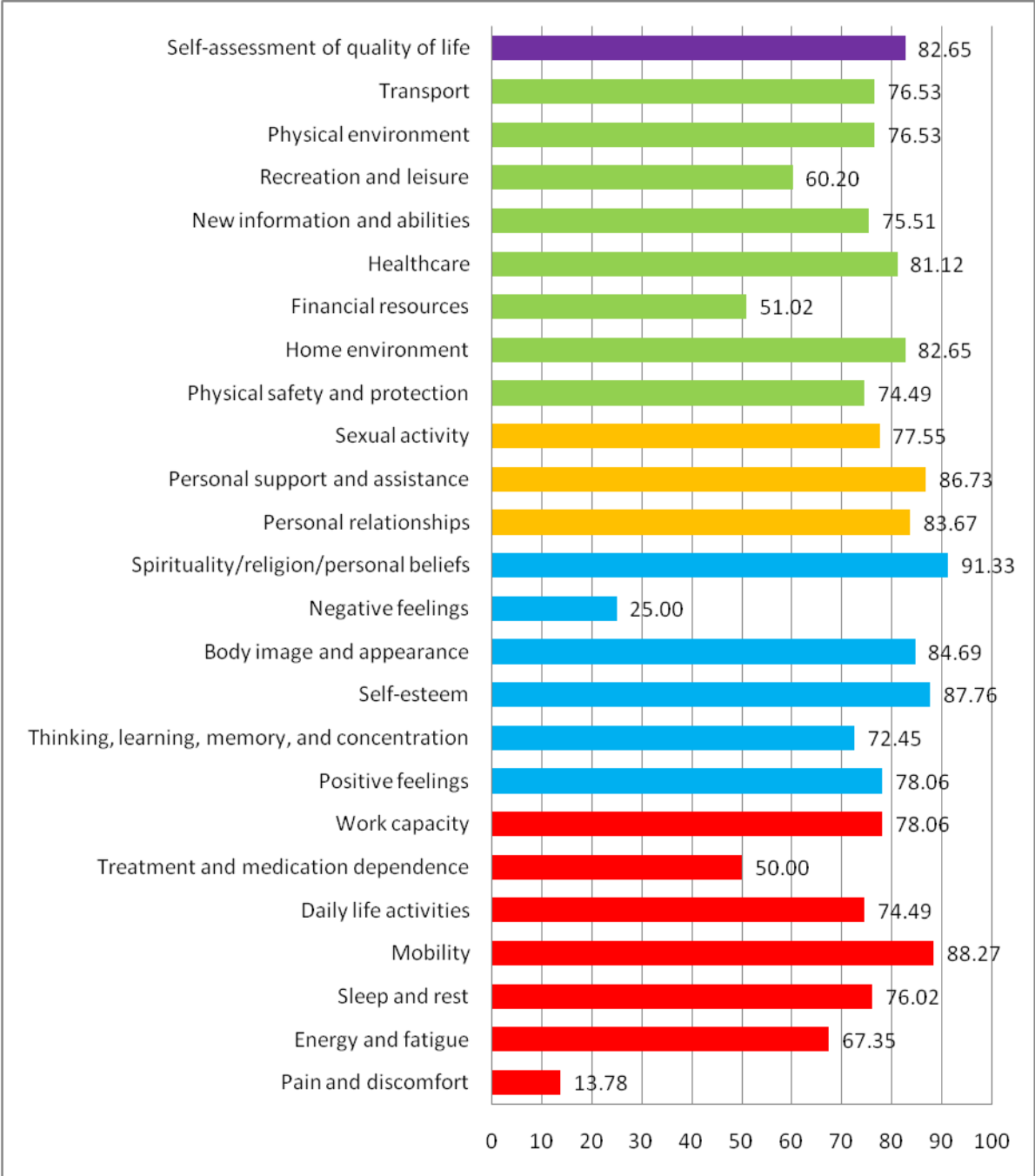


**Figure 1.** Average values of each domain related to the generic quality of life questionnaire WHOQOL-BREF.

According to the figure above, the domain of the quality of life that showed the lowest score—i.e., the most affected—was the physical, which includes questions about pain, energy, sleep, and mobility. The social relationships domain had the highest score.

From the results obtained in the quality of life domains of the WHOQOL-BREF, we sought to identify the most influential aspects on the scores of each domain of the instrument.

Medication or treatment dependence—which means the extent to which the patients need some medical treatment to perform the essential activities of their daily lives—had the lowest score, i.e., the most affected, followed by negative feelings, and pain and discomfort (Figure 2).



**Figure 2.** Average values of the aspects of each domain related to the generic quality of life questionnaire WHOQOL-BREF.

Table 2 shows the results of the assessment of patient satisfaction according to the physical domain of the quality of life questionnaire WHOQOL-BREF).

**Table 2.** Aspects of the physical domain of kidney-transplanted patients in a center of the State of São Paulo, São José do Rio Preto, SP, 2013.

| Question number                     | Aspects of the physical domain                                                                  | Value of the average score |
|-------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------|
| 03                                  | To what extent do you think your pain (physical) prevents you from doing what you need?         | 4.45                       |
| 04                                  | To what extent do you need some medical treatment to perform the activities of your daily life? | 3.00                       |
| 10                                  | Do you have enough energy for your daily routine?                                               | 3.69                       |
| 15                                  | How well are you able to move around?                                                           | 4.53                       |
| 16                                  | How satisfied are you with your sleep?                                                          | 4.04                       |
| 17                                  | How satisfied are you with your ability to perform your daily activities?                       | 3.98                       |
| 18                                  | How satisfied are you with your ability to work?                                                | 4.12                       |
| General average score of the domain |                                                                                                 | 14.24                      |

When the data relating to the time after kidney transplantation, time of diagnosis, sex, and age were cross-referenced against the aspects of the physical domain and compared using the chi-square test, the results could not be taken into consideration, because the results were greater than five. Only the cross-reference between sex and physical pain ( $[x^2\ 7.7]\ p = 0.0212$ ), and sex and enough energy ( $[x^2\ 10.2]\ p = 0.0062$ ) were validated by the chi-square test, showing results in which the male population had less physical pain (86.84%) and more enough energy (71.05%) than the female population.

## DISCUSSION

The sample of the present study consisted of 49 patients, with an average age of  $46.5 \pm 14.3$  years (41 to 59 years). Compared with other studies, the average age was greater, since a study that assessed 124 patients found an average of 40 years. Another study showed an average age of 37.9, between 23 and 55 years, and an interview with 100 patients showed an average age of 40 years.<sup>14-5</sup> There are worse results in quality of life with increasing age, mainly related to the greatest impacts of chronic diseases and physical aspects.<sup>16</sup>

With respect to the marital status of the respondents, the data are in line with those of other studies. We found that most of the patients—about 58%—stated that they were married or under common-law marriage.<sup>17</sup>

We found a great difference between the sexes of the participants, since most of them were men (77.55%). The same fact was observed in another study that also found a marked difference between the sexes, according to which 62.9% of the individuals were men.<sup>12</sup>

Public policies focused on men's health are growing and these policies worry less about women's health, who only search for help when they lose the ability to work.<sup>18</sup>

We found that the predominant race, according to the data collected, was white, with a superior result in comparison with the result of non-white participants. These results are in line with those found in other studies.<sup>19-20</sup>

The findings regarding education are not in accordance with those of other studies. Different from the Brazilian reality, which shows that the greatest portion of the population is illiterate, the greatest portion of the population assessed was literate.<sup>2</sup> Social determinants for these diseases are social inequalities, differences in access to goods and services, low educational level, income, and inequalities in access to information.<sup>5</sup>

According to the data related to comorbidities collected in the present study, the results are in line with the findings of the Brazilian Dialysis Census and other studies.<sup>2-20</sup>

Diabetes mellitus and arterial hypertension are non-communicable chronic diseases, with high prevalence and complications that today represent the largest number of diseases worldwide. They are responsible for the highest morbimortality rates of the Brazilian and world population, causing personal and family suffering, in addition to high financial

and social cost.<sup>21</sup> The number of individuals with diabetes mellitus and arterial hypertension in Brazil has contributed significantly to the development of CKD.<sup>22</sup>

The assessment of quality of life using the WHOQOL-BREF showed that the respondents exhibited greater difficulties performing activities and had physical problems. The average score of that domain (63.99) was the lowest with respect to the others. The patients should be able to resume their lives, acquiring new knowledge and skills, adapting themselves to conditions imposed by the therapy, gathering the necessary resources, and engaging in the recovery process.<sup>23</sup>

The assessment showed that the patients had reported satisfaction with their sleep pattern, which contradicts another study, because almost all diseases are characterized by stress, anxiety, and discomfort. Sleep disorders hamper daily activities, increasing the possibility of psychiatric disorders, cognitive deficits, and/or aggravation of health problems. This way, these disorders cause adverse consequences in individuals' daily life by affecting their quality of life.<sup>24</sup>

When the participants were inquired about physical pain, the vast majority reported that pain did not prevent them from performing their daily activities, because the pain of surgical incision is insignificant when compared with the discomfort suffered after hemodialysis sessions. According to the literature, pain is defined as a state in which the individual feels, exhibits, or reports the presence of a strong discomfort or an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.<sup>25</sup>

It was possible to observe that most of the patients were satisfied with the ability to carry out their daily activities, consistent with the results of question 10, which shows that a large part of the this population assessed had enough energy for their daily life, confirming their satisfaction with their ability to perform daily and work activities. For the individuals to feel accomplished, they have to be able to play their social and domestic roles, in order to overcome the challenges of the daily life without stress or physical handicap, thus becoming more independent.<sup>26</sup>

An important variable to determine the quality of life is the time after transplantation. The literature points out that the first six months after surgery are worrying. This is due to the increased risk of rejection during this period, in addition to the need of constant visits to the hospital to

adjust the medications and their side effects. However, studies indicate that the quality of life is usually highly evaluated by patients during this period.<sup>27</sup> A study found that the quality of life of kidney-transplanted patients is very close to the quality of life of the healthy population.<sup>28</sup>

## CONCLUSION

The demographic profile of the population assessed was characterized by male individuals, in productive age, white, literate, and living with a partner. It was observed that the most frequent comorbidities found were arterial hypertension, visual deficit, and diabetes mellitus. The most common causes of CKD were arterial hypertension, nephritis, and polycystic kidneys. The most frequent type of kidney donors were the deceased, and the criterion with the highest concentration was the standard.

The most impaired quality of life domains related to kidney-transplanted recipients were the physical and environment. It is important to remember that even without having to undergo dialysis, the patients still live with a chronic disease, with continuous medication and follow-up visits.

The results of this study provide elements for the adaptation to the care, education, and assistance program targeted at improving the healthcare provided to this population.

## REFERENCES

1. Mascarenhas CHM, Reis LA, Lyra JE, Peixoto AV, Teles MS. Insuficiência renal crônica: caracterização sociodemográfica e de saúde de pacientes em tratamento hemodialítico no município de Jequié/BA. Espaço saúde [Internet]. 2010 [cited 2015 Jan 13];12(1):30-7. Available from: <http://www.uel.br/revistas/uel/index.php/espacoparasaude/article/view/9234/pdf>
2. Sesso RC, Lopes AA, Thomé FS, Lugon JR, Santos DR. Relatório do censo brasileiro de diálise de 2010. J Bras Nefrol [Internet]. 2011 [cited 2013 Jul 02];33(4):442-7. Available from: <http://www.scielo.br/pdf/jbn/v33n4/09.pdf>
3. Smeltzer SC, Bare, BG. Brunner&Suddarth: tratado de enfermagem médico-cirúrgico. 11 ed. Rio de Janeiro: Guanabara Koogan, 2008; p. 1100-8.
4. Navarret SS, Slomka L. Aspectos emocionais e psicossociais em pacientes renais pós-transplantados. Diaphora [Internet]. 2014 [cited 2015 Jan 13];14(1):58-65. Available from:

<http://www.sprgs.org.br/diaphora/ojs/index.php/diaphora/article/view/37/37>

5. Spilker B. Quality of life and pharmacoeconomics in clinical trials. 2<sup>a</sup> ed. Philadelphia: Lippincott Williams & Wilkins; 1996.
6. Ogden J. Psicologia da saúde. 2nd ed. Lisboa: Climepsi Editores; 2004.
7. Cruz MC, Andrade C, Urrutia M, Draibe S, Nogueira-Martins LA, Sesso RCC. Quality of life in patients with chronic kidney disease. Clinics [Internet]. 2011 Jun [cited 2015 Jan 15];66(6):991-5. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3130152/>
8. Fallon M, Gould D, Wainwright SP. Stress and quality of life in the renal transplant patient: a preliminary investigation. J Adv Nurs [Internet]. 1997 [cited 2013 Aug 12];25(3):562-70. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/9080284>
9. Ostrowski M, Wesolowski T, Makar D, Bohatyrewicz R. Changes in patients quality of life after renal transplantation. Transplantation [Internet]. 2000 [cited 2013 Aug 15];32(6):1371-4. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/15866689>
10. Fisher R, Gould D, Wainwright S, Fallon M. Quality of life after renal transplantation. J Clin Nurs [Internet]. 1998 [cited 2013 Aug 20];7(6):533-63. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/10222951>
11. Schneider RA. Chronic renal failure: assessing the fatigue severity scale for use among caregivers. J Clin Nurs [Internet]. 2004 [cited 2013 Sept 01];13(2):219-25. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/14723674>
12. Mendes CA, Shiratori K. As percepções dos pacientes de transplante renal. Nursing. 2002;5(44):15-22.
13. Polit DF, Beck CT, Hungler BP. Fundamentos de pesquisa em enfermagem. In: Polit DF, Beck CT, Hungler BP. Fundamentos de pesquisa em enfermagem: métodos, avaliação e utilização. Porto Alegre: Artmed; 2004. p. 164-98.
14. Lôbo MCSG, Bello VAO. Reabilitação profissional pós transplante renal. J Bras Nefrol [Internet]. 2007 [cited 2013 Sept 20];29(1):29-32. Available from: [http://www.jbn.org.br/detalhe\\_artigo.asp?id=194](http://www.jbn.org.br/detalhe_artigo.asp?id=194)
15. Bittencourt ZZLC, Alves Filho G, Mazzali M, Santos NR. Qualidade de vida em

transplantados renais: importância do enxerto funcionante. Rev Saúde Pública [Internet]. 2004 [cited 2013 Sept 25];38(5):732-4. Available from:

<http://www.scielo.br/pdf/rsp/v38n5/21764.pdf>

16. Gómez P. Qualidade de vida de pessoas com diabetes mellitus tipo 2 [tese]. Ribeirão Preto: Universidade de São Paulo. Escola de Enfermagem de Ribeirão Preto; 2004.

17. Bittencourt ZZLC. Qualidade de vida e representações sociais em portadores de patologias crônicas: estudo de um grupo de renais crônicos transplantados [tese]. Campinas: Universidade Estadual de Campinas. Faculdade de Ciências Médicas; 2003.

18. Ministério da Saúde. Secretaria de Atenção à Saúde. Política Nacional de ação integral à saúde do homem. Brasília (DF); 2008.

19. Cesarino CB, Yamamoto K, Cruzeiro NF, Beccaria LM, Oliveira JFP, Pinto MH, et al. Fatores sociodemográficos associados às complicações dos pacientes renais crônicos durante a hemodiálise. Nursing (São Paulo). 2011;13(153):86-91.

20. Cravo CDL, Miranzi SSC, Iwamoto HH, Souza Júnior JL. Perfil epidemiológico dos pacientes em hemodiálise de um hospital universitário. Ciênc Cuid Saúde [Internet]. 2011[cited 2013 Oct 05];10(1):110-5. Available from:

<http://www.periodicos.uem.br/ojs/index.php/CiencCuidSaude/article/view/10720/pdf>

21. Ministério da Saúde. Organização Pan-Americana da Saúde. Avaliação do plano de reorganização da atenção à hipertensão arterial e ao Diabetes Mellitus no Brasil [Internet]. Brasília (DF): Ministério da Saúde; 2004 [cited 2014 Jan 25]. Available from: <http://bvsms.saude.gov.br/bvs/publicacoes/diab.pdf>

22. Siviero PCL, Machado CJ, Cherchiglia ML. Insuficiência renal cônica no Brasil segundo enfoque de causas múltiplas de morte. Cad saúde Colet [Internet]. 2014 [cited 2015 Jan 15];22(1):75-85. Available from: <http://www.scielo.br/pdf/cadsc/v22n1/1414-462X-cadsc-22-01-00075.pdf>

23. Barros E, Thomé FS, Karohl C. Fisiologia renal aplicada. In: Barros E, Manfro RC, Thomé FS, Gonçalves LFS, colaboradores. Nefrologia: rotinas, diagnóstico e tratamento. 2nd ed. Porto Alegre: Artes Médicas; 1999. p. 25-46.

24. Daugirdas J, Daugirdas T, Todd SI, Peter GB, editores. Handbook of Dialysis. 3<sup>a</sup> ed.

Philadelphia: Lippincott Williams & Wilkins; 2000.

25. International Association for the Study of Pain - IASP. Pain [Internet]. [cited 2014 Feb 28]. Available from: <http://www.iasp-pain.org/Education/Content.aspx?ItemNumber=1698&navItemNumber=576#Pain>

26. De Beni M, Bommassar R, Grossele L. Psicologia e sociologia: curso introdutório. São Paulo: Paulus; 2004.

27. Suddarth DS, Bare BG. Tratado de enfermagem médico-cirúrgica. 11th ed. Rio de Janeiro: Guanabara-Koogan; 2009.

28. Magalhães ACL, Coelho GD, Azevedo MA, Lazzari DD, Jung W. Qualidade de vida em pacientes com insuficiência renal crônica - da hemodiálise ao transplante renal. J Nurs UFPE on line [Internet]. 2013 June [cited 2015 Jan 13];7(9):5442-52. Available from: <http://www.revista.ufpe.br/revistaenfermagem/index.php/revista/article/view/4820>

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