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DEPRESSION AND QUALITY OF LIFE IN PATIENTS BEFORE AND AFTER RENAL TRANSPLANTATION

DEPRESSÃO E QUALIDADE DE VIDA EM PACIENTES NO PRÉ E PÓS-TRANSPLANTE RENAL DEPRESIÓN Y CALIDAD DE VIDA EN PACIENTES EN EL PRE Y POST-TRASPLANTE RENAL

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ABSTRACT

Objective: to analyze the occurrence of depression and quality of life in renal patients before and after transplantation. **Method:** quantitative, descriptive, exploratory, cross-sectional study. Three instruments were used to collect data: a questionnaire for characterization of the sample, the Beck depression inventory (BDI) and the SF-36 questionnaire, to evaluate the quality of life. The sample consisted of two groups: one in pre-transplant patients (59 patients) and the other in renal transplant patients (63 patients), totaling 122 patients. **Results:** the majority of patients, in both groups, did not present depression, corresponding to 88.9% of the transplanted patients and 79.6% of the pre-transplant patients. Quality of life was higher in transplant patients than in those awaiting the procedure. The SF-36 domains that determined the best quality of life in the transplanted patients were functional capacity ($p = 0.001$), pain ($p = 0.027$), general health status ($p = 0.049$) and vitality ($p = 0.000$). **Conclusion:** this study showed a low occurrence of depression in patients both in the pre- and post-renal transplantation. Quality of life was higher in the transplant group. **Descriptors:** Depression, Quality of Life; Organ Transplantation; Chronic Disease.

RESUMO

Objetivo: analisar a ocorrência de depressão e a qualidade de vida em pacientes renais no pré e pós-transplante. **Método:** estudo quantitativo, descritivo, exploratório, de coorte transversal. Foram aplicados três instrumentos para a coleta de dados: um questionário para caracterização da amostra, o inventário Beck de depressão (BDI) e o questionário SF-36, para avaliação da qualidade de vida. A amostra foi composta por dois grupos, um de pacientes no pré-transplante renal (59 pacientes) e o outro de transplantados renais (63 pacientes), totalizando 122 pacientes. **Resultados:** a maioria dos pacientes, em ambos os grupos, não apresentava depressão, correspondendo a 88,9% dos transplantados e 79,6% de pacientes no pré-transplante. A qualidade de vida mostrou-se superior nos pacientes transplantados em relação aos que aguardavam o procedimento. Os domínios do questionário SF-36 que determinaram a melhor qualidade de vida nos pacientes transplantados foram capacidade funcional ($p = 0,001$), dor ($p = 0,027$), estado geral de saúde ($p = 0,049$) e vitalidade ($p = 0,000$). **Conclusão:** esse estudo mostrou uma baixa ocorrência de depressão nos pacientes tanto no pré, como no pós-transplante renal. A qualidade de vida mostrou-se superior no grupo de transplantados. **Descritores:** Depressão, Qualidade De Vida; Transplante de Órgãos; Doença Crônica.

RESUMEN

Objetivo: analizar la ocurrencia de depresión y la calidad de vida en pacientes renales en el pre y post-trasplante. **Método:** estudio cuantitativo, descriptivo, exploratorio, de cohorte transversal. Se aplicaron tres instrumentos para la recolección de datos: un cuestionario para la caracterización de la muestra, el inventario Beck de depresión (BDI) y el cuestionario SF-36, para la evaluación de la calidad de vida. La muestra fue compuesta por dos grupos, uno de pacientes en el pre-trasplante renal (59 pacientes) y el otro de trasplantados renales (63 pacientes), totalizando 122 pacientes. **Resultados:** la mayoría de los pacientes, en ambos grupos, no presentaba depresión, correspondiendo al 88,9% de los trasplantados y el 79,6% de pacientes en el pre-trasplante. La calidad de vida se mostró superior en los pacientes trasplantados en relación a los que esperaban el procedimiento. Los dominios del cuestionario SF-36 que determinaron la mejor calidad de vida en los pacientes trasplantados fueron capacidad funcional ($p = 0,001$), dolor ($p = 0,027$), estado general de salud ($p = 0,049$) y vitalidad ($p = 0,000$). **Conclusión:** este estudio mostró una baja ocurrencia de depresión en los pacientes tanto en el pre, como en el post-trasplante renal. La calidad de vida se mostró superior en el grupo de trasplantados. **Descriptor:** Depresión, Calidad de Vida; Trasplante de órganos; Enfermedad Crónica.

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INTRODUCTION

The chronic renal failure (CRF) can be considered as a slow and progressive loss of renal function, resulting in abnormalities of the internal environment, such as: azotemia, anemia, metabolic acidosis, hyperphosphatemia, hypercalcemia, hiponatremia. The elevation of serum levels, mainly urea and creatinine clearance below 10 ml/min characterize the uremic syndrome, whose signs and symptoms involve particularly the gastrointestinal tract, and nervous and cardiopulmonary systems. Patients may present weakness, nausea, vomiting, anorexia, gastrointestinal bleeding, paresthesias, high blood pressure, irritability, anxiety, depression; among others.¹

Because it is a progressive disease, its development does not occur equally for all individuals, varying according to its underlying causes, with the rate of protein excretion in the urine and the degree of hypertension in each patient.²

The CRF is divided in stages, according to the renal function of the patient. Initially, there is no renal lesion or alteration of the kidney functions. Gradually the kidneys will reduce their rate of filtration, there are serum alterations in urea and creatinine, and signs and symptoms associated to the basic cause appear. Finally, the kidneys lose control of the internal environment, requiring the renal replacement therapy (RRT).³

The renal replacement therapy aims at keeping the patient under appropriate conditions in metabolic and clinical terms, as well as the adaptation to the treatment. However, regarding dialysis, the rehabilitation is not accomplished, unlike the transplantations that successfully rehabilitate subjectively and objectively, and with an excellent cost/benefit.⁴

Advances in technology in the area of dialysis contributed substantially to the increased survival of patients with CRF⁵⁻⁶, however, the permanence in the dialytic treatment for an indefinite period of time may interfere in the patients' quality of life.⁵

Studies show improved quality of life after the transplantation because of the possibility of returning to routine activities, however, the transplant may be associated with unsatisfactory scores among those that present acute rejection or adverse effects by the use of immunosuppressive drugs.⁷⁻⁸ The quality of life is defined according to the area of application, encompassing two trends, namely: the first presents a generic concept, which emphasizes aspects related to the

degree of satisfaction found in family, emotional, social and environmental life, correlating with the pattern that the society deems to comfort and well-being; the second one is related to health and it considers the influence of diseases and the respective treatments in the patients' quality of life.⁹

The quality of life related to health is conditioned by the experiences of each patient, as well as the effects of disease and its treatment have repercussions on daily life and the satisfaction of each individual.⁹⁻¹¹ The concern about the psychological aspects is critical for the successful treatment¹²⁻³, because they directly interfere with the perception and evaluation of the disease, treatment adherence and quality of life in patients with CRF.¹³

Depression is considered the most common psychiatric complications in dialysis patients. Among the psychological manifestations that occur most in this clientele include: persistent depressed mood, impaired self-image and feelings of pessimism. Among the physiological complaints, there are: alterations in appetite and weight, sleep disorders and decreased sexual interest.¹⁴ The renal transplant candidates frequently present psychiatric alterations, and depression corresponds to one of these changes¹⁵

The transplant patient may present loss of interest for almost all the activities, besides the reduction in appetite, sleep disturbances, decrease in energy, feeling of guilt or worthlessness and loss of thought. Often, there may be thoughts about death, suicidal ideation or suicide attempt, being more common in cases which there is a rejection of the organ and return to dialysis¹⁵⁻⁶

Given the above, it is characterized the importance of the emotional aspects and the quality of life in the monitoring of patients with CRF that wait in line for an organ transplantation, as well as the ones that were already subjected to the proceeding. Therefore, this study has the objective of analyzing the occurrence of depression and the quality of life in renal patients in pre and post transplant at the Renal Transplant Clinic of the Clinics Hospital (CH) of the Federal University of Pernambuco (UFPE).

METHOD

Article taken from the dissertation *Depression and quality of life in renal pre and post transplant*, by Patrícia Madruga Rêgo Barros, presented in 2008, in the Post Graduation Program in Sciences of Health, of the Federal University of Pernambuco/UFPE.

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It is a descriptive study, exploratory with a quantitative approach of sectional cohort, carried out at the Renal Transplantation clinic of the Clinics Hospital of the UFPE, which treats exclusively patients of the Health System (SUS).

The sample was consisted of 122 patients, after all of them previously signed the free and clarified consent term. Among the transplant patients treated at the clinic, 82 were eligible, of which 12 died, four did not attend scheduled appointments during the period of data collection, one of them refused to participate and two left the program, resulting this way in a group of 63 patients.

As for the pre transplant patients, a group of 59 patients was formed, being selected by convenience, considered the period of data collection and studies that evaluated the occurrence of depression and or the patients' quality of life with CRF.^{16,20-9}

It was used as criteria of inclusion in the sample: age over 18 years and be in the six months and two years of transplant. The exclusion criteria were: patients with psychiatric disorders diagnosed by the medical staff. The data were collected in the period of July to December of 2007 with the use of three instruments of data collection (all applied by one of the authors in a single interview): one form for sample characterization, Beck Depression Inventory (BDI), reviewed version of 1979^{17,20} and the Medical Outcomes Study 36-item Short-Form Health Survey (SF-36), instrument validated in Brazil, in 1997.¹⁹

The form used for the sample characterization consists of identification, demographic data and related to disease and treatment.

The Beck Depression Inventory (BDI) is probably the measure of self-evaluation of depression most widely used, in both research and clinic, having been translated into several languages and validated in different countries. The reliability and validity are good and can be used in clinical samples and the general population.¹⁸

The global evaluation of BDI is done by the sum of the numbers next to the questions - conferred on selected items by the patient. The score for the scale of Beck is defined as: Without depression = <15; Mild depression = 15-20; Mild to moderate depression = 20-30 and severe depression = 30-63.¹⁸

The original scale consists of 21 items, including symptoms and attitudes, whose intensity varies from 0 to 3. The items refer to sadness, pessimism, feeling of guilt, feelings

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of being punished, self-dissatisfaction, self-accusation, suicidal ideas, crying, irritability, social withdrawal, indecisiveness, bodily preoccupation, working difficulties, sleep disorders, fatigue, loss of appetite, weight loss, somatic preoccupation and loss of libido.¹⁸

The SF-36 questionnaire is a generic tool for assessing the quality of life, composed of 36 items grouped in eight components: functional capacity, limitation by physical aspects, pain, general health status, vitality, social and emotional aspects, and mental health.⁵ It is one of the most used tool for the quality of life evaluation, applicable to several types of diseases, evaluating, this way, the quality of life related to health.⁹

In order to evaluate the results, the calculation of scores was made and each response corresponded to a specific score. Subsequently, this value was converted into shares of eight domains, that vary from 0 to 100, in which 0 is considered the worst value and 100 the best for each domain.¹⁹

The softwares SPSS 13.0 for Windows, and Excel 2003 for data typing were used and all the tests were applied with 95% of reliability.

The normality test of Kolmogorou-Smirnov for quantitative variables was used. It was verified the existence of association by the Fisher's Exact Test and Chi-square Test for the categorical variables, Means Test; student's T test (normal distribution) and Mann-Whitney (non-normal); it was also used the Means Test (with more than two groups); Anova (normal distribution) and Kruskal Wallis (non-normal), for the statistical analysis of data.

It is emphasized that this study had the project of research approved by the Ethics Committee and Research of the Health Sciences Center of the Federal University of Pernambuco, under the Certificate of Presentation to Ethics Appreciation - CAAE-0049.0.172.000-07.

RESULTS

In Table 1 it is verified that: from 59 of the pre-transplant patients, 34 (57.6%) were males, 32(54.2%) lived in the Metropolitan Region of Recife, the most part of the group, 17(28.8%) were retired and just 3(5.1%) reported that they did not have a profession at the moment of the interview, 30(50.8%) had finished elementary school, 5 (8.5%) graduated from higher education with post graduation and only 3(5.1%) were illiterate.

From the 63 transplant patients, 35(55.6%) were males, 32(50.8%) lived in the

Metropolitan Region of Recife, the most part of the group, 27(42.8%) were beneficiaries and only 2 (3.2%) reported that they did not have a profession at the moment of the interview, 34 (53.9%) had finished elementary school, 1(1.6%) graduated from higher

education with post graduation and only 1 (1.6%) was illiterate.

The sociodemographic characteristics were similar among the groups, demonstrating homogeneity in the studied sample.

Table 1. Pre and post transplant renal patients according to sociodemographic characteristics treated at the ambulatory of the Clinics Hospital. Recife, 2007.

Variables	Groups				p-value
	Post-transplant		Pre-transplant		
	n	%	n	%	
Gender					
Male	35	55.6	34	57.6	0.962 *
Female	28	44.4	25	42.4	
Residence					
RMR	32	50.8	32	54.2	0.842 *
Others	31	49.2	27	45.8	
Occupation					
Has a profession	18	28.6	13	22.0	0.123 **
Just staying at home	06	9.5	05	8.5	
Retired	07	11.1	17	28.8	
Beneficiary	27	42.8	16	27.1	
Studant	03	4.8	05	8.5	
No occupation	02	3.2	03	5.1	
Education					
Illiterate	01	1.6	03	5.1	0.294 **
Elementary school not finished	03	4.8	04	6.8	
Elementary school	34	53.9	30	50.8	
High school	24	38.1	17	28.8	
Higher Education with post-Graduation	01	1.6	05	8.5	

(*) Chi-square Test
(**) Fisher's Exact Test

In table 2 it is verified that: the average age among the patients in the pre-transplant was 47 ± 12.38 years, the income, estimated median was R\$ 380.00 and the average time of dialysis was 39.63 months, the equivalent to three years and three months.

Among the transplant patients, the average age was 39 ± 10.39 years, the income was also R\$ 380.00 and the average time of dialysis was 82.05 months, the equivalent to 6 years and 10 months.

The average time of transplant was 1 year and 3 months. This information was not presented in the table, because it refers only to studied groups; however, it was in the discussion.

The average time of dialysis was also mentioned in the discussion, because of the relevance for the study.

Table 2. Pre and post-transplant renal patients according to age, income and dialysis time, treated at the ambulatory of the Clinics Hospital. Recife, 2007

Variables	Gruops				p-value
	Post-transplant		Pre-transplant		
	Mean	DP	Mean	DP	
Age	39.3	±10.39	47.1	±12.38	0.000 *
	Median	Q1 ; Q3	Median	Q1 ; Q3	
Income	380.00	380.00 ; 900.00	380.00	380.00 ; 700.00	0.328 **
	Mean	DP	Mean	DP	
Dialysis Time	6.8	±4.51	3.3	±2.79	0.000 **

(*) Student's T Test

(**) Test of Mann-Whitney

In table 3 it is observed that: 47 (79.6%) of the pre-transplant renal patients did not present depression, 7 (11.9%) presented moderate to severe depression, 4 (6.8%) mild depression and 1 (1.7%) presented severe depression.

Among the transplant patients: 56 (88.9%) did not present depression, 4 (6.3%) presented moderate to severe depression, 3 (4.8%) mild depression and no patient presented severe depression.

Table 3. Pre and post transplant renal patients according to depression levels that were treated at the ambulatory of the Clinics Hospital. Recife, 2007

Depression Levels	Groups				p-value *
	Post-transplant		Pre-transplant		
	n	%	n	%	
Without Depression	56	88.9	47	79.6	0.470
Mild Depression	3	4.8	4	6.8	
Moderate to severe Depression	4	6.3	7	11.9	
Severe Depression	0	0.0	1	1.7	
Total	63	100.0	59	100.0	

(*) Fisher's Exact Test

In table 4 it is verified that: 38 (86.4%) of the transplant patients that were between 1 and 2 years of transplant did not present depression, 4 (9.1%) presented moderate to severe depression and 2 (4.5%) presented mild

depression. Among the transplant patients with a period less than ore qual to 1 year of transplant, 18 (94.7%) did not present depression and only 1 (5.3%) presented mild depression.

Table 4. Pre and post-transplant renal patients according to depression levels in agreement to the time of transplantation who were treated at the ambulatory of the Clinics Hospital. Recife, 2007

Depression Levels	Time of Transplant				p-value *
	≤ 1 year		> 1 year and ≤ 2 years		
	N	%	n	%	
Without Depression	18	94.7	38	86.4	0.547
Mild Depression	1	5.3	2	4.5	
Moderate to severe Depression	0	0.0	4	9.1	
Total	19	100.0	44	100.0	

(*) Fisher's Exact Test

In table 5 it is observed that: in patients with less than 4 years of dialysis, 49 (83%) did not present depression, 6 (10.2%) presented mild depression, 3 (5.1%) moderate to severe depression and 1 (1.7%) severe depression.

In patients with a period of dialysis between 4 and 8 years, 30 (90.9%) did not present depression, 2 (6.1%) presented moderate to severe depression, only 1 (3%)

presented mild depression and no patient presented severe depression.

Among the patients with time equal to or greater than 8 years of dialysis, 24 (80%) did not present depression, 6 (20%) presented moderate to severe depression and no patient of the sample presented mild or severe depression.

Table 5. pre and post-transplant renal patients according to depression levels in agreement with the time of dialysis; these patients were treated at the ambulatory of the Clinics Hospital. Recife, 2007

Depression Levels	Time of Dialysis						p-value*
	< 4 years		4 - 8		≥ 8		
	n	%	n	%	n	%	
Without Depression	49	83.0	30	90.9	24	80.0	0.089
Mild Depression	6	10.2	1	3.0	0	0.0	
Moderate to Severe Depression	3	5.1	2	6.1	6	20.0	
Severe Depression	1	1.7	0	0.0	0	0.0	
Total	59	100.0	33	100.0	30	100.0	

(*) Fisher’s Exact Test

In table 6 it is verified that: in pre-transplant patients the social aspects, limitation by emotional aspects and mental health, presented the greatest means, corresponding, respectively to 90.0 (± 23.53 dp), 77.4 (± 41.73 dp) and 76.6 (± 19.76 dp), followed by the domains: pain, with 69.3 (± 30.20 dp), limitation by physical aspects, with 68.6 (± 45.15 dp), vitality, with 67.0 (± 22.95), functional capacity, representing 66.1

(± 31.43 dp) and, at last the general health status, with 63.7 (± 24.48).

Among the transplant patients, the following domains are highlighted: limitation by emotional aspects, with 87.8 (± 32.41 dp), functional capacity, with 82.6 (± 22.38 dp) and social aspects, with 82.1 (± 30.18 dp), followed by: vitality, with 80.4 (± 21.8 dp), pain, 78.8 (± 31.65 dp), mental health 74.1 (± 21.45 dp) and, at last, the general health status, with 71.1 (± 28.47 dp).

Table 6. Pre and post-transplant renal patients according to the average scores of the domains of the SF-36 questionnaire who were treated at the ambulatory of the Clinics Hospital. Recife, 2007

SF-36 domains	Groups		p-value
	Post-transplant	Pre-transplant	
	Mean ± DP	Mean ± DP	
Functional Capacity	82.6 ± 22.38	66.1 ± 31.43	0.001 *
Limitation by physical aspects	77.0 ± 41.71	68.6 ± 45.15	0.335 *
Pain	78.8 ± 31.65	69.3 ± 30.20	0.027 *
General Health Status	71.1 ± 28.47	63.7 ± 24.48	0.049 *
Vitality	80.4 ± 21.58	67.0 ± 22.95	0.000 *
Social Aspects	82.1 ± 30.18	90.0 ± 23.53	0.099 *
Limitation by Emotional Aspects	87.8 ± 32.41	77.4 ± 41.73	0.111 *
Mental Health	74.1 ± 21.45	76.6 ± 19.76	0.502 **

(*) Test of Mann-Whitney

(**) Student’s T Test

In table 7 it is observed that: for the group with time less than or equal to 1 year, the highest percentage corresponded to limitation by emotional aspects, with 91.2 (± 26.86 dp), followed by: pain, with 86.0 (± 25.4 dp), functional capacity, 83.0 (± 17.58 dp), vitality, 80.79 (± 18.13 dp), limitation by physical aspects, 76.3 (± 41.23 dp), social aspects, 75.7 (± 31.86 dp), mental health, 74.5 (± 16.72 dp) and, finally, general health status, with 66.1 (± 30.54 dp).

For the group with time greater or equal to 1 year of transplantation, the following domains in descending order were observed: limitation by emotional aspects, 86.4 (± 34.71 dp), social aspects, 84.9 (± 29.36 dp), functional capacity, 82.5 (± 24.34 dp), vitality, 80.2 (± 42.39 dp), pain, 75.8 (± 33.8 dp), mental health, 73.9 (± 23.38 dp) and, finally, general health status, with 73.3 (± 27.61 dp).

Table 7. Pre and post transplant renal patients according to average scores of the domains of the SF-36 questionnaire in agreement with the time of transplant; the patients were treated at the ambulatory of the Clinics Hospital. Recife, 2007.

Domains of SF-36	Time of Transplant		p-value
	≤ 1 year	>1year and ≤ 2 year	
	Mean ± DP	Mean ± DP	
Functional Capacity	83.0 ± 17.58	82.5 ± 24.34	0.433 *
Limitation by Physical Aspects	76.3 ± 41.23	77.3 ± 42.39	0.594 *
Pain	86.0 ± 25.40	75.8 ± 33.80	0.263 *
General Health Status	66.1 ± 30.54	73.3 ± 27.61	0.442 *
Vitality	80.79 ± 18.13	80.2 ± 23.10	0.733 *
Social Aspects	75.7 ± 31.86	84.9 ± 29.36	0.187 *
Limitation by Emotional Aspects	91.2 ± 26.86	86.4 ± 34.71	0.678 *
Mental Health	74.5 ± 16.72	73.9 ± 23.38	0.918 **

(*) Test of Mann-Whitney
(**) Student's T Test

In table 8 it is verified that: in the group with time of dialysis less than 4 years, the major averages occurred in descending order: social aspects, 85.6 (± 28.13 dp), limitation by emotional aspects, 78 (± 41.8 dp), pain, 77.6 (± 29.72 dp), limitation by physical aspects, 74.6 (± 42.67 dp), mental health, 72.8 (± 29.73 dp), vitality, 71.69 (± 21.67 dp), and general health status, 65.8 (± 25.75 dp).

In the group with time of dialysis between 4 and 8 years, the highest average was found in limitations by emotional aspects, with 91.9 (± 26.39 dp), followed by social aspects, 87.9 (± 26.61 dp), mental health, 81.6 (± 16.18

dp), vitality, 78.9 (± 20.98 dp), functional capacity, 78.9 (± 25.53 dp), limitation by physical aspects, 75 (± 43.3 dp), pain, 74.2 (± 29.5 dp) and, finally, general health status, 71.4 (± 27.68).

In the group with time equal or greater than 8 years of dialysis it was observed in descending order that: social aspects, 84.58 (± 27.4 dp), limitation by emotional aspects, 82.2 (± 37.89 dp), functional capacity, 73.7 (± 28.62 dp), vitality, 72.7 (± 27.82 dp), pain, 67.5 (± 35.56 dp), limitation by physical aspects, 67.5 (± 46.03 dp) and, finally, general health status, 66.6 (± 28.16 dp).

Table 8. Pre and post-transplant renal patients according to the average scores of the domains of the SF-36 questionnaire as the time of dialysis; the patients were treated at the ambulatory of the Clinics Hospital. Recife, 2007

Domains of SF-36	Time of Dialysis			p-value
	< 4 anos	4 - 8	≥ 8	
	Mean ± DP	Mean ± DP	Mean ± DP	
Functional Capacity	72.8 ± 29.73	78.8 ± 25.53	73.7 ± 28.62	0.680 *
Limitation by Physical Aspects	74.6 ± 42.67	75.0 ± 43.30	67.5 ± 46.03	0.642 *
Pain	77.6 ± 29.72	74.2 ± 29.50	67.5 ± 35.56	0.376 *
General Health Status	65.8 ± 25.75	71.4 ± 27.68	66.6 ± 28.16	0.444 *
Vitality	71.69 ± 21.67	78.9 ± 20.98	72.7 ± 27.82	0.210 *
Social Aspects	85.6 ± 28.13	87.9 ± 26.61	84.58 ± 27.40	0.638 *
Limitation by Emotional Aspects	78.0 ± 41.80	91.9 ± 26.39	82.2 ± 37.89	0.256 *
Mental Health	74.4 ± 19.57	81.6 ± 16.18	70.3 ± 25.38	0.082 **

(*) Kruskal-Wallis
(**) Anova

DISCUSSION

Regarding depression this study found that there was no significant statistical difference among the pre-transplant patients and the renal transplantation. However, there is a tendency for more cases of depression among the pre-transplant patients (table 3), in accordance to the results found in another study.¹⁶ However, it is emphasized that

depression may be a potential problem in post-transplant due to some possible implications, like the lack of adherence to treatment and the graft loss.^{16,20-1}, as well as some body changes, feeling of guilt in relation to the donor and the effect of immunosuppressive drugs.²²

A high percentage of patients was also found in both groups that did not show depression (table 3). The studies carried out

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in this area show different data found, demonstrating the presence of this disorder, mainly among the pre-transplant patients list²³ and among the transplant patients that returned to hemodialysis due to the graft rejection^{13,20-1}

This difference in results may be related to the fact that we did not work on patients with rejection, which hopefully would result in an increase in cases of depression among the subjects. It also speculates about the impact of waiting time for a transplant patient, still on dialysis, as reported by the authors.²⁴⁻⁶

Nevertheless, in patients in which depression was not found, the group of renal pre-transplant was the one that presented the highest rates of this disorders, in all levels (Table 3), as it is reported by other authors^{20,23-4}

The causes for a greater rate of depression among the patients with CRF may be related to the lifestyle acquired when they start dialysis. The dietary and water restriction, loss of autonomy, the fall in monthly income, reduced sexual interest and fear of death are identified as causative factors of depressive disorder in this population.^{13,27} Other causes often related to depression in patients in hemodialysis treatment are: complaints on malaise, cramps, sudden drops in blood pressure, presence of arteriovenous fistula and bias for insertion into the labor market²⁸, as well as poor treatment adherence.²⁹

The problems experienced by patients with chronic kidney disease have a negative quality of life^{5,11,23,30-1}, as seen in table 6, in which virtually all domains related to quality of life were lower compared to kidney transplantation, as described by the authors.^{23,32}

Other reason that may cause depression in patients with CRF that are in the waiting list for a transplant consists possibly in the form of confronting the new situation. The stress experienced by these patients when faced with the possibility of transplantation could trigger a depressive disorder.²⁴⁻⁶ (**Erro! Indicador não definido. Erro! Indicador não definido. Erro! Indicador não definido.**)

For some patients the waiting list for a transplant is considered a symbol of hope, psychic and social reorganization. For others, it may be understood as the last alternative.³³

It is worth noting that depression may also occur in the post-renal transplantation, as evidenced in some studies^{21,30-6} and as noted in some patients in this study (table 3), as well as in studies with other types of transplant, as is the case of liver

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transplantation³³, and this fact can be explained by the clinical and/or surgical complications²², for the rejection of the treatment¹³⁻³⁶, for the body alterations^{22,35} (**Erro! Indicador não definido. Erro! Indicador não definido.**), the use of immunosuppressive drugs^{16,21-22,37}, or maybe by the confluence of all these factors, in addition to negatively affect the QOL of these patients (**Erro! Indicador não definido. Erro! Indicador não definido.**). Depression can express the effect of one or more related factors, as can be the cause of other problems. Untreated depression may lead to graft rejection due to noncompliance with treatment¹³ (**Erro! Indicador não definido.**), as well as being a risk factor for suicide.³⁸⁻⁹ Similarly, rejection can be considered a risk factor for depression and suicide.^{13,21}

In relation to the time of transplant and its possible relation to depression levels, it was observed that the greater quantitative of transplant patients without depression corresponded to the period greater than one year and less than or equal to two years of the procedure. This result may be related to a better adaptation to changes in the lifestyle after one year of transplant, as reported by the authors.⁴⁰ The patient gets more independence¹² due to reduced frequency of hospital visits, it presents greater autonomy to solve their personal problems and develop their daily activities.³⁵

Another reason would be the pain reduction of the immunosuppressive drugs, which normally occurs with time according to the protocol of each drug and may be related to the reduction of effects of these medications, as in the case of depressive symptoms.³⁷

However, among the transplanted patients that presented depression, the major part focused on this same period, as reported in a similar study.³⁶ This justifies the occurrence of depression, after one year, due to the financial impact related to the difficulty of reintegration into the labor market, the physical status of the patient and the treatment he has undergone, with an influence about the family life and social activities, the digestive (constipation) and worries, such as: fear of infection and graft rejection.

A cumulative incidence of depression cases, during three years after the post-transplant, however, and justifies the occurrence of this disorder in the first year, relating to the factors like: adjustment in everyday life, fear of rejection and infection

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and use of immunosuppressive drugs as well as of their adverse effects.²¹

In this study it was evident that the greater quantity of patients without depression was found in the period less than four years of dialysis (Table 5), which differs from the findings of some studies.^{13,35,38-41}

This fact may be caused perhaps by a sense of hope in these patients that in a short time will get rid of this situation, some by the hope placed in a possible transplant^{22,35,42}, others did not understand what it means to be a carrier of a chronic renal disease and its implications, then thinking that there may be a cure and that the treatment is temporary.²⁴

However, although the major number of patients without depression were found in the period inferior to four years of dialysis, paradoxally the most of them, among the ones that present the disorder is also found in this same period, what it is in agreement with studies previously cited.^{13,35,38-41}

It is inferred that the fact stems from the way each person faces the various situations. Each individual reacts in a certain way, when surprised by the news that he is a carrier of a chronic disease and that he will need the treatment for the rest of their lives.^{24,27,43}

This fact may be enhanced when there is a possibility of a transplant: the individual often does not assimilate the disease and the treatment to be submitted and appears the perspective a surgery in which he will have to receive an organ of another person, living or dead.⁴⁴

Nevertheless, stratifying the levels of depression in table 5, it will possible to identify that in the period inferior to four years, occurred more cases of mild depression while the major part of cases in moderate to severe depression was found in the period greater or equal to 8 years. It is inferred that this is due to the prolonged waiting in the transplant list, what could cause the appearance of comorbidities²⁰ and even death, as well as increasing the uncertainty about the realization of the transplant, by the donor incompatibility.²⁰

In table 6 it is observed in the group of renal transplants that they presented a better quality of live, with a significant statistical difference, particularly in all domains in relation to the group of the pre-transplant line, what it is in agreement with the results of some research^{21,31-2,46}, except for the components of social and mental health, with percentages slightly higher among patients in the pre-transplant line.

It is inferred that the better quality of life among transplant patients it is due to the degree of independence that the transplant that provides when succesful, besides the lower dietary restriction, lack of water restriction and increased physical well-being, as also mentioned in some studies.³⁵⁻⁴⁰

Among the domains that stood out in this research, when compared to both groups, there are validity ($p = 0.000$), functional capacity ($p = 0.001$), pain ($p = 0.027$) and general health status ($p = 0.049$). In a certain study²⁹, there were no significant statistically differences in relation to the quality of life, when compared to the groups in the treatment of hemodialysis, in peritoneal dialysis and kidney transplant. However, it was verified that the component vitality presented a higher score in the group of renal transplant, as it was found in this study.

Another research also did not show significant statistical difference among the scores of QOL when compared to patients in the pre and post-transplant, however, it was mentioned that the average of scores pointed to one positive difference in the evaluation of the quality of life after the transplant.³⁵

A third study has shown a subjective perception in relation to QOL, negatively correlated with the presence of depression and lack of social support.⁴⁷

However, although this study and most of the research already mentioned presented more satisfactory results in relation to the QOL among the transplant patients, it is worth noting the potential commitment in the period after transplantation, focusing on some peculiar concerns of this period, for example, changes in body image, insecurity with a possible return to the professional activities, fear of the rejection of the graft and return to dialysis, as confirmed by some authors.^{7,22,32,35}

As far as social aspect is concerned, the higher score was related to a small number of patients of the pre-transplant line that presented divergent social characteristics from others, like higher income, better housing, higher intellectual level and access to private or contracted health treatment, bringing the average scores on this component.

As for the mental health area, it was also observed that there is a difference among the patients of the waiting line in relation to the transplant patients. The fact that this domain was higher in this group did not present a statistical significance and jars a bit of the present data in table 3, that presents a higher number of depression cases in this population, as well as a reaserch carried out on patients in

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dialysis treatment, in which the presence of depression it was verified the commitment of QOL mainly in the areas of mental and physical health.³⁰

A study about predictors of life quality in patients with chronic disease in hemodialysis showed lower scores in relation to the physical and mental components, relating these results to the presence of comorbidities like Diabetes Mellitus (DM) and Depression, the use of CDL as vascular access, absence of regular occupation and lower educational level, which influenced negatively to the QOL of this group,²³. In this research was found the similar data in relation to the domain of limitations by physical aspects and divergent in relation to the domain of mental health, however, the results did not present a statistical significance.

In tables 7 and 8 it was observed that there was no statistical significance with respect to the average scores for the QOL evaluation in relation to the time of transplantation, according to another study⁴⁷, and the time of dialysis.

With regard to the transplant, as previously cited, a study carried out with 166 transplant patients, being 47% of liver, 42.8% of kidney and 10.2% of heart, evaluated the relation among the levels of anxiety, of depression and QOL and period of time of the post-transplant. It was found that the highest levels of anxiety and depression after one year of transplantation, with the negative impact on the QOL of the patients.³⁶ The authors justified the results like resulting of concerns: possibility of rejection, infections and with the future of the physical, social and financial well-being.²¹⁻⁵

However, these concerns are perceived in all the periods of the post-transplant and even before the transplant, because they deal with concerns and in the real possibility of the occurrence of the alterations mentioned, as cited in a reasearch³⁵, what reinforces the results of this study.

As for hemodialysis, the research^{29,48}, demonstrated that patients with less time of treatment of dialysis presented higher scores for QOL, the same occurring with patients that did not have treatment of dialysis before the transplantation. However, in relation to the transplant patients that were subjected to dialysis before the surgery, it was not perceveid in this study significant effects on QOL.

CONCLUSION

This study showed that the majority of domains assessed for quality of life were significantly better among transplant patients in relation to the patients of the pre-transplant line. It was also verified that the most part of patients, both in the line and in the post-transplant did not present depression. The time of dialysis and transplantation apparently do not interfere in the perception of the patients about the emotional condition and quality of life.

However, it emphasizes that the importance of valuing the emotional and psychosocial aspects, due to the alterations that may appear, both in the pre and in the post-transplant.

It is believed that other reasearch in this area is of crucial importance for better understanding of the management of the treatment and the care with the chronic patients, and suggested a systematic psychological support in all stages of the transplant by a multidisciplinary team.

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