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ORIGINAL ARTICLE

MEDICATION ADHERENCE BY THE CHRONIC RENAL PATIENT ON HEMODIALYSIS*

ADESÃO À MEDICAÇÃO PELO PACIENTE RENAL CRÔNICO EM HEMODIÁLISE

LA ADHERENCIA A LA MEDICACIÓN POR EL PACIENTE RENAL CRÓNICO EN HEMODIÁLISES

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ABSTRACT

Objective: to measure adherence to medication in chronic renal patients on hemodialysis. ***Method:*** this is a quantitative, descriptive study carried out at a center of reference in Nephrology with 174 patients. Data collection used an Evaluation Questionnaire on the Adherence of the Patient with Chronic Kidney Disease on Hemodialysis, analyzing them through descriptive statistics. ***Results:*** most patients were male, elderly and with low schooling, of whom, 161 (93.3%) were adhering to the medication, who did not stop taking the medication and had mean serum levels of phosphorus of 5.6 mg/dl. ***Conclusion:*** the patients in this study showed good adherence to medication and knowledge regarding the importance of its use. The results show that the healthcare professionals perform continuous guidelines with those patients, which contributes to the promotion of knowledge and self-care, as well as to improvement and quality of care. ***Descriptors***: Renal Insufficiency, Chronic; Renal Dialysis; Adherence Medication; Patient Compliance; Chronic Disease; Nephrology Nursing.

RESUMO

Objetivo: mensurar a adesão à medicação em doentes renais crônicos submetidos à hemodiálise. ***Método:*** trata-se de estudo quantitativo, descritivo, realizado em um centro de referência em Nefrologia com 174 pacientes. Empregou-se, para a coleta dos dados, um Questionário de Avaliação Sobre a Adesão do Portador de Doença Renal Crônica em Hemodiálise, analisando-os mediante estatística descritiva. ***Resultados:*** revela-se que a maioria dos pacientes era do sexo masculino, idosos e de baixa escolaridade, dos quais 161 (93,3%) eram aderentes à medicação, que não deixaram de tomar os medicamentos e apresentaram média de níveis séricos de fósforo de 5,6 mg/dL. ***Conclusão:*** mostraram-se os doentes deste estudo boa adesão à medicação e orientados quanto à importância do seu uso. Aponta-se, pelos resultados, que os profissionais de saúde realizam orientações constantes aos pacientes, o que contribui para a promoção do conhecimento e autocuidado, bem como para a melhoria e qualidade da assistência. ***Descritores*:** Insuficiência Renal Crônica; Diálise Renal; Adesão à Medicação; Cooperação do Paciente; Doença Crônica; Enfermagem em Nefrologia.

RESUMEN

Objetivo: medir la adherencia a la medicación en los pacientes con enfermedad renal crónica en hemodiálisis. ***Método:*** se trata de un estudio cuantitativo, descriptivo, realizado en un centro de referencia en Nefrología con 174 pacientes. Fue utilizado, para recopilar datos, un Cuestionario de Evaluación de la Adhesión del Portador de la Enfermedad Renal Crónica en Hemodiálisis, analizándolos mediante estadística descriptiva. ***Resultados:*** la mayoría de los pacientes eran del sexo masculino, de edad avanzada y con baja escolaridad, de los cuales 161 (93,3%) adhirieron a la medicación, que no dejen de tomar el medicamento y con una media de niveles séricos de fósforo de 5,6 mg/dl. ***Conclusión:*** los pacientes en este estudio presentaron una buena adherencia a la medicación e instrucciones en relación con la importancia de su uso. Los resultados mostraron que los profesionales de la salud realizan directrices continuas en esos pacientes, lo que contribuye a la promoción del conocimiento y el auto-cuidado, así como para la mejora y la calidad de la atención. ***Descriptores***: Insuficiencia Renal Crónica; Diálisis Renal; Cumplimiento de la Medicación; Cooperación del Paciente; Enfermedad Crónica; Enfermería en Nefrología.

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INTRODUCTION

Kidney disease is considered a global public health problem that affects more than 750 million people.[1] Its incidence has increased considerably in Brazil and data of the Brazilian Society of Nephrology (BSN), in the year 2017, pointed out that one in every ten Brazilians had some kidney damage.[2]

In its chronic form, the renal disease can lead to innumerable complications, as it progresses to kidney failure. This phenomenon results from the fact that the kidneys are characterized as fundamental components to the metabolic and hydroelectrolytic balance in the body, thus, its dysfunction is associated with increased morbidity and mortality.[3]

The Chronic Kidney Disease (CKD) consists of the slow, progressive and irreversible loss of renal functions, whose symptoms usually appear in its more advanced stages. The progression of this disease is evaluated through the decline in glomerular filtration rate, which can reach values below 15 ml/min/1.73m^2, which makes it incompatible with life, leading to the need for Renal Replacement Therapy (RRT).[4]

Among the RRT modalities, there are hemodialysis (HD), peritoneal dialysis and renal transplantation, with HD as the most common therapy. According to the Brazilian Investigation on Dialysis in 2017, more than 90% of the 48,526 patients registered in the BSN census underwent HD, a therapy often used for the entire life, since not all individuals have access or success with renal transplantation.[5]

To achieve a better outcome in hemodialysis therapy, the chronic renal patient needs to follow a complex therapeutic regimen, which requires significant adjustments in their life and encompasses the adherence to dietary regime, changes in water ingestion, drug therapy, and the HD itself, as well as social and psychological adjustments. Such changes generate stress and frustration for the patient, which implies the difficulty in adhering to the proposed treatment.[6-7] The promotion of self-care by the patient, the support of family and friends and professional guidance are fundamental to encouraging adherence.[8]

Among these aspects, the medication adherence is a multidimensional phenomenon, which can be defined as the degree of acceptance of a treatment by the individual to follow it as prescribed and directed.[9] The complexity and long duration of the treatment may constitute a barrier to adherence and, when there is failure in adherence, a series of clinical complications can arise, which directly contributes to reducing the quality of life and increasing the mortality in this group.[10] There is, furthermore, a negative impact on the economic scenario by the increased number of hospitalizations and avoidable costs.[11]

In this way, evaluating the adherence to medication becomes of great relevance in health practices, since it may guide behaviors and assist in the promotion of care by health professionals, contributing to a better survival and quality of life of these patients.[11]

OBJECTIVE

- To measure medication adherence in chronic renal patients undergoing hemodialysis.

METHOD

This is a quantitative, descriptive study, performed at a private center of reference in HD, contracted with the Unified Health System (UHS), located in the municipality of Juazeiro, northern region of Bahia, with 320 enrolled patients. The data were collected between November 2017 and February 2018. A complementary data collection was performed in the period from November 2018 to January 2019, in order to aggregate information about the serum phosphorus of patients throughout the week prior to the date of implementation of the initial questionnaire or as reliable as possible to the same.

The sample selection was simple and random, and was calculated through categorical variables, with a confidence interval of 95%, sample error of 5% and an estimated prevalence of 50%, so that 175 participants were selected, with one loss by refusal, which resulted in a sample of 174 participants.

The participants were chronic renal patients who underwent RRT in the modality of HD for at least three months, of both genders, all ages, race, social class and level of education, who agreed to participate and signed the Informed Consent Form (ICF). There was exclusion of those who had cognitive limitations, hearing impairment, or other conditions that were characterized as impediment to answer the questionnaire.

The following study variables were raised: medication adherence; age; gender; race; marital status; level of schooling; monthly family income; the presence or not of a caregiver; the cause that led to the CKD; serum phosphorus; information on guidelines regarding the use of drugs; importance; reasons for the importance; difficulties to take the medications and the reasons not to take the medications.

Data collection used an instrument based on the Evaluation Questionnaire on the Adherence of the Patient with Chronic Kideney Disease on Hemodialysis (EQ - CKD-HD), validated and adapted, in Brazil, in 2017.[7] Additional information regarding sociodemographic

conditions and causes of CKD were also included in this study.

The questionnaire was divided into four domains that address the adherence to HD, medication, liquid and dietary intake, totaling 46 questions. This study addressed the domain medication adherence, composed of nine questions that assess aspects such as the perception and understanding of the patient about the use of medication, orientation of health professionals about the medications and the patients' adherence to the medication.

To assess the patient's adherence, the levels of serum phosphorus were used, considering those who adhered with values smaller than 7,5mg/dl[7], and through the score obtained on the question that focuses on the "frequency that the patient did not take the medication", which scores from 200 to 0, considering as adherent scores from 200 to 150 and non-adherent from 100 to zero.

The data collected were analyzed through descriptive statistics, which uses the distribution of absolute and relative frequencies for categorical variables and measures of central tendency and dispersion. The 95% confidence intervals of 95% for the mean, as well as for the proportion, which used the binomial distribution. Data were doubly tabulated through Microsoft Office Excel 2013, treating them in Stata 14.0 so that their results were expressed in tables.

The study was submitted to the Research Ethics Committee of the University of Pernambuco (REC), taking into account the resolution 466/12 of the National Health Council (NHC), for evaluation and approval. Its approval was acquired in October 2017, under CAAE n. 73899317.4.0000.5207.

RESULTS

Table 1. Sociodemographic data of chronic renal patients form a dialysis center. Juazeiro (BA), Brazil, 2017-2018.

Variables	n	%	95%CI	
Age group in years				
19 - 29	10	5.8	3.1	10.4
30 - 39	32	18.4	13.3	24.9
40 - 49	37	21.3	15.8	28
50 - 59	44	25.3	19.3	32.3
60 or more	51	29.3	23	36.6
Sex				
Female	71	40.8	33.7	48.3
Male	103	59.2	51.7	66.3
Race				
Black	42	24.1	18.3	31.1
Pardo	82	47.1	39.8	54.6
Yellow	9	5.2	2.7	9.7
White	37	21.3	15.8	28.0
Indigenous	4	2.3	0.9	6.0
Marital status				
Married/stable union	101	58.1	50.5	65.2
Unmarried/divorced	61	35.1	28.3	42.5
Widow(er)	12	6.9	3.9	11.8
Education				
Elementary School	124	71.3	64.0	77.6
High School	44	25.3	19.3	32.3
Higher Education	6	3.5	1.5	7.5
Family income*				
≤ 1 minimum wage	113	64.9	57.5	71.7
1 - 5 minimum wages	59	33.9	27.2	41.3
≥ 5 minimum wages	2	1.2	0.3	4.5
Presence of a caregiver?				
No	24	13.8	9.4	19.8
Yes	150	86.2	80.2	90.6

*Minimum wage, in Brazil, in 2017: R$937.00.

Table 2. Clinical causes and history of chronic renal patients from a dialysis center. Juazeiro (BA), Brazil, 2017-2018.

Variables	Mean	SD	95%CI	
Serum phosphorus (mg/dl)	5.6	1.3	5.3	5.7
CKD causes	N	%	95%CI	
Uninformed	31	17.8	12.8	24.3
Diabetes Mellitus	35	20.1	14.8	26.8
Systemic Arterial Hypertension	61	35.1	28.3	42.5
Systemic lupus erythematosus	3	1.7	0.6	5.3
Glomerulopathies	13	7.5	4.4	12.5
Undetermined	31	17.8	12.8	24.3

Table 3. Information on guidelines regarding use of medications for chronic renal patients from a dialysis center. Juazeiro (BA), Brazil, 2017-2018.

Variables	n	%	IC95%	
Frequency with which health professionals talked about your medications				
This week	22	12.6	8.4	18.5
Last week	41	23.6	17.8	30.5
A month ago	44	25.3	19.3	32.3
More than one month ago	33	19.0	13.8	25.6
When I first started the treatment	17	9.8	6.1	15.2
Never	10	5.8	3.1	10.4
Other	7	4.0	1.9	8.3
Frequency with which health professionals talked about the importance of taking the medications				
Every hemodialysis session	23	13.2	8.9	19.2
Every week	34	19.5	14.3	26.2
Every month	58	33.3	26.7	40.7
Every two or six months	6	3.5	1.5	7.5
When my results are bad	19	10.9	7	16.6
Rarely	19	10.9	7	16.6
Never	15	8.6	5.2	13.9

Table 4. Perception and awareness of the importance of medication adherence of chronic renal patients from a dialysis center. Juazeiro (BA), Brazil, 2017-2018.

Variables	n	%	95%CI	
Level of the importance of taking the medication				
Extremely important	37	21.3	15.8	28.0
Very important	127	73.0	65.8	79.1
Moderately important	5	2.9	1.2	6.8
Little important	2	1.2	0.3	4.5
Not important	3	1.7	0.6	5.3
Reasons for the importance of taking the medication				
Because I understand that my kidneys do not work properly and I need to take the medication correctly	73	42.2	35.0	49.8
Because taking medications correctly is important to keep my body healthy	80	46.2	38.9	53.8
Because a health professional told me to take the medication	8	4.6	2.3	9.0
Because I became ill after I stopped taking the medication	5	2.9	1.2	6.8
Because I was already hospitalized after I stopped taking the medication	3	1.7	0.6	5.3
I don't think taking medication correctly is very important to me	4	2.3	0.9	6.1

Table 5. Perception and awareness of medication adherence of chronic renal patients from a dialysis center. Juazeiro (BA), Brazil, 2017-2018.

Variables	n	%	95%CI	
Medication adherence				
No	11	6.4	4	11
Yes	161	93.6	89	96
Difficulty taking the medications				
No	147	84.5	78.2	89.2
Yes	27	15.5	10.8	21.8
How hard to take the medications				
No hard at all	154	88.5	82.8	92.5
A little hard	7	4.0	1.9	8.3
Moderately hard	4	2.3	0.9	6
Very hard	7	4.0	1.9	8.3
Extremely hard	2	1.2	0.3	4.5
Frequency with which you didn't take the medication				
Not applicable: didn't stop taking the medications (200)	145	83.3	77	88.2
Very rarely (150)	23	13.2	8.9	19.2
Half of times (100)	1	0.6	0.1	4.0
Most of times (50)	4	2.3	0.9	6.0
All the times (0)	1	0.6	0.1	4.0
Not applicable: didn't stop taking the medications (200)	145	83.3	77	88.2
Reason not to take the medication				
Not applicable: didn't stop taking the medications	147	84.5	78.2	89.2
I forgot to take the medication	14	8.1	4.8	13.2
I forgot to get the medication	1	0.6	0.1	4
The medication was expensive, I couldn't afford it	5	2.9	1.2	6.8
Inconvenience	1	0.6	0.1	4
Side effects	5	2.9	1.2	6.8
Others	1	0.6	0.1	4

DISCUSSION

The demographic profile of the study population revealed a prevalence in the age group of people at economically active age, people of the male sex and low schooling. A study carried out in Rio Grande do Sul found a similar profile, which aimed to characterize the patients on HD concerning the sociodemographic and clinical aspects;[12] in the investigation of the BSN (2017), of the 48,526 participants from the census in dialysis, 58% were male.[5]

The high incidence of CKD in economically active people ends up generating an important impact on the economy of the country by the high cost related to the treatment offered by the UHS, as well as by the growing number of retirements from disability. Furthermore, there occurs a series of socioeconomic changes in the life of the patient and their family.[8]

In relation to the main reasons found for the higher incidence of male population on RRT, these may be related to the lower attendance of men to health services than women, which contributes to a late diagnosis of CKD and other pathologies.[13] A literature review, whose objective was to discuss the various aspects of the relationship between sex and CKD, showed diverging data regarding sex, pointing out that the prevalence of the disease is higher in women, but, in men, it tends to be more severe and evolve faster, resulting in a higher mortality rate.[14]

The predominant self-reported color in this study was *pardo*, followed by black. Clinical studies addressed the relationship between CKD in Afro-American blacks and the white people, highlighting a greater risk of developing the disease in the black population due to the higher blood pressure levels. In this group, socioeconomic and cultural factors are also related to these heterogeneities.[16-7]

In relation to the presence of a caregiver, most patients reported counting on the help of a caregiver, whose figure is of great importance to the chronic renal patient, whether family or not, since they participate in patient care and contribute to the process of acceptance of the disease and treatment adherence.[8,17]

Regarding the clinical causes for the development of CKD, SAH and DM constituted the main ones. Studies highlighted these two morbidities as the main causes for renal failure, and such diseases, when decompensated, eventually cause complications, which include the CKD.[5,9,18]

Moreover, there becomes extremely important the look for actions and strategies in Basic Health Care to control and prevent these diseases, acting directly on the risk factors involved[19], as well as the development of actions geared to the public in

the initial stages of CKD in conjunction with secondary care, in order to delay the need for RRT.[20]

Concerning medication adherence by patients, the dosage of serum phosphorus presented an average exceeding 5.5mg/dl, classifying them as adherent, based on a study whose reference value was the serum phosphorus lower than 7.5mg/dl. Nonetheless, the Ministry of Health characterizes hyperphosphatemia in dialysis patients with dosage of serum phosphorus above 5.5mg/dl.[21]

The dosage of serum phosphorus is an important biochemical marker for monitoring the control of phosphorus in chronic renal patients regarding the therapy, dietetics and dialysis.[18] In the CKD, due to renal failure, hyperphosphatemia is a usual complication, which, if not controlled, can lead to vascular calcification, secondary parathyroidism, osteodystrophy, interfering in the quality of life and in the increased rates of morbidity and mortality.[22]

Therefore, there is need to maintain an effective control of serum phosphorus in these patients in order to prevent complications. This control can be done through the adherence to the use of phosphorus chelants, a hypophosphoric diet, as well as, and not least important, the righteous attainment to the RRT.[23]

In relation to drug therapy, the chronic renal patient makes use of several medications to treat the imbalance and lack of important substances for the maintenance of homeostasis caused by renal dysfunction and, among them, there are the drugs for the control of phosphorus, potassium, calcium, hemoglobin and hematocrit, among others, due to associated comorbidities.[24]

The complexity of the therapeutic scheme involving the polypharmacy can hinder the medication adherence, because of reasons that may be associated with side effects, forgetfulness, low education, psychological issues or the unwanted adherence and, added to this, the particularity of the renal patient, with their physical, cognitive limitations, age, presence or not of a caregiver, can make this adherence more difficult.[25]

The non-adherence to medication is worrying and brings consequences to quality of life, such as failure in therapeutic results, hospitalizations and premature deaths,[11] and knowing the patient and their difficulties for the non-compliance is crucial to develop strategies based on their peculiarities, expanding the care for the psychological and sociocultural aspects.[10] The nurse, as a healthcare team member, has an important role in raising awareness of the patient and their family in the development of actions for prevention and health promotion.[26]

The patients in this study had adequate guidance from health professionals about using and taking the medications. The establishment of an effective communication between these professionals and the patient is of great importance in preventing damage, promoting care, and for confidence in the health team.[11] The periodic guidelines to renal patients about their medications and treatment are significant care actions that corroborate good practices of adherence, self-care and strengthening of the professional-patient bond.[11,27]

Most patients were aware of the importance of taking the medications, when relating this attitude to maintaining their health; the understanding of the patient about taking their medications, as well as why to use them, is a key element for the self-care, once the knowledge is essential to the adherence as well as to the acceptance of their clinical condition.[27]

The patients in the study showed adherence to medication, since the majority did not cease taking their drugs in any of the times. Those who stopped the use reported forgetfulness as the main factor. A systematic review, which aimed to know the scientific production on the degree of medication adherence in patients on hemodialysis, differed from this finding, showing that most patients on dialysis do not adhere to medications;[28] in addition, despite the low schooling and income of the sample, the participants understand the importance, have access and make use of their medications, coupled with professional guidance.

The research clinic has accreditation certificate level three in excellence from the National Accreditation Organization. The accreditation is a management tool based on good practices, aiming to achieve the care quality at health services.[29] In this context, the data expressed here reinforce the professional and managerial commitment to achieving the goals, reflecting on the appropriate patients' medication adherence, strengthening the professional-patient-institution bond for success.

A limiting factor of the study was the patients' difficulty to complete the questionnaire, which prevented the questionnaire from being self-administered. For this reason, the researchers had to read them, making its application laborious due to its extension.

CONCLUSION

The patients in this study showed good adherence to medication and knowledge regarding the importance of its use. The results show that the healthcare professionals perform continuous guidelines with those patients, which contributes to the promotion of knowledge and self-care, as well as to improvement and quality of care, besides the treatment adherence.

The issue is of great relevance, and further studies should be performed in other scenarios of chronic renal patient care, in view of the importance of the therapeutic compliance to the quality of life and control of CKD. The measurement of medication adherence is an essential tool at health services, which may provide subsidies for developing procedures and decision-making to promote the health of this population.

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