

Treatment adherence of chronic kidney disease patients on hemodialysis

Adesão de portadores de doença renal crônica em hemodiálise ao tratamento estabelecido

Adhesión de enfermos de insuficiencia renal crónica al tratamiento establecido

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Descritores

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Abstract

Objective: Identify the adherence behavior of chronic kidney patients to the four dimensions of the therapeutic regimen: hemodialysis, medication use, diet and fluid restriction.

Methods: Descriptive and cross-sectional study with a quantitative approach, developed at two hemodialysis centers in the State of Rio de Janeiro. To collect the data, an evaluation questionnaire was used on the adherence of the chronic kidney patient on hemodialysis. The data were analyzed through simple descriptive statistics.

Results: The domain with the highest percentage of non-adherent patients was hemodialysis with 32%. Medication was the domain with the highest percentage of adherent patients, 93.6%.

Conclusion: Treatment adherence is a dynamics behavior and, therefore, needs constant monitoring.

Resumo

Objetivo: Identificar o comportamento de adesão do paciente renal crônico ao regime terapêutico nas suas quatro dimensões: hemodiálise uso de medicamentos, dieta e restrição hídrica.

Métodos: Estudo descritivo, transversal com abordagem quantitativa, desenvolvido em dois centros de hemodiálise no Estado do Rio de Janeiro. Para coleta de dados, foi utilizado um questionário de avaliação sobre a adesão do portador de doença renal crônica em hemodiálise. Os dados foram analisados por meio de estatística descritiva simples.

Resultados: O domínio que apresentou maior percentual de pacientes não aderentes foi a hemodiálise, com 32%. Já a medicação foi o domínio com maior percentual de pacientes aderentes, 93,6%.

Conclusão: A adesão à terapêutica é um comportamento dinâmico e, como tal, merece monitorização constante.

Resumen

Objetivo: Identificar el comportamiento de adhesión del paciente renal crónico al régimen terapéutico en sus cuatro dimensiones: hemodiálisis, uso de medicamentos, dieta y restricción hídrica.

Métodos: Estudio descriptivo, transversal, con abordaje cualitativo, desarrollado en dos centros de hemodiálisis del Estado de Rio de Janeiro. Datos recolectados mediante cuestionario de evaluación sobre la adhesión del enfermo de insuficiencia renal crónica en hemodiálisis. Estos datos fueron analizados por estadística descriptiva simple.

Resultados: El dominio que presentó mayor porcentaje de pacientes no adherentes fue la hemodiálisis, con 32%. La medicación fue el dominio con mayor porcentaje de pacientes adherentes, con 93,6%.

Conclusión: La adhesión a la terapéutica es un comportamiento dinámico. Siendo esa su condición, merece recibir monitoreo constante.

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Introduction

Chronic kidney disease (CKD) has different impacts in the lives of the ill patients and their relatives. The irreversible nature of the disease requires that they transform their routines in order to adapt and, in addition, adhere to the new treatment established.⁽¹⁾ The progressive loss of the kidney function stages the disease, ranging from stage one, characterized by the initial renal injury without any symptoms, to stage five, when the use of renal replacement therapy (RRT) is necessary.

The treatment of stage-five CKD requires a complex therapeutic regimen, including hemodialysis and a strict regimen of medication, diet and fluid control. These four treatment aspects are inseparable and constitute the pillars of treatment, directly influencing the morbidity and mortality rates. Non-adherence to any of these variables negatively affects the patient's quality of life and the health costs.⁽²⁾

According to the 2015 census by the Brazilian Society of Nephrology (BSN), the prevalence and incidence rates of CKD correspond to 544 and 180 per million inhabitants, respectively. In Brazil, 726 RRT centers exist, with an estimated number of 111,303 patients undergoing RRT, 84% of them funded by the Unified Health System (SUS). Of this total, 92.8% are submitted to hemodialysis (HD).⁽³⁾

Within the spectrum of high-complexity health care, that is, for patients already on hemodialysis, the objectives of the care policy for renal patients are to increase the patient's survival, reduce the morbidity, improve the quality of life and guarantee the treatment access, continuity and possibility of a kidney transplant.⁽⁴⁾ To achieve these objectives, guaranteeing the patient's treatment adherence is fundamental.

According to the National Kidney Foundation, the ideal hemodialysis dose has been established, maintaining a Kt/V (urea clearance) rate superior to 1.2, at a frequency of three times per week, with each session taking four hours.⁽⁵⁾ Hence, to achieve a lower mortality rate, research needs to be focused on other areas, including patient adherence to the proposed therapeutic regimen.

Therefore, this research aims to identify chronic kidney patients' treatment adherence behavior.

Methods

A descriptive and cross-sectional study with a quantitative approach was developed at two hemodialysis centers, located in the cities of Itaboraí and Niterói, respectively, both in the State of Rio de Janeiro.

The study was registered on the *Plataforma Brasil* under Submission Certificate for Ethical Evaluation (CAAE) 27160314.8.0000.5238 and received approval from the Research Ethics Committee (CEP) at Anna Nery School of Nursing under protocol 567.434. All the participants included signed the Free and Informed Consent Form, in compliance on National Health Council (CNS) Resolution 466/12 on the guidelines and regulations for research involving human beings.⁽⁶⁾

The study participants were the patients undergoing hemodialysis at the centers described. The inclusion criteria were: being on hemodialysis (HD) for more than three months; undergoing HD three times per week, taking three to four hours; being over 18 years of age; being independent for activities of daily living; being able to read and having no cognitive disability. The head nurse of the services, who was already monitoring and was familiar with the participants, indicated the last three inclusion criteria. The sample of these participants had non-probabilistic, convenience-based characteristics.

On the whole, the two dialysis centers attend to about 300 patients. Only 109 complied with the inclusion criteria though. Seventy-eight of these patients were contacted between September 2014 and February 2015. The participants received and answered the evaluation questionnaire of the adherence of CKD patients on hemodialysis (QA-DRC-HD), a validated and culturally adapted tool for use in Brazil.⁽⁷⁾

The biological markers, in turn, were collected from each patient's electronic chart. Both clinics use the same data system, in which the in-

formation from each HD session, test results and nursing evolutions are stored. These data are used as objective criteria to determine the treatment adherence/non-adherence behavior, in combination with the subjective data from the applied questionnaire.

The QA-DRC-HD consists of 46 questions, divided in five sessions. The first refers to general information on the patient and the RRT. The second relates to the hemodialysis, the third to medication, the fourth fluid restrictions and, finally, questions on the dietary recommendations. The answers in the questionnaire use a combination of a Likert scale, multiple-choice and yes/no answers.⁽⁷⁾

Adherence itself is assessed in six of the 46 questions, scored according to the answer given. The most adherent patients gain a higher score, as opposed to the least adherent patient. Three questions relate to the HD domain, whose total score ranges from 0 to 600 points. Adherence with the other domains (medication, fluid intake and diet) is assessed by means of one question for each, with scores ranging between 0 and 200 points.⁽⁷⁾

Eight questions address the patients' perception and knowledge on the treatment. The educative actions the monitoring health professionals presented to the patients are also covered, as well as questions on the caused related to non-compliance. Thus, the individual's universe can be detailed, deepening the knowledge on the causes of certain behaviors.

The subjective data are correlated with objective criteria to determine the compliant/non-compliant behavior. These criteria are:⁽⁶⁾ being absent from more than one session and/or shortening an HD session by more than ten minutes (for non-compliance with HD); having a phosphorus level superior to 7.5mg/dl (for non-compliance with medication and diet); GPID superior to 5.7% of dry weight (for non-compliance with fluid intake) and potassium level superior to 6 mmol/l (for non-compliance with diet).

The data were included in an Excel® database and analyzed through simple descriptive statistics.

Results

Seventy-eight patients answered the questionnaire. The mean age was 51.10 years, ranging from 22.72 to 84.25 years. Of the total, 38.5% (30) were women and 61.5% (48) were men. Regarding the time of hemodialysis, the mean was 86.11 months, ranging from 3.32 to 409.9 months. 93.6% (73) of the participants had never received peritoneal dialysis (PD).

The questionnaire includes eight questions on the health professional's approach to education and patient encouragement towards adherence. The question pattern is repeated, changing only the domain the questions are focused on (HD, medication, fluid intake and diet). Regarding the HD domain (26.9% of patients), in terms of fluid intake (33.3% of patients), the most prevalent response concerning how frequently they received information on these aspects was "When I started treatment the first time". Regarding drugs and diet, the most prevalent response was "One month ago", with 41% and 33.3%, respectively.

The questionnaire, in questions separated by domain, also asks if the patient has difficulties in following the appropriate treatment and at what level that difficulty occurs. The "no difficulty" option was answered by 65.4% of the patients questioned about compliance with the complete HD session, and by 74.3% of the subjects with regard to taking the prescribed medication.

What fluid intake and the diet were concerned, 49.8% and 53.9% of the patients reported a level of difficulty that varied from moderate to extreme in order to comply with the prescribed recommendations. The reasons associated with this fact were also questioned, and it was pointed out that more than half of the patients, 55.1%, said they were "unable to" follow the fluid intake recommendation, and 56.4% the proposed diet.

Despite the difficulties the patients presented, they mostly recognized and classified the complete implementation of HD programming (85.8%), medication intake (84.6%), fluid restriction (78.2%) and diet compliance (71.7%) as "extremely important" (Table 1).

Table 1. Reasons associated with difficulty to comply with treatment regimen

Variables	Total cases n(%)
What type of difficulty do you experience to maintain your recommended diet?	
Does not apply: no difficulty	31(39.7)
I am not willing to control what I want to eat	3(3.9)
I do not manage to avoid some non-recommended foods	44(56.4)
I do not understand what type of diet I have to follow	0(0)
Total	78(100)
If you have any difficulty to comply with the fluid restriction, what type of difficulty do you experience?	
I experience no difficulty	33(42.3)
I do not want to follow the fluid restriction	2(2.6)
I do not manage to follow the fluid restriction	43(55.1)
I do not understand what I should do to follow the fluid restriction	0(0)
Total	78(100)

% - percentage; n - sample size

The domain with the highest percentage of non-adherent patients was hemodialysis with 32%. Medication was the domain with the highest percentage of adherent patients, 93.6%. Table 2 also displays the respondents' score, showing that the most adherent patients scored higher in each domain, while the least adherent patients' score was lower (Table 2).

Table 2. Adherent/non-adherent status

Domain	Status	n(%)	Mean score
Hemodialysis	Adherent	53(68)	558.02
	Non-adherent	25(32)	352.00
	Total	78(100)	-
Medication	Adherent	73(93.6)	177.40
	Non-adherent	5(6.4)	30.00
	Total	78(100)	-
Fluid intake	Adherent	64(82.1)	128.91
	Non-adherent	14(17.9)	7.14
	Total	78(100)	-
Diet	Adherent	67(85.9)	126.87
	Non-adherent	11(14.1)	27.27
	Total	78(100)	-

% - percentage; n - sample size

Discussion

According to the 2015 census⁽³⁾ of from the Brazilian Society of Nephrology (SBN), 42.2% of dialysis patients are in the age group between 45 - 64 years. The mean age in this study was 51.10 years. In turn, the percentage of 61.5% of males is close to that presented in the 2015 census, which

was 58%. Regarding the initial treatment modality, in the period between 2000 and 2004, 89% of the patients started their therapy with hemodialysis.⁽⁸⁾ In this study, on the other hand, 93.6% of patients had never undergone PD.

The high frequency of responses "when I started treatment for the first time" on the guidelines received about fluid intake and compliance with HD reflect the shortage and consequent need for continuing health education by the multiprofessional team.

The regulation of the dialysis centers determines a professional composition of one nurse for every 35 patients per HD shift, one physician in the same proportion and one nutritionist, one psychologist and one social worker per dialysis center.⁽⁹⁾ Taking into consideration that adherence is a dynamic phenomenon that needs to be influenced by several factors and may change quite frequently, it is imperative that the health team develops strategies to constantly promote adherence behavior.⁽¹⁰⁾

In Switzerland, a prospective, randomized study was developed that proposed to separate patients into two groups: one group would be submitted to the integrated care approach (IC) and the other to the usual care (HC) approach. The study showed that, after six months of follow-up, 84% of the patients submitted to the IC group achieved satisfactory parathormone levels, compared to 55% of the patients in the habitual care group.⁽¹¹⁾

At a conservative treatment outpatient clinic in the city of Rio de Janeiro, the need was noticed to advance in the patient approach strategies to improve their treatment adherence. A collective strategy was adopted, which consisted of a waiting room debate mediated by health professionals; and an individual strategy consisting of a CKD monitoring card inspired by the child monitoring care, making it easier to visualize the progression of the disease, in addition to other aspects of treatment.⁽¹²⁾ Strategies such as these seek to permanently reinforce the need for patient adherence, making them reflect on their central role in conducting the established therapy.

A comprehensive systematic review evaluated efficient care models in care for patients with chronic kidney disease. Despite the limited evidence, the multidisciplinary models with nurse and pharmacist-led approach protocols presented the best results in the management of renal patients and better adherence to the treatment target. Key elements in chronic disease management include an organized approach, using evidence-based therapies and self-management support.⁽¹³⁾

In this study, the nursing consultation was not evaluated. Nevertheless, it is important to reinforce its role in stimulating and achieving treatment adherence. When asked about “When was the last time a health professional talked to you about ...”, the most recurrent response in HD and fluid intake was “when I first started treatment,” with 26.9% and 33.3%, respectively. Assuming that adherence is an extremely dynamic process, the provision of treatment-specific guidelines at the start of treatment only is inadmissible and may contribute to a process of individual demotivation, leading to non-adherence to therapy.

Studies with other chronic pathologies have demonstrated the importance of the nursing consultation in achieving satisfactory adherence results. A study with diabetic patients, whose intervention was the accomplishment of three nursing consultations at one-month intervals, showed an increase in the adherence rate from 83.87% to 96.78%, this increase being associated with the consultation.⁽¹⁴⁾ The same occurred in a study with heart failure patients, whose adherence was significantly associated with nursing consultations.⁽¹⁵⁾

As observed, the domains fluid intake and diet obtained the highest percentage of patients who reported difficulty to maintain treatment. The dietary regimen proposed to renal hemodialysis patients is extremely rigorous and several factors can influence compliance, including taste, economic situation, individual preference, social status, educational level, behavior, individual preferences and religious beliefs. All of these aspects may contribute to the patients’ reported difficulty.⁽¹⁶⁾ In a study developed

in the USA, the difficulty to comply with the fluid restriction was associated with a lack of motivation, as the machine removed excess fluid and the goals were very strict.⁽¹⁷⁾

The main cause associated with the difficulty to comply with the treatment was “I do not manage to follow”. Considering that 71.7% and 78.2% of the participants stated that it was “extremely important” to follow dietary and fluid recommendations, there seems to be a lack of motivation and/or inability to mobilize internal and subjective resources for this practice. The psychological and motivational aspects seem to play a prominent role in non-adherence to treatment.⁽¹⁸⁾

In the hemodialysis domain, 85.8% considered it “extremely important” to follow the prescribed recommendation. On the other hand, 32% were considered non-adherent on the basis of objective criteria. This figure can be considered high when compared to data resulting from the application of the same instrument: 22.4% in a survey conducted in the USA⁽²⁾ and 7.6% in a survey also conducted in the USA, but with patients exclusively of Hispanic origin.⁽¹⁹⁾

The instrument considers that some causes for a shorter HD time, such as hypotension, should not characterize the patient as non-adherent. Thus, the reduction of time should be associated with a cause unrelated to health problems. Of the patients considered non-adherent to HD, 44% claimed “personal problems” and 28% “did not want to stay”. The absence from and/or shortening of HD sessions is associated with increased hospitalization and mortality in this population, being the most worrying domain of treatment when the patients do not adhere.⁽²⁰⁾

Regarding the results of adherence in the other domains evaluated, the values found in this study are similar to the other two studies using the same instrument, both in the medication and in the diet domain. 6.7% of Brazilian participants, 5.1% of Americans⁽²⁾ and 5.7% of Hispanics were considered non-adherent to the medication.⁽¹⁸⁾ Non-adherent to the diet were 14.1% of Brazilians, 12% of Americans and 19.2% of Hispanics. In the fluid intake domain, there were greater differences among the results

found: 17.9% of non-adherent Brazilians, 10.34% of Americans and 5.7% of Hispanics.

In a study conducted with 151 patients using the same instrument applied in this study, it was verified that adherence to fluid intake was associated with low inter-dialysis weight gain, HD adherence was related to satisfactory Kt/V level and adherence to medication correlated with low phosphorus levels. These findings reinforce the fundamental role of adherence in these patients' clinical outcomes and indicate the path health professionals need to take in the surveillance and constant promotion of adherence.⁽²¹⁾

Conclusion

Treatment adherence is a dynamic behavior and, as such, needs constant monitoring. Therefore, new studies aimed at promoting adherence and improving morbidity and mortality indicators are important. The main limitation of the study was the patients' educational level, restricting the participants' greater inclusion in the selection stage. This kind of studies may benefit kidney patients by providing closer and individualized care, establishing trust in the professional-patient relationship and encouraging adherence to the proposed therapy. The multi-disciplinary team in the dialysis centers is already legally established, but advances are needed towards interdisciplinary care, promoting the professionals' integration in care for renal patients.

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