Accession of individuals to hemodialysis therapy

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RESEARCH

ACCESSION OF INDIVIDUALS TO HEMODIALYSIS THERAPY

A ADESÃO DE INDIVÍDUOS EM TERAPIA HEMODIALÍTICA

ADHESIÓN DE INDIVIDUOS A TERAPIA HEMODIALÍTICA

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ABSTRACT
Objective: to analyze the indicators of accession related with sociodemographic profile of individuals subjected to hemodialysis. **Method:** quantitative search with 56 individuals in hemodialysis in a renal clinic within Rio Grande do Sul. The data was collected through a questionnaire and research in medical records between August and September 2008. **Results:** married individuals aged 60 years, illiterate or incomplete primary education, treatment time between one and five years presented more indicators of accession; individuals with income above five minimum salary accepted less indicators. **Conclusion:** There are many involved factors in accession to hemodialysis and they are interrelated. Each individual follows the treatment in a unique and singular way with influence of many factors during their life. These particularities affect the answer to treatment and should be comprehended by professionals of health. **Descriptors:** Nursing, Renal Insufficiency, Renal Dialysis, Patient Compliance.

RESUMO
Objetivo: analisar os indicadores de adesão relacionados com o perfil sociodemográfico de indivíduos submetidos ao tratamento hemodialítico. **Método**: pesquisa quantitativa realizada com 56 indivíduos em hemodiálise numa clínica renal no interior do Rio Grande do Sul. Os dados foram coletados por meio de questionário e consulta ao prontuário, nos meses de agosto e setembro de 2008. **Resultados**: os indivíduos casados com idade acima de 60 anos, analfabetos, ou ensino fundamental incompleto, com tempo de tratamento entre um a cinco anos adotaram maior quantidade de indicadores de adesão; indivíduos com renda superior a cinco salários mínimos aderiram a menos indicadores. **Conclusão:** Existem vários fatores envolvidos na adesão ao tratamento hemodialítico agindo de forma inter-relacionada. Cada indivíduo segue o tratamento de forma única e singular, influenciado por inúmeros fatores adquiridos ao longo da vida. Essas particularidades condicionam a resposta ao tratamento e devem ser entendidas pelos profissionais de saúde. **Descritores:** Enfermagem, Insuficiência Renal, Diálise Renal, Cooperação do Paciente.

RESUMEN
Objetivo: analizar los indicadores de adhesión relacionados al perfil sociodemográfico de individuos sometidos al tratamiento hemodialítico. **Método**: investigación cuantitativa realizada con 56 individuos en hemodiálisis en una clínica renal del interior de Río Grande del Sur. Los resultados fueron recolectados por medio de cuestionario y consulta a los expedientes clínicos, en agosto y septiembre de 2008. **Resultados**: los individuos casados, mayores de 60 años, analfabetos o con enseñanza primaria inconclusa, con tiempo de tratamiento entre uno y cinco años adoptaron mayor cantidad de indicadores de adhesión; individuos con renta superior a cinco salarios mínimos adhirieron a menos indicadores. **Conclusión**: existen varios factores involucrados en la adhesión al tratamiento hemodialítico actuando de forma interrelacionada. Cada individuo sigue el tratamiento de forma única y singular, influido por inúmeros factores adquiridos a lo largo de la vida. Esas particularidades acondicionan la respuesta al tratamiento y deben ser entendidas por los profesionales de salud. **Descritores:** Enfermería, Insuficiencia Renal, Diálisis Renal, Cooperación del Paciente.

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INTRODUCTION

The progressive increase in patients on hemodialysis is observed from the analysis of recent census of the Brazilian Society of Nephrology. The 2010 census showed an estimated 92,091 patients on renal replacement therapy, of these, 90.6% were on hemodialysis.[1] Hemodialysis is a treatment that uses equipment and high-tech materials to realize the process of removing toxic substances and excess fluid from the body. This treatment requires the patient to remain connected to an extracorporeal system through arteriovenous fistula punctures, with mean duration of four hours three times a week, as the clinical condition of the patient.[2]

The individual undergoing hemodialysis undergoes significant changes in her daily life, often making it difficult to therapeutic adherence.[3-4] Such changes are related to the control of phosphorus, potassium and sodium in the diet, restriction of fluid intake, careful preservation of arteriovenous fistula, regular use of medications and adapting to the times of the hemodialysis. The patient might present a series of physiological stressors during and after hemodialysis sessions, which include hypotension, nausea, cramps, headaches, arrhythmias, fatigue, pain, bruising, bleeding at the site of subclavian arteriovenous fistula, among others.[5]

In this context, hemodialysis treatment requires adherence to the varied and complex therapeutic regimen. Treatment adherence can be represented by three areas: adherence to diet, dialysis and medication prescribed, that are related to social support, perceptions and beliefs that the patient has the disease, the patient's motivation, family participation, time prescribed treatment, residual renal function and health team.[6]

The definition of adherence is the degree of agreement between the conduct and guidance received from the patient. Adherence to treatment regimens is a long-term dynamic and multidimensional phenomenon determined by the interplay of factors: socioeconomic, patient-related, disease, treatment and healthcare. The fact of joining or not is related to the particularities of each patient. The need to know and understand these features, as well as the factors that are involved in treatment adherence, helps health professionals develop safe care and committed.[3]

In this sense, analyze adherence of individuals on hemodialysis is complex because of the many variables involved and the difficulty of measurement. The combination of direct methods and goals as the use of biochemical and clinical measurements and indirect methods and subjective self report represented by the patient, using interviews, are recommended for assessment of treatment adherence.[5-7]

To assess adherence to hemodialysis, you can use some indicators such as interdialytic weight gain, serum phosphorus and potassium adequate water control, dietary and drug treatment.[5,8]

Given the diversity of factors involving the tracking of hemodialysis, the patient finds it difficult to adapt to restrictions, limitations and controls imposed by the treatment. This may result in noncompliance, leading to the appearance of comorbidities, worsening health status and worsening their quality of life.[5,9]

In this regard, we emphasize the importance of knowing adherence of patients on hemodialysis because adherence to treatment is essential for the maintenance of life of these individuals.

From these considerations it has to analyze compliance indicators related to the demographic profile of individuals undergoing hemodialysis.

METHODOLOGY

This is a descriptive, exploratory qualitative approach. The study was conducted in August and September 2008, in a medium-sized renal clinic, located in the state of Rio Grande do Sul The operation of the clinic shifts occur in the morning, afternoon and evening, with the majority patients who attend the morning and afternoon shifts are from other municipalities and the night shift are all living in the city location of the clinic.

In the study population of 125 subjects, the participants were selected through stratified sampling forming a representative sample of the three shifts. The sample stratified random and is constituted by 56 individuals.

The number of participants was determined based on the minimum sample size (n) and error (e) equal to 10%. [10] The inclusion criteria were: being on hemodialysis, have aged 18 years, has no difficulty in communicating or understanding.

Data collection was performed during the dialysis session by applying a questionnaire to capture information sociodemographic, clinical, and laboratory data related to compliance with hemodialysis. The clinical and laboratory data were collected from medical records of patients.

The indicators adopted for membership are proposed by some studies that categorize membership by objective data and subjective. [5-6,8] For this study we adopted five indicators for adherence to hemodialysis: the individual who reported following the guidelines in relation to food consumption (restriction of foods rich in potassium, phosphorus, salt and fat) was considered adherent in relation to diet, the individual who demonstrated knowledge of the drugs used and reported to proper use of medication was considered adherent to medication, the individual showed that interdialytic weight gain less than or equal to 5% of its dry weight in three measurements was considered as adhering to fluid restriction, the individual who submitted the serum potassium level less than or equal to 5.5 mg / dl in the months of collection data was considered adherent, and the individual who had serum phosphorus between 4.5 to 6.0 mg / dl in the months of data collection, it was considered adherent. The data were tabulated and analyzed using the Microsoft Excel program, considering the descriptive statistics.

The research was initiated after obtaining the approval of the Ethics Committee of the institution through the process n. ° 23081.009779/2010-51 and CAAE 0128.0.243.000-10 and authorization for the clinical study. All study participants signed an informed consent form.

RESULTS AND DISCUSSION

This study consisted of a sample of 56 individuals with CKD on hemodialysis, of these, 53.6% (30) were male and 46.4% (26) females. The predominance of males in the study population is similar to the results found in the 2010 Census, in which 57% of individuals undergoing hemodialysis were male. [1]

The age of participants ranged from 20 to 81 years. It was found that the predominant age range was between 40 and 60% corresponding to 44.6 (25) individuals of the total sample. This age group is considered the productive age, representing a significant social data, because the chronic reaching a population of working age

affects spending in social areas due to early retirement, to outpatient and medication costs.[11]

In relation to professional activity, 60.7% (34) individuals receiving the sickness benefit or retirement Social Security, 19.6% (11) were defined as the home and 12.5% (7) were employed autonomous.

Patients on hemodialysis have difficulty maintaining connection with the work, due to the time dedicated to the treatment and the physical limitations and clinics. These situations may lead departures and retirements resulting from the disease. [12]

It was found that 50% (28) of the subjects have incomplete primary education and 12.5% (7) were illiterate. The literature shows that the higher level of education facilitates the understanding of the disease and its treatment; in contrast, those with lower education levels need more guidance by the healthcare team. The low level of education is related to greater likelihood of treatment dropout.[3]

It was found that 44.6% (25) of individuals living with a family income of up to two minimum wages. People from disadvantaged socioeconomic groups have a higher prevalence of chronic kidney disease. [13]

The religion of 69.6% (39) individuals were Catholic, 16.1% (9) were evangelical and other practitioners of other religions. The disease intensifies the search for God through spirituality and religion as sources of comfort and hope to families and patients living with chronic diseases. [9]

The Hypertension (HTN) was the underlying disease in 44.6% of CRF (25) of individuals then Diabetes Mellitus (DM), with 17.8% (10). These results are similar to data from the 2010 Census, which shows these diseases as major causes of IRC in Brazil.

To reduce the incidence of the number of people with the need for dialysis, it is necessary to invest in the redesign of the current ampaigns

in order to achieve better results in prevention and health promotion.[1,14]

The hemodialysis treatment time varied between three months to 15 years. Of the individuals surveyed, 50% (28) were performing hemodialysis one to five years. It is observed in practice the reduction of individuals with longer hemodialysis therapy. This can be explained by increased influx of individuals under treatment, also for the transfer of individuals to other treatment modalities, such as peritoneal dialysis and renal transplantation, as well as the complications that lead to death.

Regarding the indicator accession concerning diet, 73.21% (41) of subjects reported following recommended diet and 26.79% (15) of individuals did not follow. The diet for individuals undergoing dialysis is quite restrictive and can lead to malnutrition, which is considered a bigger problem than the actual restriction. It is necessary to adopt a balanced diet and adequate protein, lipids, carbohydrates, fluids, sodium, calcium, phosphorus, potassium, iron and vitamins, as laboratory tests and clinical status of each individual.[15] The adjustment of the diet of these individuals is complex, since it may have a food directions and restrictions. As an example, protein intake is required and stimulated for individuals undergoing hemodialysis; moreover, it contains high levels of phosphorus which are generally restrictive. To avoid damaging the intake of protein is indicated the use of phosphate binders. However, these can cause constipation, being recommended to use source of fiber, which are rich in potassium and phosphorus. For the consumption of fibers is indicated increased fluid intake, which for individuals undergoing hemodialysis is restricted.[2]

Before the accession indicator related to medication regularly, the study showed that 89.29% (50) of the individuals surveyed reported following the prescribed drug treatment and

10.71% (6) did not follow. The drug regimen varies with the needs of each patient, and generally includes various drugs such as phosphorus binders, vitamins, antihypertensives, insulin, recombinant human erythropoietin, diuretics, and statins, among others. The variety and quantity of medications and side effects, especially of phosphorus binders, which are barely tolerable, may influence treatment adherence. The correct intake of prescribed drugs is related to some factors such as the quantity, dosage, time of taking the drug, as well as access to them.[16]

Front indicator adhesion related to interdialytic weight gain, 46.43% (26) of subjects had a gain greater than or equal to 5% of its dry weight in three measurements. It is recommended that weight gain between hemodialysis sessions is less than 5% of its dry weight.[17] The interdialytic weight gain is caused by the ingestion of liquids such as water, soup and fruit juice with much. An excessive weight gain can lead to manifestations and complications such as dyspnea, malaise, acute pulmonary edema and congestive heart failure. The removal of excess fluid during hemodialysis may cause hypotension, muscle cramps, nausea, vomiting, and headache, among others.[2]

In daily work shows that patients have an exaggerated increase in weight, which may be a consequence of anuria and difficulty controlling the intake of sodium and fluid. This may occur more often on weekends, when the period between a hemodialysis session and another is greater. Participation in festivals and the season, as summer also influence the interdialytic weight gain.Regarding laboratory data as indicators of adherence, 42.9% (24) of the subjects had serum potassium greater than 5.5 mEq / L. The ability of potassium excretion by the kidneys in CRF is decreased. Individuals who exhibit little or no kidney function are likely to develop hyperkalemia, which is characterized by a serum

potassium level greater than 5.5 mEq/L2. Hyperkalemia may occur in clinical manifestations such as paresthesias, muscle weakness and paralysis, bradycardia, hypotension, atrial and even cardiac arrest.[2,15]

The elevation of potassium is often related festivities, consumption of fruit season, when there is an increase in the intake of foods rich in potassium.

Of the sample, 33.9% (19) of subjects had serum phosphorus values greater than 6 mg / dl. In CRF, renal excretion of phosphorus is decreased. When the serum phosphorus level greater than meet 4.5 mg / dL in adults is considered hyperphosphatemia, which may trigger secondary hyperparatireiodism and metabolic bone disease.

To avoid these complications in patients who undergo hemodialysis is recommended to maintain serum phosphorus between 3.5 and 5.5 mg / dl by dietary phosphorus restriction, medications and dialysis.[2]

According to the five indicators used in this study, it was found that the total sample, 32% (18) of individuals adhered to three indicators 25% (14) to four and 22% (12) the five indicators.

The adherence to the indicators described has an interrelationship, because at the time the individual does not follow the diet properly, hence may have changes in phosphorus, potassium and interdialytic weight gain. Not following the drug treatment may lead to complications, including increased phosphorus.

Thus, the individual hemodialysis to join a larger number of indicators, may have fewer complications and greater expectancy and quality of life.

By analyzing the relationship of age to the number of indicators adopted was found that

14.29% of individuals over 60 years and 5.36% for individuals 40 to 60 years adopted five indicators.
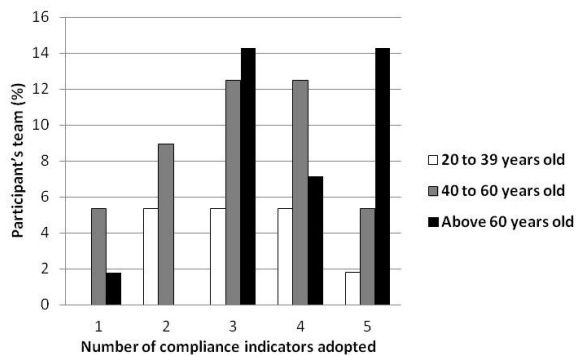

Figure 1 - Relationship of age with the amount of compliance indicators adopted by study participants, clinical renal, southern Brazil, August and September 2008.

It appears that the impact of diagnosis of CRF in view of life of patients is different. The possibility of hemodialysis treatment for the elderly is the hope of staying alive, and faces with it adheres better to this rigorous treatment.[4] The individuals younger by their social activities related to better clinical condition, with less symptoms, do not always follow the treatment, which can lead to decreased adhesion.

In this study, the majority of married individuals took more than two indicators of adherence to hemodialysis (Figure 2).
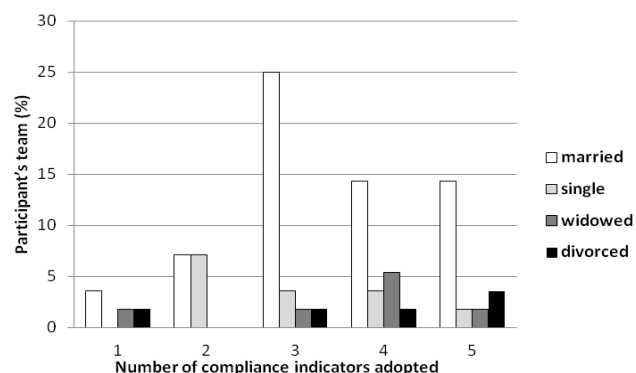

Figure 2 - Relationship of marital status to the amount of compliance indicators adopted by study participants, clinical renal, southern Brazil, August and September 2008.

This study highlights the importance of family support, since the family has responsibility for protection and socialization of its members.[9] In

the condition of living with chronic illness and its treatment, the search for support and help the family intensifies.[12] The involvement and commitment of the family in patient care and the health care team should be encouraged, as will enable a targeted assistance to their needs more effectively in treatment adherence.[3]

Analyzing the relationship between family income and the number of indicators adopted (Figure 3), it appears that individuals who received up to five minimum wages joined more indicators than those with incomes above this value.

CONCLUSION

The results showed that most individuals are male, married, Catholic, have age between 40 and 60 years, with low education and income of up to three minimum wages.

Married individuals aged above 60 years, illiterate, or elementary school, with treatment time between one and five years have adopted a greater number of indicators of adherence to hemodialysis.

Most study subjects took three indicators, which is a positive factor facing many hardships that requires treatment. Improve adherence should be an ongoing challenge, because the more the individual is adhering to diet, interdialytic weight gain less than or equal to 5% of its dry weight, the correct use and maintenance of serum potassium and phosphorus normal , lower the complications of disease and treatment, resulting in increased life expectancy and quality.

There are several factors involved in adherence to hemodialysis, which act in an interrelated manner. It is considered for membership, a very complex phenomenon, where each individual follows the treatment of a unique and singular, influenced by numerous factors acquired throughout life. These particularities

influence the response to treatment and should be understood by health professionals.

Thus, we highlight the importance of nurses consider the characteristics of the individuals in the planning of health actions in hemodialysis therapy, so that assistance can meet your real needs. Thus, it reinforces the role of the professional educator and as a transforming agent in promoting greater adherence to hemodialysis.
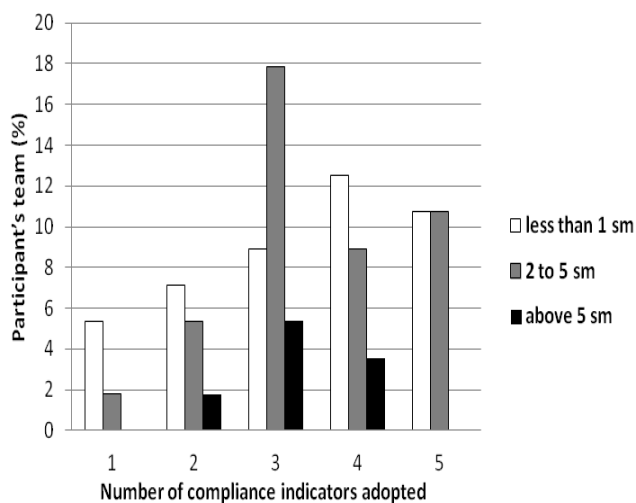

Figure 3 - Relationship of family income in minimum wages with the amount of compliance indicators adopted by study participants, clinical renal, southern Brazil, August and September 2008.

The result showed that the highest purchasing power did not influence the adoption of a greater amount of compliance indicators in the studied individuals. In this sense, the study[18] suggests that socioeconomic conditions are not determinants of adherence rates. But consider that some aspects are significant: as low socioeconomic status, low educational level, unemployment, lack of effective social support network, long distance from the place of treatment, cost of medication, family dysfunction, culture and beliefs about the disease and treatment.

Regarding education (Figure 4), it was found that illiterate individuals (analf) or with incomplete primary education (efi) adopted much of indicators of adherence to hemodialysis than

those with elementary education (efc) or teaching Some school (emi) and those with high school education (emc) or incomplete higher education (esi).
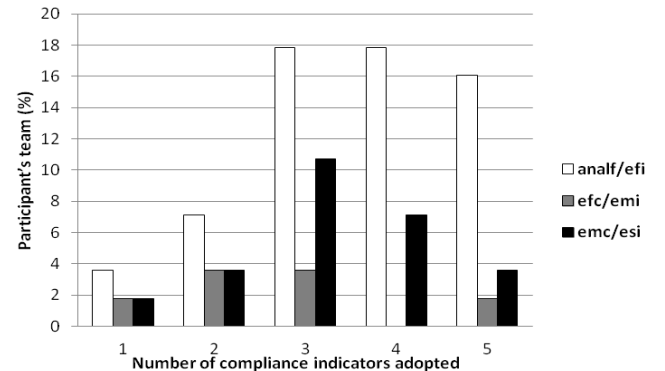

Figure 4 - Relationship between schooling and the amount of compliance indicators adopted by study participants, clinical renal, southern Brazil, August and September 2008.

The low education alone is not an explanatory variable in the process of becoming ill. However, it is considered that a higher level of education determines a better understanding of the disease, which can lead to early care and effective treatment. [13-14]

When analyzing the time of hemodialysis, it is observed that individuals who underwent treatment during one to five years have adopted a greater amount of compliance indicators (Figure 5).
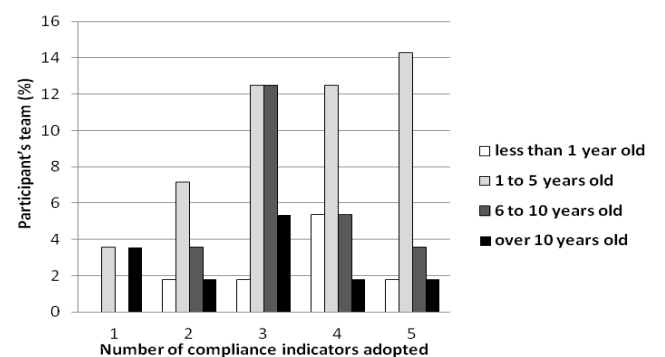

Figure 5 - Relationship of treatment time with the amount of compliance indicators adopted by study participants, clinical renal, southern Brazil, August and September 2008.

The data demonstrate that the higher the treatment time, the smaller the amount of compliance indicators adopted by individuals. Joining a long-term treatment such as

hemodialysis, it is not easy, as has limitations and the daily changes, affecting the freedom of the patient.[3] It can be seen that over the years, individuals on hemodialysis present several complications associated with the disease. This may be related to the loss of residual renal function, alterations in the metabolism of calcium and phosphorus, problems in the vascular access, cardiovascular disease, malnutrition, infection, and anemia, among others. These complications may influence the results of the indicators, regardless of the individual membership. Also, it is clear that not all individuals can adapt to treatment because many tire of impositions and restrictions and end up not sticking.

The IRC and its treatment trigger a series of conflicting situations, which affect the daily lives of individuals and their families, requiring them adaptations and changes in lifestyle. In this sense, it is necessary that health professionals to analyze and understand the factors related to adherence in hemodialysis therapy in individuals so that they can provide assistance aimed at improving treatment adherence.

REFERENCES

1. Sociedade Brasileira de Nefrologia. Censo de Diálise SBN. [on line]. São Paulo (SP); 2010; [citado2012 fev 15]; Disponível em: http://www.sbn.org.br/censo/2010

2. Barros EM, Thomé FS, Gonçalves LFS, Manfro RC. Nefrologia: rotinas, diagnóstico e tratamento. 3ª ed. Porto Alegre: Artemed, 2006.

3. Maldaner CR, Beuter M, Brondani CM, Budó MLD, Pauletto MR. Fatores que influenciam a adesão ao tratamento na doença crônica: o doente em terapia hemodialítica. Rev Gaúcha Enferm. 2008 dez; 29(4): 647-53.

4. Pilger C, Rampari EM, Waidman MAP, Carreira L. Hemodiálise: seu significado e impacto para a

5. Machado MMP. Adesão ao regime terapêutico representações das pessoas com IRC sobre o contributo dos enfermeiros. [CD-ROM] [dissertação]. Portugal: Mestrado em Educação na Especialidade de Educação para a Saúde, Universidade de Minho- Portugal; 2009.

6. Kaveh K, Kimmel PL. Compliance in Hemodialysis Patients: multidimensional measures in search of a gold standard. Am J Kidney Dis. 2001 feb; 37 (2): 244-66.

7. World Health Organization. Adherence to Long-term Therapies: evidence for action. Geneva; 2003.

8. Thomas CV, Alchieri JC. Qualidade de vida, depressão e características de personalidade em pacientes submetidos à hemodiálise. Rev Aval Psicológica. 2005 jun; 4 (1): 57-64.

9. Madeiro AC, Machado PDLC, Bonfim IM, Braqueais AR, Lima FET. Adesão de portadores de insuficiência renal crônica ao tratamento de hemodiálise. Acta Paul Enferm. 2010; 23(4):546-51.

10. Barbetta PA. Estatística Aplicada às Ciências Sociais. 4ª ed. Florianópolis: UFSC, 2001.

11. Rouquayrol MZ, Almeida Filho N. Epidemiologia e saúde. 6ª ed. Rio de Janeiro: Medsi, 2003.

12. Santos I, Rocha RPF, Berardinelli LMM. Qualidade de vida de clientes em hemodiálise e necessidades de orientação de enfermagem para o autocuidado. Esc Anna Nery Rev Enferm. 2011 mar; 15(1): 31-8.

13. Zambonato TK, Thomé FS, Gonçalves LFS. Perfil socioeconômico dos pacientes com doença renal crônica em diálise na região noroeste do Rio Grande do Sul. J Bras Nefrol. 2008; 30(3):192-9.

14. Cassini AV, Malagutti W, Rodrigues FSM, Deus RB, Barnabe AS, Francisco L, et al. Avaliação dos principais fatores etiológicos em indivíduos portadores de insuficiência renal crônica em

hemodiálise. ConScientiae Saúde. 2010 jul; 9(3): 462-68.

15. Riella, MC. Princípios de nefrologia e distúrbios hidroeletrolíticos. 4ª ed. Rio de Janeiro: Guanabara Koogan, 2003.

16. Patel, MX, David AS. Medication adherence: predictive factors and enhancement strategies. Psychiatry. 2007; 6(9): 357-61.

17. Clinical Practice Guidelines for Nutrition in Chronic Renal Failure. Am J Kidney Dis. 2000; 35(6) 2: 1-140.

18. Gusmão JL, Ginani GF, Silva GV, Ortega KC, Mion Jr D. Adesão ao tratamento em hipertensão arterial sistólica isolada. Rev Bras Hipertens. 2009; 16(1):38-43.