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PERFIL DE AUTOCUIDADO DO DOENTE EM TRATAMENTOS COM HEMODIÁLISE: ESTUDO DESCRITIVO TRANSVERSAL

Self-care profiles and patient management of haemodialysis treatments: A descriptive cross-sectional study

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RESUMO: Estudo explóratorio transversal, descritivo e correlacional sobre a teoria do autocuidado proposta por Orem. A pesquisa realizada permitiu a identificação de quatro dimensões: definição dos perfis para estabelecer a correlação entre o autocuidado e o autogestão do regime terapêutico; estudo da relação entre as características demográficas e autocuidado; estudar a correlação entre os perfis de autocuidado e os obstáculos ao regime terapêutico.

Entrevistas realizadas a 122 doentes em hemodiálise numa unidade de saúde. Os resultados clínicos foram extraídos a partir dos registos e mostram que os doentes com os maiores scores no perfil autocuidado responsável são aqueles com melhor conhecimento (liquid. - R = 0,250; p = 0,006; medicação - R = 0,246; p = 0,006); quem cuida melhor de acesso vascular (R = 0,186; p = 0,042); quem melhor administra a dieta (R = 0,267; p = 0,006); e quem enfrenta menos obstáculos (R = 0,207; p = 0,022).

Os resultados da pesquisa mostram que a implementação de planos de tratamento depende do conhecimento e compreensão dos doentes sobre o autocuidado e que este indicador é de maior importância na ajuda do doente na transição para uma nova condição de saúde e melhor qualidade de vida.

PALAVRAS-CHAVE: Compliance do Paciente; Hemodiálise; Enfermagem; Autocuidado.

ABSTRACT: *This study aimed to explore the self-care theory proposed by Orem and to perform a detailed categorization of the related profiles. The performed research enabled the identification of four profiles and goals were set to establish a correlation between self-care profiles and self-management of the therapeutic regimen; to establish a relationship between demographic characteristics and self-care profiles and to establish a correlation between self-care profiles and obstacles to an effective management of the therapeutic regimen.*

The design was cross-sectional, descriptive and correlational. Interviews were conducted with 122 patients undergoing haemodialysis in a healthcare unit. Clinical outcomes were extracted from medical records.

The results show that patients with the highest scores in the responsible self-care profile are those with improved knowledge (liquid - R=.250; p=.006; medication – R=.246; p=.006); who take better care of their vascular access (R=.186; p=.042); who manage their diet better (R=.247; p=.006); and who face fewer obstacles than the others (R=-.207; p=.022).

The research findings show that the implementation of successful nursing treatment plans depends on the knowledge and understanding of patients perceptions regarding self-care and that this indicator will be of the utmost importance when helping patients in the transition to a new health condition and to experience a better quality of life.

KEYWORDS: *Patient Compliance; Haemodialysis; Nursing; Self-care.*

Introduction

Nurses play a key role in caring for patients on a regular haemodialysis programme, relieving the initial stress, empowering self-care, helping to prevent complications resulting from treatment[1-2] and increasing the effectiveness of the management of the therapeutic regimen. Adherence and compliance to a therapeutic regimen significantly reduces the morbidity and mortality rates and treatment side effects.[3] Adherence to treatment plans, fluid and dietary restrictions, as well as a complex drug regimen are essential to preserve the well-being of patients with chronic renal failure undergoing haemodialysis[4]

An ineffective management of the therapeutic regimen by patients undergoing haemodialysis is revealed when: a) patients miss or shorten their treatment more than once a month; b) patients gain more than 5.7% weight between dialysis sessions; c) patients' levels of serum phosphorus exceed 7.5 mg/dl and/or; d) patients levels of serum potassium exceed 6.0 meq/L.[5-7]

The adherence to the treatment plans is highly influenced by the individual self-care profile.

The Department of Health[8] of the United Kingdom defined self-care as a range of indicators interfering with engagement in self-care activities, such as the life history and personal experience; level of knowledge; beliefs and values; cognitive abilities and literacy skills; cultural backgrounds; self-reliance; self-esteem; self-efficacy and self--control; ability to assess reality; ability to make decisions; ability to review existing information and the way it is displayed; the evidence of benefits related to support in self-care and support and encouragement of health professionals.[8]

Self-care can also be understood as a conduit or an attitude one adopts to control factors impacting personal development and performance.[9-11]

Since the early 50s of the past century, self-care has been investigated in Nursing. However, it is only in 1970 through the studies conducted by Dorothea Orem, from the Nursing Development Conference Group, that this concept has been progressively used.[9] Dorothea Orem describes self-care as the practice of activities undertaken by individuals in order to maintain their own existence, health and well-being.[9] Self-care can also be understood as a personal conduit adopted in specific life situations and targeted at the individual as a way to control the factors influencing the personal development and functioning towards own life, health and well-being.[9]

The conception of self-care adopted by the United Kingdom Health Department corroborate the recommendations of several authors, highlighting the Orem theory, describing the multivariate factors influencing the development and people self-care activities.

The purpose of the current study was to address only the variables related to the life history and individual path.[12] Self-care, as an individual decision-making process is intimately related to people's past and life experiences, personality and backgrounds, all likely to determine the self-care profile.[12] Based on these assumptions Räsänen and Zelznick,[13-14] conducted two studies with the purpose of developing an instrument that could test this theory and that could be used in clinical practice, in order to assess the self-care profile. The developed instrument included a scale with 42 questions used to identify

the client self-care profile, entitled 'Self-Care of Home Dwelling Elderly – SCHDE'.

Haemodialysis causes significant changes in the daily routine of patients, namely dietary restrictions.[15-16] When assessing patients undergoing haemodialysis, a variety of factors has to be considered: compliance with the medication regimen, restriction of fluids and diet, the haemodialysis treatment itself, communication, monitoring of signs and symptoms to prevent potential complications, the search for medical attention, knowledge of the renal disease and the promotion of a healthier transition to a better quality of life.[17-18]

Through the analysis performed on different patterns of behaviour in self-care, studies have identified four specific "self-care profiles": responsible, formally guided, independent and abandoned.[13-14,19] Responsible self-care describes a person who actively takes responsibility for all the activities of daily life and follows health requirements. A patient with a positive perception of life is very likely to be able to maintain a healthier lifestyle.

The formally guided self-care profile describes people who follow instructions without questioning, relying on health professionals with the management of treatments. The independent self-care profile refers to people who have original ways of taking care of themselves: their goal is to live their lives independently, not reaching immediately for professional help and constantly thinking of strategies to overcome daily life constraints.[19] Finally, the abandoned self-care profile describes people who feel powerless, depressed, helpless and often useless. These people do not care for themselves and are unable to self-manage their lives, often having to deal with the overpowering desire to give up.[19]

A number of authors set out to measure and categorize different types of self-care profiles. This is a key element when addressing patients undergoing dialysis treatments to understand how they will be able to manage their kidney disease and to identify implications for nursing practice and program targeted interventions. Thus, the focus of this research was to:

- Identify and describe the self-care profile of patients undergoing haemodialysis;
- Identify the correlation between self-care profiles and management of the therapeutic regimen.

Methods

This research is based on a quantitative research paradigm. This is a cross-sectional, correlational descriptive design study, aiming to describe and identify the self-care profile of participants undergoing haemodialysis and to identify the correlation between self-care profiles and management of the therapeutic regimen.

A total of 172 patients undergoing haemodialysis were recruited from a Portuguese care unit. The study was conducted during a period of two months and all participants that met the inclusion criteria were considered: patients undergoing haemodialysis treatments for more than three months; aged 18 or over; able to speak and understand Portuguese or English correctly; autonomy in self-care; undergoing a minimum of three dialysis treatments sessions per week, lasting three or more hours. Exclusion criteria were also considered: pregnant patients; patients with communication or cognitive skills impairment; institutionalised patients; patients diagnosed with neoplasm; and patients dependent on a healthcare provider. The final validated sample was 122 patients (from the initial sample of 126 patients, who met the inclusion criteria and gave their informed consent), since three refused to take part in the study and one was a kidney-transplant patient.

Data collection was performed through a form applied in interviews conducted with patients in the dialysis room during the treatment or in a separate room while patients were waiting for treatment. Patients were informed about the study and that acceptance or refusal to participate would not interfere in the treatment procedures. The interview lasted 49 minutes on average per patient which included: socio-demographic data; the 42 questions related to the description of the self-care profile included in the SCHDE, English version,[14] using a 5-point Likert scale (e.g. Responsible Profile: 'I want to be responsible for my medication'; Formally Guided Profile: 'I comply to all medications prescribed by physicians'; Independent Profile: 'I take care of myself and don´t need help from anyone'; Abandoned Profile: 'I depend on the support of family and friends'). The respondents were asked to indicate the degree of agreement or disagreement of the statement, from 'strongly disagree' to 'strongly agree'. The Cronbach's alpha of the original scale was .75, with a coefficient of .63 after being validated and translated to the Portuguese version.[20]

The questionnaire also included information about the ability to manage the therapeutic regimen, using 37 questions, and a total of 8 questions addressing the obstacles to the management of the therapeutic regimen, e.g. economic burden related to treatment, with answers on identical Likert scale, based on the Nursing Outcomes Classification[21] and further validated by an expert group from the Nursing School of Porto (ESEP). Additionally, other relevant data were extracted from patients' clinical records at the haemodialysis care unit. The Nursing Outcomes Classification was important in order to identify and use statements related to competencies in the management of the therapeutic regimen (e.g. Do you understand the importance of complying with the medication regimen?)

Patients were sorted into the four groups of the self--care profiles: responsible self-care, formally guided self--care, independent self-care and abandonment self-care. However, it was not possible to include many of the participants in a specific category since they revealed "undefined" self-care profiles. These results are explained by the high scores registered on the four categories of self-care, and also by the lower scores observed in more than one of the profiles.[19] In one recent study[20] the focus was on increasing the discrimination ability of self-care profiles through SCHDE, designing and testing a categorization based on the theoretical assumptions of Backman and Hentinen.[19] Throughout this study, Mota[20] provided a deeper analysis on more specific questions for each profile (example: profile 'pure' - score of ≥4.5 in a specific self-care profile, and necessarily a score of ≤3 in the other self-care profiles), resulting in a new calculated average score for each profile. Notwithstanding, the results were still inconclusive and continued to reveal a significant number of 'undefined' profiles, requiring new categorizations (for example: Responsible/Formally guided - a score of ≥4 on responsibility and Formally Guided self-care profiles; and a score of <3.5 in the independent and abandoned self-care profiles). A recoding was performed in an attempt to aggregate data and increase robustness to the identified profiles. This new recoding, self-care adhesion to the responsible profile may be relevant when considering a set of people undergoing haemodialysis treatments likely to adhere to a specific style or management of the therapeutic regimen procedure, more intervenient in the self-care processes. Contrarily, it might also suggest that the remaining 77 cases may represent more vulnerable people that reveal ways to manage the therapeutic regimen likely to expose them to higher risks and complications.

The study followed the descriptive and inference statistical procedure and data analysis was based on strategies similar to other research projects.[13] Since the assumption of normal distribution was not met, the non-parametric statistical tests were performed.

The consistency of the instruments was tested by calculating Cronbach's alpha. The α found was .71 for the self-care profile and .76 for the ability to manage the therapeutic regimen. Since this is a multidimensional study, the internal consistency of each dimension included in the form was assessed: 'self-care profile' (42 items) and 'competencies for the management of the therapeutic regimen' (37 items). Concerning the dimension 'self-care profile', the Cronbach alpha coefficient was of 0.71. Similar studies[20] show values around 0.7. In the dimension 'management the therapeutic regimen' the alpha coefficient was 0.76, also close to the results found in the study conducted by Mota,[20] that reached 0.74. A consistent theoretical framework underlines the instrument used in this study. The baseline for the development of this instrument was the studies performed by Backman and Hentinen,[12,19] which investigated and confirmed the content validity. In Portugal, several studies have been performed to support the content quality of the theory underlying the instrument to describe the self-care profile. In what concerns the content validity of the instrument that assesses the management of the therapeutic regimen, it is important to note that the 37 items are based on the Nursing Outcomes Classification. The nursing scientific community commonly adopts this classification and it derives from consistent, rigorous and audited methodological research, fostering its validity. As to the instrument's construct validity to describe the self--care profiles, since this is still a relatively new instrument, there are no sufficient data to confirm its validity, but there are currently some important findings, enabling to categorize some individuals with an 'undefined' self-care profile.

The research complied with all ethical guidelines and patients' approval. Authorization was granted from all parties involved, including the Ethics Committee of the haemodialysis care unit. Data input was computed using SPSS 20 package, and a code was assigned to each case, ensuring anonymity. A similar data analysis was performed

according to previous studies.[13-14,20] The strategies adopted for data analysis were similar to the aforementioned cited studies. A non-parametric statistic was performed since eligible criteria were not found to conduct a parametric statistic.

Results

The majority of the sample (58.2%) comprised males with an average age of 62.14 years and a standard deviation of 16.22 years. Table 1 lists the data concerning the socio-demographic and clinical description of the patients.

Table 1. Socio-demographic and clinical description of the participants

SOCIO-DEMOGRAPHIC DATA	
Average Age	62 years
Schooling	8.2% - No education
	32% - Primary school (four years)
Sex	58.2% - Male
Marital Status	59% - Married or in unmarried partnership
	42.6% - With spouse
	13.9% - Alone
Smoking Habits	83% - Non-smoker
Employment	76% - Retired
	14.8% - Employed
CLINICAL DESCRIPTION	
Aetiology	34.4% - Unknown
	16.4% - Hypertension
	9% - Diabetes Mellitus
Average treatment period	5 Years
Average duration of treatment	240 Minutes
Vascular access	77% - Arterial Venous Fistula
	21.3% - Prosthesis
	1.6% - Catheter
In last three months (averages)	3.18% - Interdialytic weight variation
	14.75% - Symptomatic collapses
	4.10% - Cardiovascular comorbidities
	3.3% - Phosphorus Values>7.5 mg/dl
	20.5% - Potassium Values>6meq/L
	46.7% - Collects all the prescribed medication

After the description and distribution of the patients according to their self-care profile was completed, a significant number of 'undefined' individuals were revealed (high scores registered on the four categories of self-care, and also lower scores observed in more than one of the profiles), meaning that it was not possible to clearly define a specific profile for these participants. Hence, and in line with a previous study,[20] a new recoding was applied in order to propose a new categorising of the self-care profiles, which results are summarized in Table 2.

Table 2. Breakdown of participants' self-care profiles

SELF-CARE PROFILE	N	RECODING EXPLANATION
Complete Abandonment (A)	1	Score on the specific profile ≥4.5 and score ≤3 in the remaining profiles
Completely Responsible (R)	13	
Predominantly Responsible	10	Score on the specific profile ≥4 and score <3.5 in the remaining profiles
Final undefined	71	
Responsible/ Formally Guided/ Independent/ Abandonment	2	Score ≥4 in all the 4 profiles
Responsible/ Formally Guided/ Independent	8	Score ≥4 in the R, FG and I profiles and score < 3.5 in the A profile
Responsible/ Formally Guided (FG)	8	Score ≥4 in the R and FG profiles and score < 3.5 in the I and A profiles
Responsible/ Independent (I)	6	Score ≥4 in the R and I profiles and score <3.5 in the FG and A profiles
Responsible/ Abandonment	2	Score ≥4 in the R and A profiles and score <3.5 in the I and FG profiles
Formally Guided/ Abandonment	1	Score ≥4 in the FG and A profiles and score <3.5 in the R and I profiles
TOTAL	122	

These data reveal that 45 patients were categorised with a "responsible profile" in self-care, as demonstrated in Table 3.

Table 3. Breakdown of responsible self-care profile participants

SELF-CARE PROFILE	N
Completely responsible	13
Predominantly Responsible	10
Responsible/Formally Guided/ Independent	8
Responsible/Formally Guided	8
Responsible/Independent	6
Others (who do not belong to a responsible profile)	77*
TOTAL	122

*All participants categorized as "final undefined" since they did not fit into any of the categories. And all people who do not have the R profile or, if they have it, they also have its opposite A profile.

Therefore, the assigned variables were used as indicators to study differences between the patients that were categorised into two large groups. The number of patients with the abandoned self-care profile did not reach statistical significance (n=6), thus it was decided to add those patients to the 'final undefined' group (n=71) and to create the second group, categorised as 'Others' (not included in a responsible profile)', n=77.

The results of this study show a strong association between highly educated individuals and a 'responsible self-care profile' - n= 45, Mean Rank=71.77; and highly educated individuals and a 'final undefined' – Mean Rank=50.09; p=.001, U Mann-Whitney test.

Considering the separated scores from the four self--care profiles (no longer split among the self-care profiles – joint reading of the four scores) – Table 4, and the socio-demographic characteristics of the sample, evidence shows that the patients with the highest average scores in the self-care abandoned profile are the widowers.

Outcomes also reveal that the patients with the highest scores in the abandoned and formally guided profiles are retired and that the non-smoking individuals returned higher scores in the self-care abandoned profile. The highest scores in the self-care abandoned profile are related to the older patients also registering the lowest level of education. Similar results were revealed in patients with the highest independent self-care scores and the highest scores in the formally guided self-care profile.

Based on the general standard measures to a successful management of the treatment regimen of patients undergoing haemodialysis, data shows that the group of patients with a responsible self-care profile reached the highest scores when assessing knowledge on medication, dietary and liquid restriction regimen.

Correlation was established with the treatment regimen management skills and results showed that the haemodialysis patients with the highest scores in the self-care profile had poorer management skills and little disease related knowledge. Individuals with the highest scores in the abandoned self-care and formally guided profiles also had little knowledge on medication, liquid intake and dietary plans. In contrast, patients with the highest scores in the responsible self-care profile were those who had the highest level of knowledge about liquid and medication, took better care of their vascular access and followed a healthy dietary plan.

Findings also show that patients with the highest scores in the self-care abandoned and formally guided profiles tend to have lower (average) serum phosphorous levels. In addition, patients with the highest scores in the abandoned self-care profile tend to have less urinary output.

Constraints to the management of the therapeutic regimen were also assessed and results show that the patients with the higher scores in the responsible self-care profile face fewer obstacles than others.

Discussion

The aim of this research is to determine and describe the self-care profiles in patients undergoing haemodialysis and to understand how these profiles influence the effective management of the therapeutic regimen.

Considering the different behaviours associated with the management of the therapeutic regimen it is important to understand how these can determine the various self--care profiles. Notwithstanding, and despite many of the participants in this study can be categorized into specific self-care profiles, 77 are still considered 'undefined', thus more potentially exposed to complications in the management of the therapeutic regimen. Several authors emphasize the contribution of a high literacy for better health,[22] or the association of a low literacy to several adverse health outcomes.[23] A responsible self-care profile was found to

be associated with the younger participants, contrarily to the final undefined individuals, who have recorded lower levels of education as age progressed.[24] Results show that the widowers returned the highest scores in the abandoned self-care profile, which is in line with the theoretical assumptions used as background for this research.[12,19]

The highest scores in the abandoned and formally guided self-care profiles were associated to the retired participants. As expected, this group included older participants and, according to this study, with lower levels of education when compared to the other respondents. Notwithstanding, retirement is a phenomenon that can also be related to a younger population, depending on the diagnosis of the disease and the severity of symptoms.

Findings show that smokers are less likely to comply with the treatment regimen than non-smokers[6,25] however this is not clearly evidenced by this research.

Higher scores in the abandoned self-care profile and lower scholar levels were usually found in the elderly participants. These older people show higher illiteracy levels, and due to a lower schooling education are less capable of defending their own opinions and autonomously intervene in all the important self-care domains. This trend is also prevalent in the patients with the highest scores in the independent self-care profile and in the formally guided self-care profile. In fact, school education and learning opportunities are extremely important for personal development.

Patients with the highest scores in the abandoned self-care profile typically express emotions such as bitterness, helplessness and lack of responsibility related behaviours. Similarly, they also register less formal education. The same results were found in patients described as 'resigned' and who 'passively accept the treatment options', e.g. with the highest scores in the formally guided self-care profile, and the individuals with the highest scores in the independent self-care profile, who relied on "the school of life as the best teacher". Hence, literacy appears to play an important role for improved health outcomes of populations, since education encourages more responsible self-care behaviours.

The patients with the highest scores in the abandoned self-care profile revealed poorer treatment management skills and less knowledge of haemodialysis. Individuals with the highest scores in the abandoned self-care profile and the formally guided self-care profile also had less knowledge about the medication, liquid intake and dietary plans. In contrast, the patients with the highest scores in the responsible self-care profile have improved knowledge, take the best care of their vascular access and can easily manage their dietary regimen. This is also the group that faces less daily life constraints, e.g. individuals with a 'positive outlook on the future'. They are 'happier' and 'can positively relate to other people';[14] they ask for help when they need it and expect a positive response from others.[19] This also means that they are better prepared to overcome daily life obstacles.

The patients with the highest scores in the abandoned self-care profile tend to have less diuresis. The patients with anuria endure longer treatments and are likely to gain more weight between dialysis sessions than the individuals with diuresis.[26-27] Therefore, an individual without residual diuresis is likely to accumulate more liquids and consequently more toxic substances, and will have to follow a stricter diet and liquid intake regimen than the individuals with diuresis. Based on the data gathered, one can infer that a stricter treatment regimen over a longer period of time may be related to a higher prevalence of emotional trauma, with the manifestation of depression related symptoms. In fact, depression is more likely to cause negative emotions like feelings of 'bitterness', 'sadness' and 'desire to give up', and potentiate a less positive self-care behaviour.

In relation to the obstacles to the therapeutic regimen, the results show that patients have a 'positive future perspective', 'ask for help when needed and expect positive responses from others'.[19], p.570 This positive attitude is likely to determine better results when facing an obstacle. Also, the improved knowledge on the disease and treatments can empower patients to better manage the related processes.

Finally, the patients with the highest scores in the abandoned and formally guided self-care profiles tend to show lower (average) serum phosphorous levels, which means poor adherence to the dietary and medication regimen.[5,28]

Conclusion

This research enables to determine that most of the individuals have an undefined self-care profile (58.2%), with only 11.5% identified as 'complete', and the remaining people predominantly tending towards a given profile. The self-care profile is a major contributor to the successful acquisition of self-care skills. High scores in the abandoned profile have a negative impact on the management of

the treatment regimen. On the other hand, high scores in the responsible self-care profile will probably influence an effective regimen management. Findings also reveal that individuals with responsible attitudes towards self-care perceive fewer difficulties and obstacles in the management of their treatment regimens. Finally, some clinical indicators are related to specific self-care profiles, causing constraints to a proper management of the therapeutic regimens. This categorisation may allow professionals to assess patients' perceptions, helping them to adopt self-care behaviours enabling a better transition to a healthier quality of life.

This research is based on the assumptions of the self-care profile, but it aims to deepen the understanding on patients undergoing hemodialysis treatment. These results therefore need to be interpreted with caution, since further studies would be necessary to evidence the impact in clinical practice. However, this research also shows that the implementation of successful nursing treatment plans depends on the knowledge and understanding of patients perceptions regarding self-care and that this indicator will be at the utmost importance when helping patients in the transition to a new health condition and to experience a better quality of life.

Table 4. Correlations between the four self-care profiles, socio-demographic, analytical and management of the therapeutic regimen variables

	CORRELATION VARIABLES	RESPONSIBLE	ABANDONED	FORMALLY GUIDED	INDEPENDENT
	Baseline Data				
Sociodemographic	Widowers		Mean Rank=73.95 p=.004*		
	Retired		Mean Rank=70.41 p<.001*	Mean Rank=65.85 p=.013*	
	Non-smoking		Mean Rank=39.7 p=.002§		
	Older		(ρ)=.425 p<.001[a]		
	Level of education		(ρ)=-.586 p<.001[a]	(ρ)=-.443 p<.001[a]	(ρ)=-.223 p=.014[a]
Management terapheutic regimen	Knowledge: medication regimen	Mean Rank=71.93 p=.001§			
	Knowledge: dietary regimen	Mean Rank=65.91 p=.048§			
	Knowledge: liquid restriction regimen	Mean Rank=68.68 p=.004§			
	Knowledge: medication	(ρ)=.246 p=.006[a]	(ρ)=-.478 p<.001[a]	(ρ)=-.359 p<.001[a]	
	Knowledge: liquid intake	(ρ)=.250 p=.006[a]	(ρ)=-.372 p<.001[a]	(ρ)=-.222 p=.014[a]	
	Knowledge: dietary plans	(ρ)=.247 p=.006[a]	(ρ)=-.323 p<.001[a]	(ρ)=-.258 p=.004[a]	
	Treatment regímen: management skills		(ρ)=-.236 p=.009[a]		
	Treatment regímen: knowledge		(ρ)=-.383 p<.001[a]		
	Care of their vascular access	(ρ)=.186 p=.042[a]			
	Serum Phosphorous level		(ρ)=-.230 p=.011[a]	(ρ)=-.173 p=.057[a]	
Medical	Urinary output		(ρ)=-.246 p=.006[a]		
	Constraits to the therapeutic regimen	(ρ)=-.207 p=.022[a]			

* Kruskal-Wallis test. § U Mann-Whitman test. [a] Rho Spearman test.

REFERENCES

1. Santos I, Rocha RPF, Berardinelli LMM. Necessidades de orientação de enfermagem para o autocuidado de pacientes em terapia de hemodiálise. Rev Bras Enferm 2011; 64: 335-42.
2. Rahimi A, Ahmadi F, Gholyaf M. The effects of Continuous Care Model on depression, anxiety, and stress in patients on haemodialysis. Nephrol Nurs J 2008; 35: 39-43.
3. Denhaerynck K, Manhaeve D, Dobbels F, Garzoni D, De Geest S. Prevalence and consequences of nonadherence to haemodialysis regimens. Am J Crit Care 2007; 16: 222-35.
4. Chenitz KB, Fernando M, Shea JA. In-center haemodialysis attendance: Patient perceptions of risks, barriers, and recommendations. Hemodial Int 2014; 18: 264-373.
5. Kim Y, Evangelista LS, Phillips LR, Pavlish C, Kopple JD. The End-Stage Renal Disease Adherence Questionnaire (ESRD-AQ): testing the psychometric properties in patients receiving in-center haemodialysis. Nephrol Nurs J 2010; 37: 377-93.
6. Pinheiro J. Autonomia e aderência na pessoa com doença renal crónica. Rev Bioét 2011; 19: 219-29.
7. Kim Y. Evangelista LS. Relationship between illness perceptions, treatmentadherence, and clinical outcomes in patients on maintenance haemodialysis. Nephrol Nurs J 2010; 37: 271-81.
8. Department of Health. Self-care – A real choice: self-care support – A practical option. Supporting self-car. London: DL; 2005. Available at: http://webarchive.nationalarchives.gov.uk/20090120141703/http://dh.ov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4100717. Accessed at: 2016-11-04.
9. Orem, DE. Modelo de Orem: conceptos de enfermería en la práctica. Barcelona: Masson; 1991.
10. Söderhamn O. Self-care activity as a structure: a phenomenological approach. Scand J Occup Ther 2000; 7: 183-89.
11. Söderhamn O. Health and the internal structure of the self-care ability scale for the elderly (SASE). Scand J Occup Ther 2001; 8: 67-71.
12. Backman K and Hentinen M. Factors associated with the self-care of home-dwelling elderly. Scand J Caring Sci 2001; 15: 195-202.
13. Räsänen P, Backman K, Kyngäs H. Development of an instrument to test the middle-range theory for the self-care of home-dwelling elderly. Scand J Caring Sci 2007; 21: 397-405.
14. Zeleznik D. Self-care of the home-dwelling elderly people living in Slovenia. Oulu: Oulu University Press; 2007.
15. Martins MRI and Cesarino CB. Qualidade de vida de pessoas com doença renal crónica em tratamento hemodialítico. Rev Lat Am Enfermagem 2005; 13: 670-76.
16. George FHM. Norma da Direção Geral da Saúde nº 017/2011. Lisbon: Direção Geral da Saúde; 2011.
17. Simmons L. Dorothea Orem's self-care theory as related to nursing practice in haemodialysis. Nephrol Nurs J 2009; 36: 419-21.
18. Yamana E. The relationship of clinical laboratory parameters and patient attributes to the quality of life of patients on haemodialysis. Jpn J Nurs Sci 2009; 6: 9-20.
19. Backman K and Hentinen M. Model for the self-care of home-dwelling elderly. J Adv Nurs 1999; 30: 564-72.
20. Mota, LAN. O perfil de autocuidado dos clientes: exploração da sua influência no sucesso após transplante hepático. Rev Referência 2012; Sup.: 226.
21. Moorhead S, Johnson M, Maas ML, Swanson E. NOC: Classificação dos Resultados de Enfermagem. 4th ed. São Paulo: Elsevier; 2010.
22. Tomlinson, LM. Patient and practitioner literacy and women's health: A global view from the closing decade 1990-2000. Ethn Dis 2003; 13: 248-58.
23. DeWalt DA, Berkman ND, Sheridan S, Lohr KN, Pignone MP. Literacy and health outcomes: A systematic review of the literature. J Gen Intern Med 2004; 19: 1228-39.
24. Oliveira CR, Rosa MS, Pinto AM, Veríssimo MT. Estudo do perfil de envelhecimento da população portuguesa. Lisbon: Ministério da Saúde; 2010. Available at: http://rihuc.huc.min-saude.pt/bitstream/10400.4/992/1/ACS%20EPEPP%20LIVRO.pdf Accessed at: 2016-11-04.
25. Kugler C, Maeding I, Russell CL. Non-adherence in patients on chronic haemodialysis: an international comparison study. J Nehprol 2011; 24: 355-75.
26. Araújo S, Lemes HP, Cunha DA, Queiroz VS, Nascimento DD, Ferreira Filho SR. Cardiac morphology and function in patients with and without residual diuresis on haemodialysis. Braz J Nephrol 2011; 33: 74-81.
27. Welch JL, Perkins SM, Johnson CS, Kraus MA. Patterns of interdialytic weight gain during the first year of haemodialysis. Nephrol Nurs J 2006; 33: 493-9.
28. Clark-Cutaia, RD, Ren D, Hoffman LA, Burke LE, Sevick MA. Adherence to haemodialysis dietary sodium recommendations: influence of patient characteristics, self-efficacy, and perceived barriers. J Ren Nutr 2014; 24: 92-9