

## SOCIODEMOGRAPHIC AND CLINICAL ASPECTS RELATED TO THE QUALITY OF LIFE OF HEMODIALYSIS PATIENTS

### ASPECTOS SOCIODEMOGRÁFICOS E CLÍNICOS RELACIONADOS À QUALIDADE DE VIDA DE PACIENTES EM HEMODIÁLISE

### ASPECTOS SOCIODEMOGRÁFICOS Y CLÍNICOS RELACIONADOS CON LA CALIDAD DE VIDA DE PACIENTES EN HEMODIÁLISIS

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Submitted on: 2017/06/06      Approved on: 2018/01/24

## ABSTRACT

**Objective:** To identify sociodemographic and clinical aspects associated with the quality of life of patients on hemodialysis. **Method:** A cross-sectional study was carried out with 200 individuals during the first semester of 2015. We used a structured anamnesis and physical examination to obtain the variables of interest, as well as the SF-36 instrument to evaluate the domains of quality of life. Fisher's exact Chi-square and Mann-Whitney U tests were used to analyze the statistical association between variables, considering p.

**Keywords:** Renal Insufficiency, Chronic; Renal Dialysis; Quality of Life.

## RESUMO

**Objetivo:** identificar os aspectos sociodemográficos e clínicos associados à qualidade de vida de pacientes em hemodiálise. **Método:** estudo transversal realizado com 200 indivíduos durante o primeiro semestre de 2015. Utilizou-se roteiro estruturado de anamnese e exame físico para obtenção das variáveis de interesse, além do instrumento SF-36 para avaliar os domínios da qualidade de vida. Fez-se uso de testes de qui-quadrado, exato de Fisher e U de Mann-Whitney para analisar associação estatística entre as variáveis, considerando-se p valor.

**Palavras-chave:** Insuficiência Renal Crônica; Diálise Renal; Qualidade de Vida.

## RESUMEN

**Objetivo:** identificar los aspectos sociodemográficos y clínicos asociados con la calidad de vida de pacientes en hemodiálisis. **Método:** estudio transversal, realizado con 200 individuos durante el primer semestre de 2015. Se utilizó un itinerario estructurado de anamnesis y un examen físico para la obtención de las variables de interés, además del instrumento SF-36 para evaluar los dominios de la calidad de vida. Se realizaron pruebas Chi-cuadrado, exacto de Fisher y U de Mann-Whitney para analizar la asociación estadística entre las variables, considerando el valor p.

**Palabras clave:** Insuficiencia Renal Crónica; Diálisis Renal; Calidad de Vida.

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#### How to cite this article:

Nogueira ILA, Tinôco JDS, Paiva MGMN, Trindade AOP, Lira ALBC, Enders BC. Sociodemographic and clinical aspects related to the quality of life of hemodialysis patients. REME – Rev Min Enferm. 2018[cited \_\_\_\_ \_\_\_\_];22:e-1080. Available from: \_\_\_\_ DOI: 10.5935/1415-2762.20180010

## INTRODUCTION

Chronic kidney disease (CKD) affects the functioning of various body structures, involving renal damage and progressive and irreversible loss of function. The high levels of prevalence and incidence throughout the world highlight the need for investigations that promote positive results for the chronicity of the disease.<sup>1</sup>

At the advanced stage of CKD, the kidneys are no longer able to maintain normal function, requiring renal replacement therapies (RRT).<sup>2</sup> The main RRT is hemodialysis (HD). In the United States, there was an increase in individuals with CKD in HD, from 113,944 cases in 2013 to 123,474 cases in 2015.<sup>3</sup>

The global scenario of progressive disease increase and the need for treatment raises relevant concerns. Hemodialysis prolongs the life of the individual in front of the incapacity of the kidneys. However, several consequences are experienced when not completely replacing the organ. Chronicity and the effects of illness and treatment greatly affect the performance of activities of daily living and present a serious impairment in patients' quality of life.<sup>1</sup>

Physical, sexual, psychological, family and social limitations are the main affected the lifestyle of these patients. These patients express negative feelings, such as fear, anguish, insecurity, panic, depression and discouragement.<sup>4</sup> The negative limitations and feelings alter the quality of life of chronic kidney patients on hemodialysis.

Quality of life (QOL) is defined as the individual's perception of their position in life in the context of the culture and value systems in which they are exposed and of their goals, expectations, standards, and concerns.<sup>5</sup>

Therefore, the relevance of evaluating the QOL of the renal patients in hemodialysis is highlighted, as regards the impact of the limitations caused by the dialysis treatment in the daily life of these individuals. Thus, generic and specific instruments can be used, providing accurate and reliable data on these changes<sup>1</sup>

However, there is generic evidence when analyzing the changes in the QOL of these individuals using predetermined parameters. Thus, it is imperative to insert other variables to reach reliable responses to the reality of this population, since each individual is involved in a specific context such as social or clinical, emerging the need for studies that include changes in the QOL from such aspects.<sup>6,7</sup>

Attention to the aspects in which they are inserted, their chronic health condition, their family, and social relationships, becomes fundamental for the provision of safe and quality care. In this sense, healthcare professionals should understand the aspects involved in care as a purposive, systematic and analytical interaction, which provides important meanings to the actual conditions of the hemodialysis patient.<sup>8</sup>

Thus, it is questioned: what sociodemographic and clinical aspects can influence the quality of life of patients on hemodialysis? To answer this question, this study aimed to identify the sociodemographic and clinical aspects associated with the quality of life of hemodialysis patients in the contexts observed.

## METHODS

This is a cross-sectional study with a population of 300 patients submitted to hemodialysis at a reference clinic in a city in Northeast Brazil. For the sample calculation, the following criteria were used: 95% confidence level ( $Z\alpha = 1.96$ ), the conjectural sensitivity of the most important indicators of 85% and half of the length of the constructed confidence intervals of 14%. Thus, the sample resulted in 194 individuals, being rounded to 200.

The inclusion criteria were patients aged 18 years old or more and undergoing hemodialysis treatment in the referred dialysis unit. The exclusion criteria were patients with verbal communication difficulties that hinder to collect data and patients disoriented in time, space and autopsychic. Patients were recruited for convenience consecutively as they arrived for the hemodialysis procedure.

For the data collection, an instrument was developed containing sociodemographic and clinical elements. The instrument was submitted to the validation of appearance and content by four specialists in Nephrology, adding suggestions such as the order of the questions, favoring the data collection. The sociodemographic and clinical variables studied were age, gender, marital status, origin, religion, years of education, years with CKD and months in HD.

The SF-36 instrument was also used to measure the quality of life of the patients. The areas covered by this material were functional capacity, general health, limitation of physical aspects, vitality, pain, social aspects, limitation of emotional aspects and mental health.

Data were collected in the first half of 2015 by four researchers. Before starting this stage, training with a 40-hour workload was performed, to minimize possible information biases at the time of collection. In this training, the following contents were addressed: pathophysiology of chronic kidney disease, hemodialysis procedure, and the SF-36 instrument.

Therefore, the process of organizing the data in a worksheet in Microsoft Office Excel has succeeded. The variables: age, years of study, years with CKD and months in HD were treated as quantitative. The variables of gender, marital status, origin, and religion were categorized. Regarding the SF-36 instrument, the domains functional capacity, general health status, physical aspects limitation, vitality, pain, social aspects, limitation emotional aspects and mental health were calcu-

lated and categorized into altered and unchanged. Thus, the value of the quality of life was obtained, categorizing it as impaired or not impaired.<sup>9</sup>

Descriptive statistical analysis of SF-36 variables and sociodemographic and clinical data of the sample were performed. For this, the statistical software IBM SPSS Statistic 20.0 for Windows was used. The relative and absolute frequencies of the categorical variables were also calculated, as well as the central trend and numerical data dispersion measurements found to be normal using the Kolmogorov Smirnov test, with p-value <0.05.

The inferential statistics used were Chi-square and Fisher's exact tests to verify the statistical association between SF-36 variables and sociodemographic and clinical data. The Mann Whitney U test was applied to confer the association between the components and the numerical variables analyzed. A p-value <0.05 was considered statistically significant.

The study was approved by the research ethics committee of the institution responsible, under opinion number 387,837, and the Certificate of Presentation for Ethical Appreciation (CAAE): 18486413.0.0000.5537.

## RESULTS

The results showed patients with a mean age of 54.1 years old, predominantly female (51.0%), with a partner (53.5%) and practitioners of some religion (86.5%). They were born in cities in the interior of the state (84.0%) and most of them (87.5%) were retirees or pensioners, with an average family income of two minimum wages.

Regarding clinical data, CKD time averaged eight years and the time of hemodialysis indicated an average of 48 months. There was a predominance of arteriovenous fistula (75.0%) as the main access to the treatment.

Impaired quality of life was present in 31.5% of the patients investigated. The SF-36 domains were functional capacity (55.0%), general health status (46.0%), physical aspects limitation (41.5%), vitality (36.5%), pain (33.5%), social aspects (21.5%), emotional aspects (19.0%) and mental health (15.0%).

The associations identified between the domains of quality of life and the sociodemographic and clinical aspects related to these patients are shown below (Table 1).

The variables with a statistically significant association were functional capacity with age (0.001) and gender (0.002); limiting physical aspects with income (0.013) and gender (0.013); pain with gender (0.003) and years with CKD (0.021); social aspects with income (0.019) and gender (0.015); limitations emotional aspects with gender (0.043); and impaired quality of life with gender (0.001).

## DISCUSSION

The QOL of the chronic kidney patient undergoing hemodialysis is affected by physical, socioeconomic, cultural, cognitive and psychological factors.<sup>10</sup> This study identified the impaired quality of life in 31.5% of investigated hemodialysis patients, is associated with the variable of gender.

Changes in quality of life negatively affect patients with CKD, reflecting in all aspects related to human living conditions. When it comes to women, because of their social role in the family, changes in quality of life become more evident by the limitations imposed by the disease and treatment, culminating in the impossibility of fulfilling their social responsibilities.<sup>11</sup>

The literature<sup>1</sup> indicates that kidney patients submitted to hemodialysis have lower QOL indexes than those in the general population and even lower QOL than renal transplant patients. They also affirm that the most deteriorated dimensions are physical and mental.<sup>1</sup>

Table 1 - The statistical association between the domains of quality of life and sociodemographic and clinical aspects of patients undergoing hemodialysis. Natal, 2016

SF-36 Domains	Age	Years of study	Income	Gender	Marital status	Origin	Religion	Years with CKD	Months in HD
Functional capacity	0.001 <sup>3</sup>	0.264 <sup>3</sup>	0.925 <sup>3</sup>	0.002 <sup>1</sup>	0.142 <sup>1</sup>	0.332 <sup>1</sup>	0.724 <sup>1</sup>	0.929 <sup>3</sup>	0.270 <sup>3</sup>
General health status	0.510 <sup>3</sup>	0.253 <sup>3</sup>	0.904 <sup>3</sup>	0.382 <sup>1</sup>	0.360 <sup>1</sup>	0.446 <sup>1</sup>	0.862 <sup>1</sup>	0.652 <sup>3</sup>	0.755 <sup>3</sup>
Physical aspects limitation	0.894 <sup>3</sup>	0.237 <sup>3</sup>	0.013 <sup>3</sup>	0.013 <sup>1</sup>	0.864 <sup>1</sup>	0.229 <sup>1</sup>	0.613 <sup>1</sup>	0.721 <sup>3</sup>	0.713 <sup>3</sup>
Vitality	0.200 <sup>3</sup>	0.309 <sup>3</sup>	0.801 <sup>3</sup>	0.416 <sup>1</sup>	0.386 <sup>1</sup>	0.901 <sup>1</sup>	0.950 <sup>1</sup>	0.837 <sup>3</sup>	0.533 <sup>3</sup>
Ache	0.388 <sup>3</sup>	0.821 <sup>3</sup>	0.253 <sup>3</sup>	0.003 <sup>1</sup>	0.963 <sup>1</sup>	0.251 <sup>1</sup>	0.675 <sup>1</sup>	0.021 <sup>3</sup>	0.266 <sup>3</sup>
Social aspects	0.790 <sup>3</sup>	0.191 <sup>3</sup>	0.019 <sup>3</sup>	0.015 <sup>1</sup>	0.729 <sup>1</sup>	0.674 <sup>1</sup>	0.363 <sup>1</sup>	0.421 <sup>3</sup>	0.934 <sup>3</sup>
Limitations of emotional aspects	0.137 <sup>3</sup>	0.505 <sup>3</sup>	0.122 <sup>3</sup>	0.043 <sup>1</sup>	0.809 <sup>1</sup>	0.370 <sup>1</sup>	0.099 <sup>1</sup>	0.504 <sup>3</sup>	0.287 <sup>3</sup>
Mental health	0.375 <sup>3</sup>	0.221 <sup>3</sup>	0.283 <sup>3</sup>	0.143 <sup>1</sup>	0.706 <sup>1</sup>	0.634 <sup>1</sup>	1.000 <sup>2</sup>	0.763 <sup>3</sup>	0.319 <sup>3</sup>
Impaired quality of life	0.940 <sup>3</sup>	0.452 <sup>3</sup>	0.051 <sup>3</sup>	0.001 <sup>1</sup>	0.830 <sup>1</sup>	0.765 <sup>1</sup>	0.503 <sup>1</sup>	0.736 <sup>3</sup>	0.834 <sup>3</sup>

Note: <sup>1</sup>Chi-square test; <sup>2</sup>Fisher's exact test; <sup>3</sup>Mann-Whitney U test.

In this study, it was verified that functional capacity is the domain of quality of life with the highest injury rates in hemodialysis patients, which is confirmed by the literature<sup>12</sup> when ratifying the impairment of this capacity. The impairment of functional capacity refers to physical limitations related to the daily life activities of the interviewee.<sup>9</sup>

The functional capacity in these patients was significantly associated with the variables age and gender. Women have lower levels of physical functioning than men in adulthood and under physiological conditions. Evidence shows that physical functioning begins to decline at a faster rate among women than middle-aged men onwards. The timing of the onset of the fastest decline in functioning in women coincides with the transition to menopause.<sup>13</sup>

On the other hand, authors<sup>13</sup> reinforce the findings of this study in which the female predominance and the proximity to the elderly age revealed in the patients can influence the changes in their functional capacity, with consequences for their quality of life.

The limitations of performance resulting from physical aspects were present in the investigation. This domain was associated with the sociodemographic characteristics of income and gender. Patients with chronic kidney disease are characterized by low levels of physical activity. The observational study revealed that physical inactivity is associated with increased mortality in these patients, leading to a reduction in functional status, especially during the period preceding and following the onset of dialysis. It is caused by reduced muscle strength and increased cardiovascular risk in combination with the high prevalence of comorbidities.<sup>14</sup>

Regarding income, it was found that the lower middle class had a higher level of physical activity abandonment than the middle and upper classes, corroborating the results of another study.<sup>15</sup> The relationship with gender is highlighted in the literature, since the inherent physical conditions of the female limit the development of such a domain, reducing their QOL.<sup>13</sup> Thus, the low income and the female predominance of the researched population may influence the physical function of this patient, with serious consequences for activities of daily life.

The domain of QOL pain was changed according to the results of this study, associating with gender and years of CKD. Although often underestimated by health professionals, the pain has been recognized as an important concern for dialysis patients. The literature<sup>16</sup> shows that more than one-fifth of the hemodialysis population refers to pain as a problematic issue, noting that 50% of HD patients reported chronic pain.<sup>16</sup>

Perception of pain may be associated with increased stress or decreased QOL, as well as high levels of proinflammatory cytokines in patients with chronic kidney disease. Thus, the prolonged years of CKD further aggravate such dominance. Also,

pain may also be associated with increased disability or depression, both associated with mortality in this patient.<sup>16</sup>

The literature<sup>11</sup> reports that women have a higher threshold than men for the various types of pain. Most population-based studies have found significantly higher pain scores in women, together with the negative effect of psychological stress.<sup>17</sup>

Limitations related to social aspects were changed in the patient investigated and they were associated with income and gender. In the CKD, the weight of the kidney disease for the patient, the work situation, and the social interaction are the most affected areas.<sup>18</sup>

Ratifying the association between income and social aspects, researchers<sup>18</sup> also found that the inability to work together with low socioeconomic status and the high cost of treatment may have an impact on the patient's psychological state, impairing the quality of social interaction. Thus, attention to the social conditions of the patient on hemodialysis becomes a fundamental condition to obtain positive adherence to the treatment.

The limitations related to the emotional aspects of a domain capable of affecting the quality of life are impaired in this population, presenting relation with the gender. This study asserts that women may be more prone to emotional distress related to their physical well-being.<sup>19</sup> Thus, the need for emotional support for individuals undergoing chronic treatment, especially in the females is minimized.

In view of the associations between the SF-36 domains and the sociodemographic and clinical contexts in which the hemodialysis patients are found, the changes experienced in the evolution of the disease and the limitations imposed by the treatment are perceptible.

It is necessary to improve the indicated care for the QOL of these individuals, with emphasis on the work of the multi-professional team. The direction of the health actions to the studied problem will reach positive results in the quality of life of the chronic kidney patient on hemodialysis.

## CONCLUSION

It was concluded that the quality of life in the chronic kidney patient submitted to hemodialysis may be influenced by sociodemographic and clinical aspects.

The identification of the changes in the quality of life and its relation with the sociodemographic and clinical aspects of the patients highlight the relevance of a care directing to the real needs of these patients, contributing to the prevention and promotion of health.

The limitation of this study is because it was performed only with the patients doing hemodialysis, not including patients in other renal substitution therapies. Thus, it is suggested to carry out new studies involving longitudinal delineations

to prove the identified associations and the involvement of all types of renal replacement therapies.

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