

Factors related to impaired comfort in chronic kidney disease patients on hemodialysis

Fatores relacionados ao conforto prejudicado em pacientes renais crônicos hemodialíticos
Factores relacionados con la comodidad perjudicada en pacientes renales crónicos hemodialíticos

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ABSTRACT

Objective: to analyze the factors related to the impaired comfort of chronic kidney diseases (CKD) patients on hemodialysis. **Method:** this is a cross-sectional study with 80 patients undergoing hemodialysis in a renal replacement therapy unit through interviews using two instruments, one for clinical and sociodemographic characteristics and the General Comfort Questionnaire, during the hemodialysis session. Mann-Whitney tests and the logistic regression model were used for data analysis. **Results:** the study found that being younger ($p=0.045$); being married ($p=0.05$); and absence of impaired physical mobility ($p=0.007$) were contributing factors for greater comfort in CKD patients on hemodialysis. Thus, when establishing the odds ratio, it was possible to observe that being 55 years of age or older, being single and having impaired physical mobility represents a 45.7% chance of developing this diagnosis. **Conclusions:** sociodemographic and clinical variables contribute to the study outcome, demanding attention during the planning of nursing interventions.

Descriptors: Patient Comfort; Nursing Diagnosis; Kidney Diseases; Renal Dialysis; Risk Factors.

RESUMO

Objetivo: analisar os fatores relacionados ao conforto prejudicado do paciente renal crônico hemodialítico. **Método:** estudo transversal com 80 pacientes sob tratamento hemodialítico em unidade de terapia renal substitutiva por meio de entrevista com aplicação de dois instrumentos, características sociodemográficas clínicas de saúde e Escala de Conforto Geral, durante sessão de hemodiálise. Utilizou-se os testes de Mann-Whitney e modelo de regressão logística para análise dos dados. **Resultados:** observou-se que ser mais jovem ($p=0,045$); estar casado ($p=0,05$); e ausência de mobilidade física prejudicada ($p=0,007$) foram fatores contribuintes para maior conforto nos pacientes renais crônicos hemodialíticos. Nesse sentido, ao estabelecer a *odds ratio*, foi possível observar que ter idade maior ou igual a 55 anos, estar solteiro e apresentar mobilidade física prejudicada representa 45,7% de chance de desenvolver esse diagnóstico. **Conclusões:** variáveis sociodemográficas e clínicas contribuem para o desfecho em estudo, requerendo atenção diante do planejamento das intervenções de enfermagem.

Descritores: Conforto do Paciente; Diagnóstico de Enfermagem; Nefropatias; Diálise Renal; Fatores de Risco.

RESUMEN

Objetivo: valorar los factores relacionados con la comodidad perjudicada del paciente renal crónico hemodialítico. **Método:** estudio transversal en el cual se entrevistaron 80 pacientes bajo tratamiento hemodialítico en una unidad de terapia renal sustitutiva, siendo aplicados dos instrumentos, las características sociodemográficas clínicas de salud y la Escala Comfort General, durante la sesión de hemodiálisis. Se utilizaron el test de Mann-Whitney y el modelo de regresión logística en el análisis de datos. **Resultados:** se observó que los factores que contribuyeron a una mayor sensación de comodidad en los pacientes renales crónicos hemodialíticos fueron: ser más joven ($p=0,045$); estar casado ($p=0,05$); y no tener la movilidad física perjudicada ($p=0,007$). En este sentido, al establecer la *odds ratio*, se observó que tener edad igual a 55 años o más, estar soltero y presentar movilidad física perjudicada representa un 45,7% de probabilidad de desarrollar este diagnóstico. **Conclusiones:** las variables sociodemográficas y clínicas contribuyen al desenlace en estudio, requiriendo atención ante la planificación de las intervenciones de enfermería.

Descriptorios: Comodidad del Paciente; Diagnóstico de Enfermería; Nefropatías; Diálisis Renal; Factores de Riesgo.

INTRODUCTION

Patients with chronic kidney diseases (CKD) undergoing hemodialysis suffer changes in their daily life, becoming dependent on continuous therapy that, in addition to its periodical procedures, makes the patient live with uncomfortable symptoms such as nausea, vomiting, hypotension and fatigue, as well as external environmental factors such as the temperature of hemodialysis room, which may lead to decreased comfort⁽¹⁾.

A recent study highlights that other manifestations of impaired comfort can be identified in these patients, and among them, the following stand out: changes in the sleep pattern, anxiety, crying, discomfort and dissatisfaction with the situation, inability to relax, restlessness, irritability, fear, pruritus, heat sensation, discomfort sensation, hunger sensation, cold sensation, symptoms of suffering and sighs⁽²⁾.

Thus, from these indicators or proven responses, CKD patients on hemodialysis are susceptible to present impaired comfort, which is defined as the perception of lack of relief, tranquility and transcendence in the physical, psycho-spiritual, environmental, cultural and physical and/or social dimensions. This response is thus a desirable holistic state to be achieved via the satisfaction of vital needs, to which nurses can respond by providing holistic interventions that complement medical therapy⁽²⁾.

We must emphasize that the role of nurses is to mediate aspects that have influence on the establishment of the patient's health and the development of activities that improve their comfort⁽³⁾. Therefore, providing a quiet, comfortable and safe environment during hemodialysis sessions is fundamental⁽¹⁾.

The early identification of the nursing diagnosis of impaired comfort becomes essential in its most diverse aspects and clinical contexts, especially in hemodialysis clinics. This diagnosis was introduced in the North American Nursing Diagnosis Association International (NANDA-I), Inc. in 2008 and underwent a validation process in 2010 and in 2017⁽⁴⁾.

In its latest edition, NANDA-I stressed that this nursing diagnoses needs priority updates, because if such updates are not performed, the diagnosis will be removed from the next edition (2021-2023). Thus, the Diagnosis Development Committee expects the contribution of researchers who use this taxonomy to increase the robustness of the diagnoses considered as targets, thus favoring the evolution of nursing knowledge as a science, discipline and profession⁽⁴⁾. Furthermore, the Committee encourages the construction of evidence of nursing diagnosis, in general, in specific populations and in specific contexts of care.

Thus, from the recent restructuring of the related factors, nurses and nephrologists must present evidence of the main factors that interfere when providing nursing care. Evidence indicates that both the socioeconomic and clinical situation in which these individuals are inserted favors a negative outcome in nursing care.

Considering this analysis, we consider that establishing the relationship between socioeconomic and clinical variables with the presence of the impaired comfort nursing diagnosis is appropriate. Studies that correlate impaired comfort and socioeconomic and clinical data in CKD patients on hemodialysis are still scarce and, the health care practice must be focused on the physical, psychosocial, socio-cultural and environmental needs of patients to ensure their comfort.

Therefore, to understand the factors that interfere in the patients' comfort during therapy is fundamental for the planning of nursing actions for renal hemodialysis patients.

OBJECTIVE

To analyze the factors related to impaired comfort in CKD patients on hemodialysis.

METHOD

Ethical aspects

The study was approved by the Research Ethics Committee of Universidade Federal do Ceará, under opinion no. 1.204.922. Participants provided formal consent by signing an Informed Consent Form.

Study design, site and period

This is a quantitative and cross-sectional study performed in a renal replacement therapy unit in the state of Paraíba, Brazil, from September to October 2015. The renal therapy service has two white rooms (room 1 and room 2), and a yellow room for patients infected with the hepatitis B virus.

Sample

The total population of this clinic were 89 patients registered and being followed-up in the unit. This study adopted a 99% confidence level, 50% prevalence of chance of the outcome occurring in the studied population and 5% sampling error. Applying the corrected formula for the population found in this study, 80 participants in total were obtained.

Thus, the inclusion criteria adopted were: being over 18 years old, being enrolled and accompanied by the nephrological unit, and presenting cognitive ability to respond to the instrument. The following exclusion criteria were adopted: presenting comprehension deficit for filling the instrument and clinical hemodynamically unstable condition. Nine patients were excluded: one due to hearing impairment; three were hemodynamically unstable; two refused; and three patients who presented with cognitive difficulty when responding to the instrument.

Data collection

Data collection was performed through interviews during the hemodialysis sessions by previously trained researchers, using previously defined conceptual and operational definitions. Two instruments were applied during data collection: one for sociodemographic characteristics/clinical health conditions and the Brazilian version of the General Comfort Questionnaire. Both instruments were applied in a single moment, with a duration of 30 minutes per patient.

Data collected in the sociodemographic and clinical questionnaire were: sex, age, skin color, marital and labor status, personal income, schooling, religion, main means of transportation, time of travel from home to the clinic, self-perception of health, physical mobility, comorbidities, access route for hemodialysis and time

under hemodialysis in years. This instrument was specifically developed for data collection in this study.

The Brazilian version of the General Comfort Questionnaire (GCQ) contains 48 items that assess the comfort of patients in any clinical condition in the physical, social, psycho-spiritual and environmental dimensions. The GCQ is a multidimensional instrument used to identify the different needs of patients. Scores range from 48 (very little comfort) to 192 (excellent comfort). Each item in the questionnaire includes a four-point Likert-type scale, in which one means that the patient completely disagrees and four that the patient completely agrees with the statement of each question⁽⁵⁾.

The GCQ presents three basic human needs states: relief, tranquility and transcendence, which emerge from stressful situations in health care in the physical, sociocultural, psycho-spiritual and environmental contexts included in the 48 questions found in the measurement instrument. Cronbach's alpha reliability was shown to be 0.80, ranging from 0.791 to 0.818 among the 48 items⁽⁵⁾.

The QCG was applied in full in this study to know the main comfort needs of CKD patients on hemodialysis during the hemodialysis process, and to establish the presence of the nursing diagnosis – impaired comfort – considering 152 points in the scale as the cutoff point.

Data analysis and statistics

Data were analyzed by descriptive statistics using the software Statistical Package for the Social Sciences (SPSS) version 20.0. Position (mean, minimum and maximum) and dispersion (standard deviation) measurements were calculated. Mann-Whitney's test was used to verify the difference of mean scores between the groups of sociodemographic and clinical variables of patients, adopting a 5% significance level.

The odds ratio for the presence of impaired comfort was calculated from the variables that presented statistical significance, and a step-wise logistic regression was conducted to identify factors related to impaired comfort that influence the comfort needs of CKD patients on hemodialysis. Wald's test was applied to verify the significance of the coefficients that integrated the logistic equation; an Omnibus test was used to verify the significance of the developed model; Hosmer-Lemeshow's test was applied to evaluate the difference between observed and expected frequencies; and Nagelkerke's R² was used to estimate the determination capacity of the model.

RESULTS

Most participants were male (56.3%), black (67.5%), in a stable relationship (61.3%), presented mean study time of up to six years (62.5%) and were retired (72.5%). Monthly income was \$241.86 (87.5%), most were Catholic (90%), presented poor self-perception of health (65%), used the transportation offered by the town hall to go to the clinic (77.5%), and take over one hour to travel from their residence to the clinic (60%); it must be noted that the time interval between leaving home and arriving at the clinic presented great variation, ranging from two minutes to three hours. Age ranged from 19 to 89 years, with 54.32 (±17.16) years as the mean.

Regarding clinical data, systemic arterial hypertension (36%) and systemic arterial hypertension associated with diabetes mellitus (12%) were the most common, dialysis via the arteriovenous

fistula (AVF) (75%) was the most common, and most patients were undergoing dialysis for at least three years (65%). The mean time of dialysis therapy was 3.94 years, with minimum and maximum time of eight months and 20 years, respectively.

Regarding the categorical analysis on the comfort level, higher levels of comfort were reported in males (153.48±12.45), in the age range between 19 and 54 years (154.11±11.66), white (153.03±12.40), married (153.63±12.47), with a monthly income of \$ 241.86 (151.7±12.82), Catholic (151.94±12.86), who took more than 70 minutes to go to the unit (153.34±12.21), who underwent dialysis via the AVF (151.95±11.81), who presented adequate physical mobility (153.34±12.52), considered their current health status as good or very good (154.71±12.37), and undergoing therapy for four or more years (152.85±12.45). However, when establishing the mean differences between the subvariables that presented statistical significance with the level of comfort, the following results were obtained: age between 19 and 54 years (p=0.045); being married (p=0.05); and absence of impaired physical mobility (p=0.007) (Table 1).

Table 1 – Difference between means of comfort according to the subvariables of patients of a Renal Replacement Therapy Unit (N=80), Brazil, 2015

Variable	Mean	Standard deviation	P
Gender			0.097
Male	153.48	±12.45	
Female	149.94	±12.58	
Age			0.045
19 to 54 years	154.11	±11.66	
≥55 years	148.94	±13.19	
Skin color			0.5894
White	153.03	±12.40	
Black or brown	151.00	±12.76	
Religion			0.352
Catholics	151.94	±12.86	
Non-Catholics	149.12	±10.24	
Marital status			0.050
Single	148.54	±12.40	
Married	153.63	±12.47	
Income			0.743
≤241.86 dollars monthly	151.7	±12.82	
≥241.86 dollars monthly	151.4	±11.59	
Labor status			0.440
Working	149.36	±14.99	
Not working	152.53	±11.59	
Commute duration			0.293
≤70 min.	150.54	±12.86	
71 min. or more	153.34	±12.21	
Impaired physical mobility			0.007
Present	144.62	±11.82	
Absent	153.34	±12.52	
Access route for hemodialysis			0.907
AVF	151.95	±11.81	
Catheter	150.80	±15.03	
Health condition			0.858
Good/Very good	154.71	±12.37	
Very bad/Bad/Nor good, nor bad	153.45	±12.21	
Therapy time			0.575
≤3 years	151.05	±12.75	
4 years or more	152.85	±12.45	

Note: Mann-Whitney's test.

The overall mean of the questionnaire was 151.66 (± 12.60), with 116.00 and 172.00 as the minimum and maximum values, respectively. The study adopted the 152.00 mean as the cutoff point to infer the presence of impaired comfort. Thus, it was found that impaired comfort in chronic renal patients increases up to three times among ages greater than or equal to 55 years (OR=3.84), two times for single patients (OR=2.72), and up to four times among patients with impaired physical mobility (OR=4.12) (Table 2).

Table 2 – Association between socioeconomic and clinical variables with impaired comfort in patients of a Renal Replacement Therapy Unit (N=80), Brazil, 2015

Variables	Impaired Comfort		P	OR
	Yes	No		
Gender				
Female	18(48.6)	17(39.5)	0.553	1.44(0.59 -3.52)
Male	19(51.4)	26(60.5)		
Age				
19 to 54 years	13(35.1%)	29(67.4%)	0.007	1.00
≥ 55 years	24(64.9%)	14(32.6%)		
Skin color				
White	12(32.4%)	14(32.6%)	0.990	1.00
Black or brown	25(67.6%)	29(67.4%)		
Religion				
Catholics	34(91.9%)	38(88.4%)	0.719	1.00
Non-Catholics	3(8.1%)	5(11.6%)		
Marital status				
Single	19(51.4%)	12(27.9%)	0.032	2.72 (1.07 – 6.89)
Married	18(48.6%)	31(72.1%)		
Income				
≤ 1 minimum wage	25(67.6%)	28(65.1%)	0.817	1.16 (0.44- 2.83)
≥ 1.1 minimum wages	12(32.4%)	15(34.9%)		
Labor status				
Working	10(27%)	12(27.9%)	0.930	1.04 (0.39 -2.79)
Not working	27(73%)	31(72.1%)		
Commute duration				
≤ 70 min.	23(62.2%)	25(58.1%)	0.714	1.18 (0.48- 2.90)
71 min. or more	14(37.8%)	18(41.9%)		
Health condition				
Very bad/Bad/Nor good, nor bad	27(73%)	25(58.1%)	0.165	1.94(0.75 – 5.00)
Good/Very good	10(27%)	18(41.9%)		
Impaired physical mobility				
Present	11(29.7%)	4(9.3%)	0.044	4.12(1.18 -14.35)
Absent	26(70.3%)	39(90.7%)		
Access route for hemodialysis				
AVF	28(75.7%)	32(74.4%)	0.897	1.00
Catheter	9(24.3%)	11(25.6%)		
Therapy time				
≤ 3 years	25(67.6%)	28(65.1%)	0.817	1.16(0.44-2.83)
4 years or more	12(32.4%)	15(34.9%)		

Note: OR: Odds Ratio

Table 3 – Logistic regression of factors related to impaired comfort of chronic renal patients, Brazil, 2015

Variables	B	OR	X ²	gl	P	95%CI
Age	2.04	3.72	6.14	1	0.013	1.42 – 9.51
Marital status	0.91	2.68	5.67	1	0.002	1.04 – 6.53
Impaired physical mobility	1.77	4.05	18.64	1	0.001	1.09 – 12.79
Constant	-1.35	0.37	12.15	1	0.001	
Omnibus coefficient test			Nagelkerke's R²			
Stage			40.21	3	<0.001	0.457
Block			40.21	3	<0.001	
Model			40.21	3	<0.001	
Hosmer-Leshmshow test			3.52	3	0.784	

Note: P = Statistical significance for Wald's chi-square test; OR: Odds Ratio; 95%CI: confidence interval.

Impaired physical mobility was present in 15 (18.75%) patients and associated with impaired comfort in 11 (73.33%) of these. Thus, it is inferred that the odds ratio for developing impaired comfort is four times higher in those with impaired physical mobility.

As shown in Table 3, the logistic model presents a set of variables divided into two blocks. The first one includes two sociodemographic variables of the patients and one related to the clinical conditions of the sample, considering that all presented statistical significance in the previous analyses: age, marital status and impaired physical mobility. These variables are related to a significant increase in the risk of having the diagnosis, so age presents OR=3.72, marital status OR=2.68 and impaired physical mobility OR=4.05 (Table 3).

The applied logistic model showed statistical significance according to the Omnibus test ($p < 0.001$), which allowed the identification of the presence of the studied nursing diagnosis from the three variables shown in Table 3.

Moreover, the coefficients of each factor included in the model were significant from Wald's chi-square test ($p < 0.05$). The determination coefficient of the model (Nagelkerke's R²) presented a 0.457 value, indicating that these related factors included in the regression model explain 45.7% of the occurrence of impaired comfort. Finally, the observed and expected frequencies in the final model had no significant differences according to the Hosmer-Lemeslow test (0.784), showing the appropriateness of the adjustment (Table 3).

DISCUSSION

This research showed that patients aged 55 years or older had a lower level of comfort when compared to younger patients ($p = 0.045$), as well as having almost four times the risk of presenting the impaired comfort diagnosis. Aging as a conditioning factor of comfort may be justified because older renal patients on hemodialysis therapy tend to have a higher degree of physical and cognitive impairment or may have

lower expectations when compared to younger individuals. The analysis of the risk factor of the age variable associated with impaired comfort must be understood considering the aspects that are involved in the aging process like polypharmacy, multiple comorbidities, the constant use of health services and the high rate of hospitalizations when compared to younger populations⁽⁶⁾.

Furthermore, aging leads to a continuous and progressive decrease in the body's ability to maintain its homeostatic balance. Thus, older adults commonly face gradual decreases in their functional capacity, which may limit them in performing the activities of daily living⁽⁷⁾.

Interventions that stimulate the functional capacity and the autonomy to perform the activities of daily living are thus required to ensure the comfort of older patients during hemodialysis therapy. These assessments have been considered fundamental for CKD patients⁽⁸⁾.

The physiological impairment of balance maintenance also cause older adults to be more prone to complications during hemodialysis therapy. A study correlated complications that occur during hemodialysis therapy with sociodemographic characteristics and found that the incidence of hypotension, arrhythmia, headache and sweating were statistically associated with the variable age⁽⁹⁾. These complications directly compromise the patient's physical comfort.

Moreover, psychological and emotional worries involved in therapy also contribute to comfort impairments. A qualitative study on the phenomenological analysis of the experiences of older patients undergoing hemodialysis observed that this population experiences negative emotional loads related to CKD and hemodialysis due to feelings of fear and uncertainty, since they have a shorter life expectancy and cannot adequately plan their lives⁽¹⁰⁾.

Another significant finding was the relation between the marital status and the comfort level of patients on hemodialysis, in which married individuals presented greater comfort when compared to single individuals ($p=0.050$); with the latter being almost three times more likely to have impaired comfort when compared to married patients. A qualitative research on the perception of comfort in hemodialysis patients showed that the presence of a spouse, family and friends arouses positive effects. Patients claimed they were more comfortable with their partners, and family members are the most important elements in promoting comfort⁽³⁾.

The marital relationships of patients undergoing hemodialysis also provide a greater sense of comfort when they are cared for by their partners⁽¹¹⁾. Support given by family and spouse also enable greater adherence to therapy, since coping with the care routine becomes easier with support⁽¹²⁾, corroborating the results of the study that showed the existence of a significant relationship between social support and adherence to dietary and fluid restrictions, highlighting family support as the highest level of perceived support⁽¹³⁾.

The influence of the presence of the companion and family in the level of comfort is justified by the greater need for family support felt by the patient on hemodialysis, and the fact that CKD and hemodialysis can cause profound and widespread changes in the patient's routine such as requiring dietary and fluid restrictions that may limit his/her participation in different social groups and, consequently, reduce the pleasure of coexisting and engaging in relationships⁽¹⁴⁾.

Hemodialysis therapy also causes restrictions in work activities due to decreased mobility, physical strength, work rhythm and limitations of the use of the arm that has the fistula. For these patients, work means more than the mere need of income for survival, work is related to being able to dream, to have comfort and to feel useful⁽¹⁴⁾.

The association between comfort and the physical domain was observed in this study, when patients with impaired physical mobility presented lower comfort levels ($p=0.007$) and were four times more likely to develop a diagnosis of impaired comfort.

Impaired physical mobility mediated by musculoskeletal problems has a negative impact on the daily living of terminal chronic renal patients, being one of the main improvement objectives, not only to delay death but also to promote health, being an important result for patients with chronic diseases⁽¹⁵⁾.

All renal disease were found to have one or more musculoskeletal problems, and the most common were muscle cramps, myalgia and arthralgia, and that older patients presented lower physical function scores than younger patients⁽¹⁵⁾. Thus, physical function decreases and muscle quality is altered by the significant metabolic alterations caused by hemodialysis. Moreover, hemodialysis patients have compromised mobility, which is linked to a high risk of falls and can result in multiple complications⁽¹⁶⁾. Another aspect that may explain the impaired physical mobility in hemodialysis patients is the fatigue represented as weakness, lack of energy and feeling of exhaustion⁽¹⁷⁾.

Nursing must develop and test interventions to reduce the comfort impairment in these patients. For example, a randomized clinical trial tested the effectiveness of range of motion exercises for 15 min/day three times a week for two months in patients of a hemodialysis unit. After an eight-week program of intradialytic exercises, patients presented significant reduction in the levels of fatigue, serum and potassium phosphate, calcium, urea, creatinine, and a slight increase in the hemoglobin level. Systolic and diastolic blood pressure changed significantly in the experimental group ($p<0.05$). Therefore, a simplified physical exercise program can be considered a safe and effective intervention to be used by nursing in patients with renal disease undergoing hemodialysis to improve the effectiveness of the therapy and prevent long-term complications⁽¹⁸⁾.

Studies have confirmed that physical training in hemodialysis patients resulted in significant improvements in strength, locomotion capacity and physical aspects for this population⁽¹⁹⁾. Previous studies have also shown the positive effect of physical activities on postural balance in older adults⁽²⁰⁾.

Furthermore, other types of intervention are required, such as those that stimulate the development of physical activities in renal patients to improve not only their physical conditioning, but promote daily energy increase and improvement of depression⁽²¹⁾ and fatigue.

Considering this discussion, a clinical trial was conducted to show the effectiveness of back massage in hemodialysis patients, and showed that the mean comfort score increased significantly in the intervention group⁽²²⁾. A previous study also showed the positive effects of back massage for comfort⁽²³⁾. Likewise, other studies have reported that back massage relieves the effects of uncomfortable factors that limit mobility such as pain, nausea, itching, and muscle cramps⁽²⁴⁾.

Therefore, studies conducted within the nursing field are emerging with the intention of implementing interventions in hemodialysis patients to improve their comfort. Such interventions help patients feel that nurses are supporting, caring for and trying to alleviate their problems and improve their comfort. Moreover, better environmental conditions, more access to nurses and a sense of familiarity with the environment can provide greater levels of comfort for patients⁽³⁾.

The act of providing comfort must be understood as a complex action that involves more than physical comfort, it involves emotional manifestations and considers all dimensions of the human being while looking for measures to provide relief for the suffering. Comfort is provided in nursing care via interventions, since comfort is a factor of care and an attribution of nurses⁽²⁵⁾.

Nurses must reduce and modify some of the variables identified as impairers of comfort in hemodialysis patients to ensure comfort in its broadest understanding. Among such impairers we can consider physical mobility, which can be improved by the implementation of physical activities during sessions and with the guarantee of an environment adapted for patients with musculoskeletal difficulty in older age, as well as by trying to reestablish social and family ties that may have been lost.

Study limitations

The main limitation of this study is to have been performed in a single scenario, which hinders the generalization of data.

Thus, the information presented in this study must be carefully considered for other socioeconomic and cultural realities that have direct influence on the comfort of CKD patients on hemodialysis. Another limitation was observed regarding the comparative literature of studies applying the GCQ for this given care context and these patients.

Contributions to the field of Nursing

The study shall contribute to the scientific production of nursing since there is little literature on the aspects of comfort among CKD patients on hemodialysis. Such scientific production enables the understanding of factors that interfere on the level of comfort of patients with chronic renal diseases; furthermore, this study aids in the recognition that the evidence produced should favor the improvement of the taxonomy of NANDA-I. New studies that consider these related factors must be conducted to verify the relationship in other populations.

CONCLUSION

This study showed that social, demographic and clinical variables are associated with the comfort level of hemodialysis patients, namely: age, marital status and physical mobility. Such deeper understanding of the factors that affect the comfort level of these patients is useful for nurses to develop interventions that consider the contexts in which the patient is inserted.

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