

Musculoskeletal pain and resilience in a nephrology unit nursing professionals

Dor musculoesquelética e resiliência em profissionais de enfermagem de uma unidade de nefrologia

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ABSTRACT

BACKGROUND AND OBJECTIVES: Stress and experiences in nursing activities can cause physical and mental illness, making it important to monitor the health of these professionals. The aim of the study was to assess the frequency and intensity of musculoskeletal pain and the resilience of nursing professionals working in a nephrology unit.

METHODS: Cross-sectional, descriptive study, developed with nursing professionals who work in the nephrology unit of a general hospital. For data collection, a sociodemographic, labor and clinical questionnaire, a Nordic musculoskeletal symptom questionnaire, a numerical pain assessment scale and a resilience scale were used.

RESULTS: 15 nursing professionals aged between 31 and 40 years participated in the study. Pain intensity was moderate to high in different anatomical regions. The most affected body regions were shoulders, ankles, feet and the dorsal and lumbar region. 40% of participants showed moderate resilience and 33.4% high resilience. There was no association between resilience, sociodemographic and work variables and pain intensity.

CONCLUSION: The nursing team working in the nephrology unit deals with musculoskeletal pain in different anatomical areas and presents moderate to high resilience, which helps them to continue performing their functions.

Keywords: Hemodialysis, Musculoskeletal pain, Nursing.

RESUMO

JUSTIFICATIVA E OBJETIVOS: O estresse e as vivências na atividade da enfermagem podem provocar adoecimento físico e psíquico, o que torna importante monitorar a saúde destes profissionais. O objetivo deste estudo foi avaliar frequência e intensidade da dor musculoesquelética e a capacidade de resiliência de profissionais de enfermagem que atuam em uma unidade de nefrologia.

MÉTODOS: Estudo transversal, descritivo, desenvolvido com profissionais de enfermagem que atuam na unidade de nefrologia de um hospital geral. Para a coleta de dados, foram utilizados questionário sociodemográfico, laboral e clínico, Questionário Nórdico de Sintomas Osteomusculares, escala analógica visual para a avaliação da dor e Escala de Resiliência.

RESULTADOS: Participaram do estudo 15 profissionais de enfermagem com idade entre 31 e 40 anos. A intensidade da dor foi de moderada a alta em diferentes regiões anatômicas. As regiões corporais mais acometidas foram ombros, tornozelos, pés e região dorsal e lombar. 40% dos participantes apresentaram resiliência moderada e 33,4% resiliência alta. Não ocorreu associação entre resiliência, variáveis sociodemográficas, laborais e intensidade da dor.

CONCLUSÃO: A equipe de enfermagem que atua na Unidade Nefrológica sente dor musculoesquelética em diferentes regiões anatômicas e apresenta capacidade de resiliência de moderada a alta, o que auxilia na continuidade do desempenho de suas funções.

Descritores: Dor musculoesquelética, Enfermagem, Hemodiálise.

INTRODUCTION

In the health care network, professionals are exposed to occupational diseases, high levels of stress^{1,2} and several risks, including ergonomic and psychosocial, which may negatively affect health, productivity and relationships with other team members³.

The Brazilian Society of Nephrology indicates that about 850 million people worldwide have kidney disease⁴. Nursing care for patients with chronic renal failure has increased over the years due to high morbidity and mortality⁵. In order to provide effective care, besides clinical expertise, professionals must have the ability to deal with the patient's and family members' feelings, as well as their own emotions⁵.

This care, as a work process, may impact the life and health of these workers, because their environment presents situations, activities, and potential factors for getting sick. Musculoskeletal pain is a health problem and a challenge among nursing profes-

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sionals, because it's a disabling disorder that compromises quality of life, leads to absenteeism and reduces work performance⁶. Staff reduction, salary cuts, high number of hemodialysis patients and equipment handling are demands that negatively contribute to the health and quality of life of workers in nephrology units⁷. With the objective of fighting musculoskeletal pain, studies have focused on resilience as a protection factor for the workers' health. This concept is related to human being's ability to face, learn, and overcome adversity, in order to be strengthened or transformed by it⁸. Resilient people are capable, after a difficult situation, of reestablishing their emotional and mental balance, learning from the experience, and becoming stronger and better prepared⁹. Based on these considerations, the present study aimed to evaluate frequency, musculoskeletal pain intensity and capacity of resilience of nursing professionals working in a hospital nephrology unit.

METHODS

Cross-sectional, descriptive study, including only nursing professionals working in the nephrology unit of a general, philanthropic hospital, located in the northwestern region of Rio Grande do Sul.

The target population consisted of 18 nursing professionals. Inclusion criteria were being a member of the nursing team, working in the nephrology unit at the institution, and signing the Free and Informed Consent Term (FICT).

Data collection occurred from December 2019 to March 2020 by applying the following instruments: sociodemographic, labor and clinical questionnaire, Nordic Musculoskeletal Questionnaire (NMQ)^{11,12}, visual analog scale (VAS)¹³ and Resilience Scale (RS)^{9,14}. The sociodemographic, clinical, and work questionnaire included questions about the participants' sociodemographic features, work, and health conditions. The NMQ validated¹¹ and adapted to the Brazilian culture¹² consists of 36 multiple and binary questions regarding the occurrence of musculoskeletal disorders in the last year and in the last seven days prior to data collection, consultation with health professionals, and impediment of daily activities, in nine anatomical regions: neck, shoulders, upper back, elbows, wrists/hands, lower back, hips/thighs, knees, ankles/feet¹². The VAS is numbered from zero to 10, where zero represents "no pain" and 10 "maximum pain"¹³. In the present study, scores zero = no pain, ≤ 4 were considered mild to moderate pain, and ≥ 5 moderate to severe pain.

The RS translated and validated into Portuguese¹⁴ evaluates the level of positive psychosocial adaptation of the individual in the face of important life situations. It contains 25 items, with Likert scale response options, ranging from 1 (strongly disagree) to 7 (completely agree). For classification purposes, scores below 121 were considered as low resilience, from 121 to 146 as moderate resilience, and above 147 as high resilience¹⁵.

The research project was approved by the hospital's Evaluation Committee and then by the CEP of UNIJUÍ, under Consent Opinion no. 3.657.852. All ethical precepts involving research with human beings were observed, as recommended in Resolution 466/12 of the Brazilian Ministry of Health¹⁰.

Statistical analysis

For the analysis, data was entered into a Microsoft Office Excel database, with independent double entry. After checking for possible errors and/or inconsistencies, the data was corrected and transferred to the Statistical Package for Social Sciences (SPSS) software, version 22.0, and analyzed with descriptive and inferential statistics, using association and/or correlation tests for categorical variables, according to the asymmetry of distribution by the Shapiro-Wilk normality, Fisher's exact, and Pearson's Chi-square tests. Values of $p < 0.05$ were considered statistically significant.

RESULTS

Fifteen nursing professionals who met the inclusion criteria were included in the study. Of these, three were nurses and 12 nursing technicians. Most participants were female (80%) and were between 31 and 40 years old (46.7%). Regarding marital status, most have a partner and children.

Regarding professional characteristics, most participants are nursing technicians (80.0%), with training time between 6 and 10 years (33.3%), working 36 hours a week (80.0%), with a single employment status (66.7%). The largest percentage of interviewees has worked in the profession for 5 to 10 years (46.7%), 20.0% have worked for more than 10 years and 20.0% for less than 1 year.

The different anatomical areas related to musculoskeletal pain mentioned by the research participants are shown in table 1. The highest percentages of pain in the previous 12 months were in the shoulder (46.7%), followed by ankles/feet (40.0%) and dorsal and lumbar region (33.3%). The highest percentage of pain in the previous seven days was in the shoulders (26.7%) and lower back (26.7%), followed by the dorsal area (20.0%). Impediment to perform normal activities in the previous year was equal (6.7%) for disorders in the neck, shoulders, dorsal, and lumbar region. 20.0% of health professionals in the same period sought medical care for disorders in the lumbar region.

Table 2 presents sociodemographic and work characteristics according to the evaluation of pain intensity reported by participants. The results show that women, aged between 31 and

Table 1. Frequency of musculoskeletal symptoms by anatomical area reported by nursing professionals working in a general hospital nephrology unit

Musculoskeletal symptoms according to body area	PTP N (%)	NAI N (%)	SHP N (%)	PR N (%)
Neck	4(26.7%)	1(6.7%)	-	-
Shoulders	7(46.7%)	1(6.7%)	1(6.7%)	4(26.7%)
High dorsal area	5(33.3%)	1(6.7%)	1(6.7%)	3 (20%)
Lumbar area	5(33.3%)	1(6.7%)	3 (20%)	4(26.7%)
Ankles/Feet	6 (40%)	-	-	2(13.3%)

PTP = Some pain or tingling/numbness problem in the last 12 months; NAI = Normal activities impediment in the last 12 months; SHP = Sought some health professional in the last 12 months; PR = In the last 7 days there was some problems.

40 years, nursing technicians, which are not in a leadership and/or unit coordination position, working 6 hours a day and 36 hours a week, with a single exclusive employment, presented higher pain intensity. There was no association between sociodemographic and labor characteristics and pain intensity. Only five (33.3%) professionals practice regular physi-

cal activities and half of them evaluate their leisure time as adequate.

As for the capacity for resilience, 26.6% of participants presented low resilience, 40.0% moderate, and 33.4% high. Table 3 presents the sociodemographic and work characteristics according to resilience, and although there was no statistically significant

Table 2. Sociodemographic and work characteristics according to the assessment of pain intensity of nursing professionals working in a general hospital nephrology unit

Characteristics	n	Pain intensity ≤ 4 (n/%)	Pain intensity ≥ 5 (n/%)	p-value
Gender	Female	12	4 (33.0)	0.341
	Male	03	2 (66.7)	
Age (years)	18 to 30	5	2(40.0)	0.400
	31 to 40	7	2(28.6)	
	41 to 50	2	2(100)	
	More than 50	1	1(100)	
Professional category	Nurse	3	2 (66.7)	0.292
	Nursing technician	12	4 (33.3)	
Leadership position	No	13	5 (38.5)	0.657
	Yes	2	1 (50.0)	
Daily work (hours)	6	12	4 (33.3)	0.341
	12	3	2 (66.7)	
Weekly work (hours)	36	12	5 (41.7)	0.659
	40	3	1 (33.3)	
Other employment	Yes	5	3 (60.0)	0.287
	No	10	3 (30.0)	
Physical activities practice	Yes	5	2 (40.0)	0.916
	No	3	1 (33.4)	
	Sometimes	7	3 (42.8)	
Adequate leisure time	Yes	6	3 (50.0)	0.455
	No	9	3 (33.3)	

* Fisher's Exact Test, significant for p<0.05.

Table 3. Sociodemographic and labor characteristics according to capacity for resilience of nursing professionals working in a general hospital nephrology unit

Characteristics	n	Capacity of resilience			p-value*
		Low n (%)	Moderate n (%)	High n (%)	
Gender	Female	12	4 (33.3)	4 (33.3)	0.435
	Male	3	0(0.0)	2 (66.7)	
Age (years)	18 to 30	5	1 (20.0)	1 (20.0)	0.422
	31 to 40	7	3 (42.9)	3 (42.9)	
	41 to 50	2	0 (0.0)	1 (50.0)	
	More than 50	1	0 (0.0)	1 (100)	
Marital status	Partnered	12	4 (33.3)	4 (33.3)	0.435
	Not partnered	3	0 (0.0)	2 (66.7)	
Professional category	Nurse	3	0 (0.0)	2 (66.7)	0.435
	Nursing technician	12	4 (33.3)	4 (33.3)	
Daily work (hours)	6	12	2 (16.7)	6 (50.0)	0.153
	12	3	2 (66.7)	0 (0.0)	
Time of service as a nursing professional (years)	Less than 1	3	0 (0.0)	1 (33.3)	0.423
	From 3 to 5	2	1 (50.0)	0 (0.0)	
	From 5 to 10	7	3 (42.9)	3 (42.9)	
	More than 10	3	0 (0.0)	2 (66.7)	
Other employment	Yes	5	2 (40.0)	2 (40.0)	0.638
	No	10	2 (20.0)	4 (40.0)	

* Pearson's Chi-square test.

difference between sociodemographic and work characteristics and resilience, male nursing professionals, younger, single, nurses, who work a 6-hour shift, work less than 1 year or more than 10 years in the profession, and have a single employment status presented better scores.

DISCUSSION

Nursing professionals working in nephrology units are exposed to several risks that can cause musculoskeletal pain and damage to physical and mental health. The workers health deserves attention and actions in the professional, personal, and organizational spheres, as confirmed by the results of this study, with a predominance of women who deal with pain in different anatomical regions of the body. Similar results report attention to individualities of each professional² and that activities such as carrying excessive weight, moving machinery, equipment and supplies, associated with caring for patients with physical limitations, require more physical effort during care⁷.

The characterization of participants regarding work variables signals an alert for managers and health professionals working in nephrology about the weekly work hours since pain is more frequent and intense in women in activities that require physical effort and orthostatic posture¹⁶. Moreover, the staff needs to expand knowledge about the benefits of regular physical activities to strengthen muscles, as well as to prevent chronic pain and irreversible damage, which can make these professionals unable to work. Regular physical activity is recommended as a therapeutic intervention for several pain conditions, including musculoskeletal^{17,18}.

The intense pace and organization of the work are risk factors related to musculoskeletal discomfort and pain¹⁹. Research on occupational risks with 30 nursing professionals found that long working hours, incorrect posture, inadequate physical structure and repetitive efforts can trigger pain²⁰ and that physical and mental effort, low salary and lifestyle contribute to exhaustion and fatigue, also negatively impacting patient care and quality of life of health professionals²¹.

Regarding the work variables, more specifically the team's time of service, it's evident that they are experts in the area. This result can be used by the professionals in a positive way and as a tool to better face the adversities of daily work and reduce levels of stress and musculoskeletal pain. On the other hand, musculoskeletal pain and stress levels were related to the time of service¹⁶.

The present research results, along with other national and international investigations, show how much musculoskeletal pain negatively interferes with health, performance of work activities, personal and professional quality of life, and the institution as a whole.

Research with 214 nursing professionals found that 100% of them reported musculoskeletal pain and more than half reported having at least one musculoskeletal disease². The authors highlight that the professionals health calls attention not only to the worker, but also to the institution, due to

the reduction of the employee's performance and production. Pain is equated to vital signs to enable its measurement. A musculoskeletal symptom requires proper identification, assessment, and management aiming at effective treatment, disease prevention, and reduction of the risk of damage to the quality of care²².

Although only 6.7% of the participants reported impediment to perform normal work activities in the previous year, this finding is still significant as an indicator for both managers and workers in nephrology units to plan and implement preventive and promotional actions focused on health, safety and quality of life of workers and institution. Despite being conscious of health risks, many professionals continue to perform their work activities and live with physical discomfort for long periods, a worrisome situation²². Occupational diseases are responsible for high rates of work absence and, in the health field, more specifically in nursing, a large category, these absences cause a significant impact on institutions and the care provided for society⁶.

Regarding the analysis of the reported locations and intensity of pain associated with resilience capacity, the fact that more than 70% of the participants presented moderate to high resilience capacity may be a positive indicator that contributes to them being able to continue practicing their profession, even with pain. A research with 40 health workers obtained similar results, showing that nursing technicians express lower resilience averages compared to higher education professionals, justified by the lower level of schooling, professional training, and high physical and psychological demands involved in patient care²³. It's important to note that this scenario requires attention and actions from the managers and nursing professionals themselves to maintain and increase resilience.

Implementation of educational actions aims to increase knowledge about the occupational risks to which these professionals are exposed, maintaining health and preventing physical and emotional damage. Resilience can be used as a positive mechanism, contributing to the professionals' ability to mitigate the risks of the job, with the support of family and colleagues through the exchange of experiences, sharing of knowledge and experiences, increasing job satisfaction and protecting health²⁴.

The characteristics of the work in hemodialysis units favor damages to the worker's health⁵. Therefore, permanent evaluations of the workers' health condition in these services, along with programs that promote health and well-being at work, are essential²⁵.

Assessment of the intensity and areas of musculoskeletal pain and the resilience capacity of the research participants requires attention from managers, nurses and other members of the nursing team who work in the nephrology unit, aiming at educational actions and interventions to expand knowledge about musculoskeletal pain and resilience, thus preparing them to better face the physical and emotional demands in the unit.

In addition to expanding knowledge, changes must be made in the physical and functional structure of the service, such as

furniture and technologies that favor ergonomics, as well as providing workplace exercises. The results may instigate researchers and contribute to the reduction of gaps on the subject, thus changing concepts and postures, as well as enhancing the quality of care of patients in nephrology and quality of life of professionals inside and outside the work environment.

Among the limitations of the present research, the fact that it was carried out in only one unit is a limitation for the possibility of generalizing and comparing the results.

CONCLUSION

Results show that the nephrology unit nursing team deals with musculoskeletal pain in different anatomical areas and presents moderate to high resilience, which helps them to continue performing their functions.

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