

Health problems among nursing workers in a haemodialysis service

Danos à saúde dos trabalhadores de enfermagem em um serviço de hemodiálise

Daños a la salud de los trabajadores de enfermería en un servicio de hemodiálisis



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ABSTRACT

Objective: The aim was to measure work-related health problems among nursing workers at a haemodialysis unit in southern Brazil and associate these issues with the socio-occupational characteristics of the workers.

Method: This is a qualitative study conducted with 46 nursing workers. Data were collected using a general health questionnaire with socio-occupational information and a work-related health assessment scale. The data were subjected to descriptive, correlational, bivariate analysis with significance levels of 5% using Epi-info[®] and Predictive Analytics Software.

Results: Physical, psychological, and social problems were considered bearable, and job satisfaction was associated with current income and work absenteeism for health treatment ($p < 0.05$). Back pain (3.74 ± 2.04) and leg pain (3.48 ± 2.10) were considered severe. There was a direct correlation between the health issues ($r > 0.31$, $p < 0.05$).

Conclusion: In spite of the positive results of the work-related health assessment among the studied population, the results confirm the need to promote the health of nursing workers.

Keywords: Nursing. Occupational health. Renal dialysis. Nephrology nursing. Work.

RESUMO

Objetivo: Mensurar os danos à saúde relacionados ao trabalho e associá-los com as características sociolaborais de trabalhadores de enfermagem de um serviço de hemodiálise do Sul do Brasil.

Método: Pesquisa quantitativa, realizada com 46 trabalhadores. Utilizou-se um questionário autoperenchível com dados sociolaborais e a Escala de Danos Relacionados ao Trabalho. Realizou-se a análise descritiva, bivariada e correlacional, com níveis de significância de 5%, usando os programas Epi-info[®] e Predictive Analytics Software.

Resultados: Os danos físicos, psicológicos e sociais foram avaliados como suportáveis, sendo identificada associação com a satisfação com a remuneração atual e afastamento do trabalho para tratamento de saúde ($p < 0,05$). As dores nas costas ($3,74 \pm 2,04$) e nas pernas ($3,48 \pm 2,10$) foram consideradas graves. Houve correlação direta entre os danos à saúde ($r > 0,31$, $p < 0,05$).

Conclusão: Apesar da avaliação positiva dos danos à saúde na população estudada, reitera-se a necessidade de medidas que favoreçam a saúde dos trabalhadores.

Palavras-chave: Enfermagem. Saúde do trabalhador. Diálise renal. Enfermagem em nefrologia. Trabalho.

RESUMEN

Objetivo: Medir los daños a la salud relacionados al trabajo y asociarlos con las características sociolaborales de trabajadores de enfermería de un servicio de hemodiálisis en el Sur de Brasil.

Método: Investigación cuantitativa, realizada con 46 trabajadores. Se utilizó un cuestionario autorrellenable con datos sociolaborales y la Escala de Daños Relacionados al Trabajo. Se realizó el análisis descriptivo, bivariado y correlacional, con niveles de significación de 5%, utilizándose los programas Epi-info[®] y Predictive Analytics Software.

Resultados: Los daños físicos, psicológicos y sociales fueron considerados soportables, siendo identificada asociación con la satisfacción con la remuneración actual y licencia del trabajo para tratamiento de salud ($p < 0,05$). Hubo correlación directa entre los daños a la salud ($r > 0,31$, $p < 0,05$).

Conclusión: A pesar de la valoración positiva de los daños a la salud en esta población, se confirma la necesidad de medidas para fomentar la salud de los trabajadores.

Palabras clave: Enfermería. Salud laboral. Diálisis renal. Enfermería en nefrología; Trabajo.

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■ INTRODUCTION

Work plays a key role in the lives of individuals and its relationship with the health of workers is never neutral. Its effects tend to be positive and harmonising when there is freedom of creation and expression and the workers have a relative control over the work process. Contrarily, work can destabilise and weaken health when there is no negotiation between the expectations and needs of the workers and requirements of work organisation⁽¹⁻²⁾.

Work-related health problems are the manifestation of the detrimental effects of work on health and the consequences of the demands and experiences in terms of physical and psychosocial harm. The physical issues are defined as the presence of manifestations like body aches and biological disturbances. The psychological problems are characterised by the experience of negative feelings about oneself and life in general, whereas the social problems include isolation and difficulties in social and family relationships⁽²⁾.

In spite of advances in the production of knowledge related to the health of workers, work-related diseases and health problems are still growing. Paradoxically, when health workers, especially nurses, are providing care to others, they often forget to look after themselves and the location in which they work⁽³⁾. This neglect may be related to the current configuration of the intense work activities in health services, which tend to reflect negatively on the health of workers⁽⁴⁾.

One of the scenarios where nursing plays a predominant role is haemodialysis units. These units have specific characteristics such as activities with patients suffering from chronic illness and the need for specific knowledge to monitor a procedure with high technical complexity⁽⁵⁾.

A study conducted in Germany showed that downsizing, budget cuts, the increasing number of patients in haemodialysis with multiple illnesses and the technical handling of complex equipment are emerging demands that can negatively affect the well-being of workers in haemodialysis units⁽⁶⁾.

According to a worldwide trend, Brazil is also showing a gradual increase in the prevalence rate of patients undergoing dialytic therapy. In 2012, there were an estimated 97,586 patients receiving this form of treatment in Brazil. In the surveyed dialysis units in 2012, more than 90% of patients were receiving haemodialysis treatment⁽⁷⁾.

In spite of the growing worldwide demand for haemodialysis services⁽⁶⁾, only a few studies focus on the health-related aspects of nursing workers in this context^(5-6,8). Consequently, the question is how nursing work-

ers assess work-related health problems at a haemodialysis unit and whether there is an association between the health problems and the socio-occupational characteristics of these workers.

Studying the health problems of nursing workers at a haemodialysis unit and relating these problems to their socio-occupational characteristics can help identify the possibility of health issues among this population. Similarly, the purpose of this study is to shed light on the subject of nursing workers' health in a specific field that is rarely explored in Brazilian studies.

The aim of this study is to measure work-related health problems and associate them with the socio-occupational characteristics of nursing workers at a haemodialysis unit in southern Brazil.

■ METHOD

This is a quantitative correlational study conducted at a haemodialysis unit in southern Brazil. The research comes from a master's dissertation⁽⁹⁾ and was conducted at a private intra-hospital institution associated to the unified health system (SUS) that provides a regular haemodialysis programme for around 300 patients.

The population consisted of 51 nursing workers (six nurses, 33 technicians and 12 nursing assistants). The inclusion criterion was to have been a member of the nursing staff of the service for at least six months, and the exclusion criterion was employees on vacation or any other type of work leave during the data collection period from March to April 2011.

The workers were approached individually at their workplace, notified of the research objectives and invited to participate in the study. The workers who agreed were handed a research questionnaire in an envelope and were later given instructions on how to answer the questionnaire. The participants could choose whether or not to answer the questionnaire during their work shift.

Of the 51 nursing workers at the units, 46 participated in this study. Three did not meet the established criteria. Two workers did not return the completed questionnaire after three contact attempts from the researcher and were considered losses.

The research questionnaire contained information related to socio-occupational data (gender, age, marital status, function, work shift, work time, presence of another job, occurrence of an accident at work, need to stay away from work for health treatment in the past year and satisfaction with current remuneration) and a scale to assess work-related problems (EADRT). The EADRT is one of the

four scales that form part of the self-applicable inventory of work and risks of illness (ITRA) that was created and validated in Brazil in 2003⁽¹⁰⁾ to evaluate some dimensions of the interrelation between work and risk of illness. In this study, we used the third version of the instrument that was revalidated and published in 2007⁽²⁾.

The EADRT has 29 items and consists of three factors: physical problems (items 1 to 12), psychological problems (items 13 to 22) and social problems (items 23 to 29). It is a seven-point scale that is used to assess work-related problems suffered in the past six months. The seven points of the scale are 0 = never, 1 = once, 2 = twice, 3 = three times, 4 = four times, 5 = five times and 6 = six or more times⁽²⁾.

The information was processed by means of independent double data entry in the programme Epi-info® version 6.04. After error correction, the data were analysed using PASW Statistic® (Predictive Analytics Software) version 18.0 for Windows. The variables were subjected to descriptive analysis. The qualitative variables were described by means of absolute and relative frequency, whereas the quantitative variables with normal distribution were described by means of average and standard deviation.

For the EADRT analysis, the results were classified into four levels: above 4.0 = negative rating, presence of occupational health problems; between 4 and 3.1 = moderate to frequent rating, serious; between 3 and 2 = moderate rating, serious; below 1.99 = positive rating, bearable.

Next, bivariate analyses were conducted. The associations between EADRT factors and sociodemographic and occupational variables (categorical) were determined using the Chi-square test or Fisher's exact test, with levels of significance of 5%.

The reliability of the EADRT was evaluated by estimating internal consistency using Cronbach's alpha. Values above 0.80 were identified in the three factors of the scale (psychological problems $\alpha = 0.91$; social problems $\alpha = 0.83$ and physical problems $\alpha = 0.83$).

The correlation between the EADRT factors was analysed by means of Spearman's rank correlation coefficient. The strength of association was classified according to the intensity of the correlation, which ranges from +1 to -1, as follows: $r = 1$ perfect correlation; $0.80 < r < 1$ very high; $0.60 < r < 0.80$ high; $0.40 < r < 0.60$ moderate; $0.20 < r < 0.40$ low; $0 < r < 0.20$ very low; $r = 0$ null⁽¹¹⁾.

The research complied with ethical guidelines for research with human beings established in Resolution 466/12 of the national health council. The study was approved by the research ethics committee of the Universidade Federal de Santa Maria with the certificate of presentation for ethical appreciation (CAAE) number 0364.0.243.000-10. All

the participants read and signed two copies of an informed consent statement.

■ RESULTS

Most of the participants were women (80.4%, $n = 37$), married (65.2%, $n = 30$), nursing technicians (67.4%, $n = 31$), who did not have another job (73.9%, $n = 34$). The average age of the participants was 39.9 (SD = 10.02) and the average time working at the service was 10.28 years (SD = 6.64). Most of the workers (56.5%, $n = 26$) claimed they were 75% satisfied with their current remuneration, had not suffered an accident at work (82.6%; $n = 38$) and had not been away from work for health reasons in the past year (67.4%; $n = 31$).

Table 1 shows the descriptive statistics of the factors that assess the work-related health problems and the two items with the highest averages in each factor.

The work-related problems were classified as bearable by the nursing workers of the haemodialysis unit, and the factor physical problems presented the highest average ($\mu = 1.77$; SD = 1.08).

The factor physical problems was rated as bearable as a whole, whilst the items "back pain" and "leg pain" presented the highest averages and were considered as being serious by the workers. With regard to the association of the factor with the socio-occupational data, physical problems showed a significant association with dissatisfaction with the current remuneration ($p = 0.004$) and the need to be away from work for health treatment in the past year ($p = 0.008$). No statistically significant associations were identified in the remaining variables ($p > 0.05$).

For the factor psychological problems, all the items were evaluated as bearable. The items with the worst rating were "sadness" and "bad mood", with a borderline value in the classification of bearable. With regard to the association of the factor with the socio-occupational data, there was an association between the factor psychological problems and satisfaction with the current remuneration ($p = 0.045$). No differences were identified between the groups for the remaining variables ($p > 0.05$).

The social problems were also considered bearable and presented the lowest average among the surveyed factors ($\mu = 1.12$; SD = 0.85), as shown in Table 1. Although the items "desire to be alone" and "impatience with people" presented the highest averages of the items of this factor, they are not characterised as a health problem because they were considered bearable by the workers. In this factor, no significant associations with the variable of interest were identified ($p > 0.05$).

Table 1 – Descriptive statistics and items with higher averages in the scale to assess work-related problems (EADRT). Santa Maria/RS, Brazil, 2011. (N = 46)

EADRT factors	Items with higher averages per factor	Average and standard deviation	Classification
		$\mu=1.77$ (SD = 1.08)	Bearable
Physical problems	Back pain	$\mu=3.74$ (SD = 2.04)	Serious
	Leg pain	$\mu=3.48$ (SD = 2.10)	Serious
Psychological problems		$\mu=1.22$ (SD = 1.77)	Bearable
	Sadness	$\mu=1.96$ (SD = 1.86)	Bearable
	Bad mood	$\mu=1.87$ (SD = 1.57)	Bearable
Social problems		$\mu=1.12$ (SD = 0.85)	Bearable
	Desire to be alone	$\mu=1.67$ (SD=1.92)	Bearable
	Impatience with people	$\mu=1.65$ (SD=1.32)	Bearable

Source: Research data, 2011.

Table 2 presents the Spearman's correlation coefficient between the EADRT factors.

The social problems presented a high, direct and significant correlation with the psychological problems ($r= 0.61$, $p < 0.01$) and a low, direct correlation with the physical problems ($r= 0.31$, $p < 0.05$). No correlation was identified between the physical and psychological problems ($p > 0.05$), as shown in Table 2.

■ DISCUSSION

As in the case of other studies with health workers⁽¹²⁻¹⁴⁾, this study showed a good internal consistency of the factors that make up the EADRT among the investigated population, with Cronbach's alpha exceeding 0.80.

The investigated population mostly consisted of women workers with a relatively solid life and work experience at the haemodialysis unit and without another job, which is similar to the results of other studies with nursing workers^(12, 14).

In addition, most of the workers claimed to be satisfied with the current remuneration, had not suffered any

accidents at work and had not taken time off work due to health problems in the past year. This description can be characterised as favourable for the health of workers at the surveyed nursing service.

The work-related health problems were considered bearable by the participants of this study. This result diverges from the findings of an investigation with intensive care nurses who identified their health problems as critical in all three factors⁽¹²⁾. Other studies identified the physical problems as critical and the psychological and social problems as bearable among professionals who worked in primary care services in a city of southern Brazil⁽¹³⁾ and among nursing workers of surgery units at university hospitals in the state of Rio Grande do Sul, Brazil⁽¹⁴⁾.

In the factor physical problems, back and leg pain were assessed as serious by the nursing workers of the haemodialysis unit. This result converges with the findings of other studies^(12, 14) with nursing workers in a hospital environment and denotes the possible repercussions of occupational activities on the health of workers.

Table 2 – Spearman's correlation coefficient between EADRT factors. Santa Maria/RS, Brazil, 2011. (N = 46)

EADRT factors	DF	DP	DS
Physical problems (DF)	1		
Psychological problems (DP)	0.26	1	
Social problems (DS)	0.31*	0.61**	1

Source: Research data, 2011.

Spearman's rank correlation coefficient; *Significant correlation at $p \leq 0.05$ level;

** Significant correlation at $p \leq 0.01$ level.

A study with the nursing team of a dialysis unit identified the occurrence of back pain, especially in the lumbar region, among most of the participants. The study also mentions the absence of care in relation to the correct ergonomic posture when the workers move patients or perform procedures, which can contribute to musculoskeletal discomfort⁽¹⁵⁾.

A study⁽⁵⁾ describes some characteristics of the nursing work process at haemodialysis units, such as the repetition of tasks, pressure to complete activities in a given period, pressure to get things right and the need to constantly monitor patients and equipment during the procedure. These characteristics may promote a work overload and the manifestation of health problems among workers.

In this study, the workers who were less satisfied with their remuneration assessed the factor physical problems as being more critical. A remuneration that is consistent with the work activities is important for the workers since, in addition to providing for their basic needs, it represents the recognition of the work they conduct⁽¹⁶⁾. This contradiction between the expectations of the workers and their reality requires mediation in order to prevent the appearance or aggravation of work-related pathological processes.

Physical problems were also associated with the need to spend time away from work for treatment in the past year. A similar result was found in a study that classified time away from work due to spinal injuries as routine among the nursing workers, especially the nursing technicians and assistants of a haemodialysis unit⁽¹⁷⁾.

Musculoskeletal disorders were the predominant causes of absenteeism for illness among the nursing workers of a haemodialysis service⁽¹⁸⁾, which ratifies the association between physical problems and the need to stay away from work for treatment in the past year shown in this study.

With regard to psychological problems, the satisfactory evaluation of the study participants matches the results of other studies with health professionals who worked with

haemodialysis patients^(6, 19). Research carried out in dialysis centres in Germany identified that 25% of the health professionals were under stress triggered by the suffering or death of their patients⁽⁶⁾. An investigation with nurses of units that provide care for critical and potentially critical patients at a university hospital in southern Brazil identified a greater level of stress in the team of the nephrology unit⁽¹⁹⁾.

In another study, despite the satisfactory assessment for physiological problems, the items "sadness" and "bad mood" achieved the highest averages, with borderline values in the bearable assessment⁽¹⁴⁾.

Authors mention that dealing with the same patient on an everyday basis for long periods is a key characteristic of haemodialysis work that causes both pleasure and suffering. The established ties arouse mixed feelings among the workers, who feel recognised and valued due to the demonstrations of affection, but also overburdened due to the affective, family-related and financial needs of the patients⁽⁸⁾.

A study in a dialytic unit identified that the occupational risks perceived by the nursing staff were, respectively, biological, chemical, physical, ergonomic and, less frequently, psychosocial risk. Nevertheless, some participants stated that the work produces mental suffering. This suffering was attributed to their work in a closed environment with depressive patients and the tension generated by the responsibility with human lives⁽¹⁵⁾.

Thus, the results for the factor psychological problems can refer to the workers' capacity to correctly redefine the suffering and pleasure experienced at work in the haemodialysis unit. Also, the satisfactory result found in this study may be related to the difficulty of characterising work-related diseases, especially psychological issues.

The association between the absence of psychological problems and the satisfaction with the current remuneration was also revealed. This result confirms that satisfaction with the remuneration reflects positively on the recovery and recognition of the workers, which, in turn, reflects positively on their mental functioning and overall health⁽²⁾.

This result can also be considered positive because the existence of conditions that trigger suffering and burden, such as low wages and double employment, is no longer contested in the labour context of nursing. Nevertheless, the repercussions that exposure to these conditions has on the health of workers are still fairly unknown⁽²⁰⁾.

In the factor social problems, which were evaluated as bearable for all the items, the desire to be alone and impatience with people in general presented the highest averages and consequently confirm the study results⁽¹⁴⁾. These results can be considered positive if compared to

those found in other investigations in which these items also presented the highest averages, although they were classified as critical⁽¹²⁻¹⁴⁾.

In this study, the presence of work-related social problems was not identified. A study that compared workers of a dialysis with workers of inpatient units identified that it is easier for the dialysis team to reconcile work and private life than for hospital nurses⁽⁶⁾.

Therefore, it is important to list some of the characteristics of the studied service, such as whether the night shift ends at 10:00 p.m. and whether the team works on Sundays. Furthermore, most of the participants did not have another job, which may favour the practice of leisure activities and reflect positively on the social aspects of the workers' lives.

The social problems correlated directly with the physical and psychological problems, that is, the workers who most positively assessed social problems also presented the lowest averages for the factors physical and psychological problems. This correlation can be explained by the fact that work is an activity that involves individuals in all its dimensions. Thus, the relationships that individuals establish with their work are fundamental for the construction of human subjectivity and has repercussions on their physical and mental health⁽¹⁻²⁾.

■ CONCLUSION

The health problems of the nursing workers of the studied haemodialysis unit were evaluated as bearable. For the factor physical problems, which had the highest averages, the presence of back pain and leg pain was considered serious.

The physical problems showed an association with satisfaction with the current remuneration and the need to take time off work for treatment in the past year. The factor psychological problems was related to satisfaction with the current remuneration.

In spite of the positive evaluation of health problems among the studied population, we cannot discard the need to maintain, constantly evaluate and promote work conditions that promote the health of workers, especially considering that we identified signs of health problems related to musculoskeletal pain and an association of physical problems with absenteeism due to illness.

In view of these signs, we recommend the creation of institutional spaces for listening, discussion and individual and collective evaluation where the workers can be instrumentalised to identify and prevent work-related health issues. In this way, the nursing workers themselves can point out

situations that require intervention and subsequently prevent work-related health problems in the haemodialysis units.

The results may have been underestimated since the studied workers are active and may not have remembered the number of times they presented the manifestations listed in the EADRT in the last six months. Another study limitation is the size of the studied population, which can limit any generalisations and more complex statistical analyses.

Although the EADRT is not a specific instrument for nursing workers, it was internally consistent when applied to this population. The instrument proved useful in enabling an initial diagnosis of health problems that can be extended with qualitative techniques and the application of other instruments in investigations that address the health of nursing workers in haemodialysis units.

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