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Sociodemographic and occupational aspects associated with burnout in military nursing workers

*Aspectos sociodemográficos e laborais associados ao **burnout** em trabalhadores da Enfermagem Militar*

Aspectos sociodemográficos y ocupacionales asociados al burnout en trabajadores de enfermería militar

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ABSTRACT

Objectives: to analyze association between burnout and sociodemographic and occupational features of military nursing workers. **Methods:** a cross-sectional study, developed in five military hospitals of the Army of Rio Grande do Sul State, among 167 workers from military nursing from December 2015 to May 2016. Sociodemographic and occupational questionnaires and the Maslach Burnout Inventory were applied. For the analysis, it was used descriptive statistics, Chi-Square Test and Poisson Regression. **Results:** the majority of participants were female; temporary military personnel, nursing technicians, with a median age of 34 years old. Burnout was related to the variables: Military Health Organization, time of practice in military nursing and accomplishment of leisure activities. **Conclusions**: burnout assessment may contribute to the Brazilian Army Command in organizing plans for prevention and handling of occupational diseases in military nursing, improving quality of life at work.

Descriptors: Professional Burnout; Military Nursing; Nursing; Military Hospitals; Worker's Health.

RESUMO

Objetivos: analisar associações entre *burnout* e características sociodemográficas e laborais dos trabalhadores da Enfermagem Militar. **Métodos:** estudo transversal, desenvolvido em cinco hospitais militares do Exército do Rio Grande do Sul, com 167 trabalhadores da Enfermagem Militar no período de dezembro de 2015 a maio de 2016. Foram aplicados questionários sociodemográfico e laboral, e o *Maslach Burnout Inventory*. Para a análise, utilizaram-se a estatística descritiva, Teste Qui-Quadrado e regressão de Poisson. **Resultados:** na maioria, os participantes eram do sexo feminino, militares temporários, técnicos de enfermagem, com mediana de idade de 34 anos. O *burnout* foi associado às variáveis organização militar de saúde, tempo de atuação na Enfermagem Militar e realização de atividades de lazer. **Conclusões:** a avaliação do *burnout* poderá contribuir com o Comando do Exército Brasileiro na organização de planos de prevenção e manejo de doenças laborais na Enfermagem Militar favorecendo uma qualidade de vida melhor no trabalho.

Descritores: Esgotamento Profissional; Enfermagem Militar; Enfermagem; Hospitais Militares; Saúde do Trabalhador.

RESUMEN

Objetivos: analizar las asociaciones entre el *burnout* y las características sociodemográficas y laborales de los trabajadores de enfermería militar. **Métodos:** un estudio transversal, desarrollado en cinco hospitales militares del Ejército de Rio Grande do Sul, con 167 trabajadores de enfermería militar desde diciembre de 2015 hasta mayo de 2016. Se aplicaron cuestionarios sociodemográficos y laborales, y el *Maslach Burnout Inventory*. Para el análisis, se utilizaron estadísticas descriptivas, prueba de Chi Cuadrado y regresión de Poisson. **Resultados:** en la mayoría, los participantes fueron mujeres, militares temporales, técnicos de enfermería, con una mediana de edad de 34 años. El *burnout* se asoció con las variables organización militar de salud, el tiempo dedicado a la enfermería militar y la realización de actividades de ocio. **Conclusiones:** la evaluación del *burnout* puede contribuir al Comando del Ejército Brasileño en la organización de planes de prevención y manejo de enfermedades profesionales en Enfermería Militar, favoreciendo una mejor calidad de vida en el trabajo.

Descriptores: Agotamiento Profesional; Enfermería Militar; Enfermería; Hospitales Militares; Salud Laboral.

INTRODUCTION

The distinct changes experienced by modern society are reflected in the routine of workers, making them progressively more committed to the demands and needs of the work environment. Difficulties in aggregating occupational and personal actions can cause physical and psychosocial changes, and the development of several diseases, such as burnout[1].

Burnout is considered to be a psychic disorder, in which the worker has high emotional tension and chronic stress[2]. It is a multidimensional response made explicit by three components: emotional exhaustion, depersonalization and low professional achievement at work. Burnout currently composes the International Statistical Classification of Diseases and Related Health Problems (ICD) as an occupational disease in Group V of the ICD-10[1-2].

Regarding the prevalence of burnout in the health area, it is highlighted nursing workers, who must be observed carefully, since they are the workers who spend the most time in contact and in the care of patients and their relatives in the hospital environment[3].

In the military area, nursing workers can also develop burnout, since they do not differ from other types of nursing in relation to care, longer stay in health services, and approach to patients and relatives. In the health system, military nursing integrates an articulated structure of Military Health Organization (MHO) and Health Sections of Military Organizations, distributed countrywide. The organization of military nursing in the Brazilian Army (EB - Exército Brasileiro) occurs according to the hierarchical level of each military and norms specific to the military practicing, respecting the respective attributions and competences of each professional category[4,6].

In this sense, considering the particularities of military nursing, a search was made in the LILACS database and libraries PUBMED and SCIELO to identify studies that addressed burnout in this population, through the terms "worker's health" and "military". As a result, we did not identify studies that specifically addressed burnout in the EB military nursing. Only three studies with military nursing from the United States, Peru and Turkey, thus, constituting a gap in the scientific production of nursing regarding burnout, as well as the characteristics of the EB military nursing.

In view of the above, investigations involving the military workers' health are necessary because of their importance for the guarantee of law and public order. Among them, are military nursing workers, who carry out professional activities in singular work environments, who may develop burnout. It, together with the health-disease-illness process, may be associated with different sociodemographic and occupational variables[1,4,6].

Thus, there was a trial to answer the research question: "Is there association between burnout and sociodemographic and occupational features of military nursing workers from the EB of Rio Grande do Sul State?"

OBJECTIVES

To analyze association between burnout and sociodemographic and occupational features of military nursing workers

METHODS

Ethical aspects

The legal precepts and ethical aspects were followed in accordance with the Resolution 466/12[7]. Research was authorized by the Command of the third Military Region of the EB and the Research Ethical Committee of *Universidade Federal de Santa Maria*. For the data collection, the participants signed the Informed Consent Term, which was delivered in two ways along with the research tool. The anonymity of the participants was preserved.

Design, study location and period

This is a cross-sectional study was carried out in five military hospitals of the EB of the Rio Grande do Sul State, in five different municipalities. There are four Military Hospitals of Garrison (small size), located in countryside, and a Military Hospital of Area (large size), in the state capital.

Data were collected between December of 2015 and May of 2016. The military nursing workers were approached in their office hours, at work, and invited to participate in the study. Data collection was performed by collectors previously trained by the researcher in charge.

The military nursing workers that agreed to participate in research received an envelope with the research tool along with two ways of the Informed Consent Form. Then, the return of it was individually scheduled with each participant. Up to three search attempts have been made.

Population or sample

A non-probabilistic sample was used for convenience. However, to reduce possible biases, a minimum sample for finite population was calculated based on the population of 212 military nursing workers from the hospitals of the EB in the Rio Grande do Sul State in the period investigated, with a prevalence of burnout of 20% and alpha error of 5%. It was estimated a total of 115 people, plus 20% for possible losses, totaling a minimum of 138 participants.

Inclusion and exclusion criteria

It was adopted as inclusion criteria to be active professional of military nursing, with at least one year of practice in military nursing, in the Military Hospitals of the EB in the Rio Grande do Sul State; as exclusion criteria, absence or leave during data collection. It was used the technique of sampling by convenience.

Study protocol

The research protocol contained a questionnaire with sociodemographic variables (MHO, age, gender, marital status, number of children, schooling, training institution, ongoing course, leisure activities); and occupational (post or graduation, professional category, work sector, bonding, time of nursing and military nursing practice, hours worked in the last month, work

shift, absence). In addition to Maslach Burnout Inventory (MBI), prepared by Christina Maslach and Susan Jackson, considered the most used tool to assess burnout, regardless the occupational characteristics of the sample and its origin in the national and international background. The MBI was translated and validated for the Brazilian context in 1995, obtaining Cronbach's alpha values of 0.86 in emotional exhaustion, 0.69 in depersonalization and 0.76 in professional achievement[2,8]. The MBI consists of 22 questions on the seven-point Likert scale, comprising the Emotional Exhaustion dimensions, consisting of nine questions (1, 2, 3, 6, 8, 13, 14, 16 and 20); Depersonalization, composed of five questions (5, 10, 11, 15 and 22); and Professional Achievement, comprising eight questions (4, 7, 9, 12, 17, 18, 19 and 21)[8-9].

Analysis of results and statistics

For the inclusion of data in the analysis, it was used the Excel 2010 application, with double independent typing. Afterwards, data analysis was performed in the PASW Statistic® (Predictive Analytics Software, SPSS Inc., Chicago, USA) version 18 for Windows.

It was used descriptive statistics to analyze sociodemographic and occupational variables. The normality of the data was verified by the Kolmogorov-Smirnov test.

To define burnout, it was considered high scores on emotional exhaustion and depersonalization; and low scores on professional achievement[2,9]. The cut-off points of the emotional exhaustion and depersonalization dimensions were obtained by the percentile 75 and professional achievement, by the percentile 25, which has reverse score. It resulted in: Emotional exhaustion, ≥ 28 for high level, 18-27 medium, and ≤ 17 low; Depersonalization, ≥ 21 for high level, 19-20 medium, and ≤ 18 low; Professional Achievement, ≤ 18 for high level, 19-20 medium, and ≥ 25 low.

The dependent variable assessed was the "presence of burnout". Its prevalence was estimated as the numerator of the total number of workers in the military nursing with burnout over the total number of the sample multiplied by 100[2,9].

For the analysis the associations of categorical variables with burnout, it was used the Chi-Square Test ($\chi 2$) and Fischer's Exact Test, when appropriate. For the acceptance of the alternative hypotheses, it was considered a Confidence Interval (CI) of 95% with a statistical significance level of $p < 0.05$.

For the observation of the variables related to burnout, it was used the Poisson Regression with crude and adjusted variance, being estimated the Prevalence Ratios (PR) and their respective CI (CI95%) It is included in the crude and adjusted analysis independent variables related to burnout with p value <0.20.

RESULTS

Participants in the study were 167 (79%) military nursing workers, of which 125 (74.9%) were female; with a median age of 34 years, 99 (59.3%) married or with stable union and 90 (53.9%) had one or two children.

Of these, 25 (15%) were nurses and 142 (85%), nursing technicians. The workers had a median of 11 years of practice in nursing and four years in military nursing. It was identified median workload of 192 hours worked in the last month. Regarding the type of relationship with the EB, 44 (26.3%) were military officer career, 121 (72.5%), temporary and two (1.25%) did not answered.

Most of participants were in the morning shift, 99 (59.3%), with median time in the current 24-month shift and in the 34-month sector. The sectors with the largest number of participants were the Hospitalized Patient Unit (HPU) with 44 (26.3%) and the Operating Center with 29 (17.4%).

Regarding absence from work for health problem in the last year, 17 (10.2%) of the participants were on leave due to surgical and clinical problems, musculoskeletal disorders, depression and fatigue. Maternity leave was also a reason for absence.

The prevalence of burnout among military nursing workers was 13.8% (n=23). The results of the association between burnout and sociodemographic and occupational variables are presented in Table 1.

Afterwards, the variables with p value <0.20 were submitted to regression analysis, as presented in Table 2.

Based on the multivariate analysis, it was possible to observe higher prevalence of burnout among military nursing workers in the capital of the state (20%), with more than four years of military nursing work (13%) and that hadn't leisure activities (19%).

Table 1- Association between burnout and sociodemographic and occupational variables in military nursing workers from Santa Maria, Rio Grande do Sul State, Brazil, 2016 (n=167)

Variable	burnout - n (%)		*p* value
	Absent	Present	
Military Health Organization*			
Military Hospital of Area	56 (72.7)	21 (27.3)	**<0.0001**
Military Hospitals of Garrison	88 (97.8)	2 (2.2)	
Gender*			
Female	106 (84.8)	19 (15.2)	0.258
Male	31 (91.2)	3 (8.8)	
Post or Graduation**			
Garrison	123 (86.6)	19 (13.4)	
Junior officer	17 (89.5)	2 (10.5)	0.412
Intermediate and superior officers	4 (66.7)	2 (33.3)	
Age*			
Up to 34 years old	88 (89.8)	10 (10.2)	0.118
Over 34 years old	56 (81.2)	13 (18.8)	
Nursing practice time*			
Up to 10 years	71 (92.2)	6 (7.8)	0.031
Over 10 years	73 (81.1)	17 (18.9)	
Military nursing practice time*			
Up to 4 years	84 (93.3)	6 (6.7)	0.004
Over 4 years	60 (77.9)	17 (22.1)	
Work shift*			
Morning	90 (90.9)	9 (91.1)	
Afternoon	35 (92.1)	3 (7.9)	**<0.0001**
Night	6 (85.7)	1 (14.3)	
Mixed	13 (56.5)	10 (43.5)	
Absence from work*			
Yes	12 (70.6)	5 (29.4)	0.063
No	132 (88.0)	18 (12.0)	
Leisure activities*			
Yes	123 (92.5)	10 (7.5)	**<0.0001**
No	21 (61.8)	13 (38.2)	
Hours worked s in the last month*			
Up to 48 hours per week	73 (93.6)	5 (6.4)	0.008
Over 48 hours per week	51 (78.5)	14 (21.5)	

*Note: *- x^2 test; **- Linear Association by Linear of x2; significance - p <0.05.*

Table 2 - Crude and adjusted regression analysis of burnout in military nursing workers related to sociodemographic and occupational variables, Santa Maria, Rio Grande do Sul State, Brazil, 2016 (N=167)*

Variable	CrudePR	CI (95%)	*p* value	AdjPR1	CI (95%)	*p* value	AdjPR2	CI (95%)	*p* value	AdjPR3	CI (95%)	*p* value
Military Health Organization												
Military Hospital of Area	1.245	1.145-1.354	0.000				1.229	1.084-1.393	0.001*	1.208	1.113-1.310	**<0.0001**
Military Hospital of Garrison	1						1					
Age												
Over 34 years old	1.078	0.981-1.186	0.119	1.065	0.977-1.161	0.154						
Up to 34 years old	1											
Nursing practice time												
Over 10 years	1.103	1.010-1.204	0.029				1.033	0.951-1.122	0.439			
Up to 10 years	1						1					
Military nursing practice time												
Over 4 years	1.144	1.046-1.252	0.003				1.120	1.019-1.232	0.019*	1.139	1.051-1.234	0.002
Up to 4 years	1						1					
Work shift												
Morning	1.011	0.920-1.112	0.820				0.016	0.914-1.130	0.767			
Night	1.059	0.833-1.347	0.639				1.028	0.818-1.292	0.813			
Mixed	1.330	1.131-1.564	0.001				1.130	0.952-1.342	0.161			
Afternoon	1						1					
Absence from work												
Yes	1.155	0.971-1375	0.103				1.056	0.879-1.269	0.558			
No	1											
Leisure activities												
No	1.286	1.134-1.457	0.001	1.28	1.33-1.446	0.000	1.179	1.041-1.336	0.010*	1.194	1.061-1.343	0.003
Yes	1		0.000				1					
Work sector												
Closed	1.013	0.914-1.122	0.810									
Others	1.094	0.955-1.254	0.196									
Mixed	1.089	0.905-1.311	0.368									
Open	1											
Hours worked in the last month												
Over 48 hours per week	1.142	1.037-1.258	0.007				0.977	0.862-1.108	0.721			
Up to 48 hours per week	1											

*Note: * Poisson probability distribution model; CI - Confidence Interval; p-significance = <0.05.; CrudePR- Prevalence Ratio; AdjPR1- burnout+age+leisure; AdjPR2- burnout+Military Health Organization+nursing practice time+military nursing practice time+work shift+absence from work+leisure activities+work sector+Hours worked in the last month; PRadj3- burnout+leisure activities+Military Health Organization+military nursing practice time.*

DISCUSSION

By observing association between burnout and sociodemographic and occupational features of military nursing workers, it was possible to identify variables that are related to its prevalence. There were statistically significant associations between burnout and the variables: MHO (Military Hospital of Area); time of service in nursing (military personnel with more than 10 years of nursing practice) and in military nursing (more than four years of military nursing practice); work shift (morning or mixed); leisure activities (did not engage in leisure activities); and hours worked in the last month (up to 48 hours per week).

All these variables were associated with burnout in the crude regression analysis, presenting higher prevalence. Eventually, in the adjusted analyses burnout was related to the variables: MHO, time of practice in military nursing and accomplishment of leisure activities.

All these components, added to factors specific to the military culture, such as duties, values, hierarchy and discipline, can influence the behavior of the military personnel and contribute to the development of occupational diseases such as burnout, considering that they are quite remarkable in this context. The practice of military work has its own peculiarities, which involve the ability to handle weapons and military equipment, requiring specific training and continuous specialization, which in turn can overwhelm the worker and cause harm to his health[10-13]. Military nursing is a type of military service that follows the same principles of civil nursing; being directed toward health work with team spirit, according to its level of professional competence, established by its posts and graduations[6,10-11].

In the variable MHO, the military personnel that worked in the capital of the Rio Grande do Sul State, in the Military Hospital of Area, presented a prevalence 20% higher than those who worked in the countryside. This finding may be associated with some peculiarities, such as the technical complexity of the nursing practice in large hospitals and the metropolitan stress, driven mainly by high cost of living, concern with health, safety, education and, similarly, by the effects of heavy traffic[13-16].

Regarding the variables nursing and military nursing practice time, they were similarly associated with the occurrence of burnout in military nursing workers, presenting 10% and 14% higher prevalence in those who had the longest practice time, respectively. This factor, which has also been identified in other studies, may be fundamentally associated with burnout because of the greater time it takes to perform work with people, colleagues, patients and family. Due to this be an aggravating factor for occupational burnout, revealed by emotional exhaustion and depersonalization in dealing one to another[1-3,5,17].

As for the variable amount of hours worked in the last month, those who worked more than 48 hours per week presented a 14% higher prevalence of burnout. Although this is a high workload, it was also observed in other studies about military nursing of the Armies of the United States of America, Turkey and Peru[18-22]. The high amount of hours worked by the military nursing derives from the organization of the military institution itself, characterized by a regime of work in an uncertain time, for a long period. In addition to a demand for availability 24 hours a day, seven days per week, regardless of any personal or family planning. The exclusive dedication is inherent in the military work and of its responsibility with its Homeland[23].

Thus, the military does not fulfill fixed workload; military work is organized according to the need of service, following specific norms that regulate the practice of work activities. Commonly, military workers accomplish fixed daily working hours; and complement the need of service needs after that. The definition of the most suitable working hours' schedule and service lie with the Commander[5]; This characteristic also corresponds to the organization system of military work adopted in other armies previously mentioned[18-22].

In this sense, although the amount of hours worked in the month is something specific to the military organization, this variable may be influencing leisure activities. It was observed that those who did not practiced these activities had a prevalence 19% higher of burnout, which may also be related to the lack of time due to longer stay at work[1,24].

The variable amount of hours worked in the month may be an intensifier for burnout in those who work in a hospital with high complexity of the capital of Rio Grande do Sul State. In this condition, the worker faces the need for longer stay in the service, in addition to higher time of commuting from home to work and vice versa, mainly due to the influence of a more disturbed traffic of big cities. So, the number of hours worked in the month can also create a higher worker's demand, not only in physical, but also cognitive and emotional terms. It is highlighted the importance of carrying out leisure activities incorporated into the daily routine, due to the positive effects they bring to the mental and physical health of the worker. It also results in support in the prevention of diseases such as burnout[1-3,19-21].

Finally, a higher prevalence of burnout was also observed in military nursing workers who had morning or mixed shift. Having the morning shift was also associated with burnout in the military nursing from the US Army[18,21]. This issue is probably associated with different nursing contexts and workers, not only the military, because the morning shift in health institutions presents a series of nursing routines, often complex. In addition, there are a significant number of technical procedures carried out at this period, such as hygiene, comfort, administration of medication, referral of patients, dressings, drilling, Nursing Care Systematization and management routines[1-2,18-21].

In terms of that, in view of the variables associated with burnout in military nursing workers, it can be said that there are elements of the work setting that can favor the increase of stress levels and possibly bring about damages to health[18,21,23]. Conclusively, it is necessary to think of strategies that favor the military nursing workers' health, strengthening them to serve the Brazilian nation with quality of life, thus having a positive repercussion on the efficiency of carrying out the military activities[23]. Also, that the variables related to this service can be controlled and minimized when associated with burnout.

Study limitations

Lack of availability of studies that specifically address burnout in military nursing of Armed Forces is observed as a limitation of the research for greater comparison with the results found. In addition, it is highlighted a carried out cross-sectional study, which does not allow elicit causality, as well as the use of a sample for convenience.

Contributions to Nursing, Health and Public Policy

It is believed that the findings of the study provide a substantial diagnosis of burnout in a poorly accessed population. It also may help the Brazilian Army Command in organizing plans to prevent and combat occupational diseases in military nursing and fill a gap in literature on burnout studies.

CONCLUSIONS

In association of burnout with sociodemographic and occupational variables, it was identified relevant statistical relation to MHO, time of practice in nursing and military nursing, work shift, leisure activities and amount of hours worked.

In the adjusted analyzes, it was identified that the workers of military nursing from a Military Hospital of Area, had time of practice in the military nursing over four years and did not carried out leisure activities, presented prevalence up to 20% higher of burnout. These variables could also be influenced by the high amount of hours worked in the month. Since this is an inherent factor in military activity, where there is no fixed workload, but rather work according to the need of service at the level of exclusive dedication, according to specific legislation.

The results of this study shows the need for specific attention to the military nursing worker's health, encouraging the creation of plans of prevention and handling of occupational diseases, helping to improve quality of life for these workers.

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