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EVALUATION OF PHYSICAL AND MENTAL FATIGUE IN NURSING PROFESSIONALS WORKING IN THE URGENCY AND EMERGENCY SECTOR

Aline Oliveira Russi Pereira[1], Sérgio Valverde Marques dos Santos[2], Fabiana Cristina Taubert de Freitas Swerts[3], Joab Jefferson da Silva Xavier[4], Aida Maria de Oliveira Cruz Mendes[5], Maria Lúcia do Carmo Cruz Robazzi[6]

ABSTRACT

Objective: to evaluate the physical and mental fatigue of nursing professionals working in the urgency and hospital emergency sector.

Method: this is a cross-sectional and quantitative study conducted in the urgency and emergency sector of a hospital located in Minas Gerais, Brazil, in 2016, with 37 nursing professionals. For data collection, an instrument was used for sociodemographic and occupational assessment, and the Chalder Fatigue Scale was used to evaluate physical and mental fatigue. Results: the majority of participants were female (73%), single (54.1%), with a mean age of 30.5 years, were non-smokers and did not practice physical activity (62.2%). With regard to the professional category, the majority were nurses I (43.2%), working in this profession and in the institution for up to five years (40.57%, 59.4% respectively), and for three years in the sector (56.7%), with a work load of 8 hours/day (75.5%). Regarding physical fatigue, workers reported that they sometimes felt tired easily (32.4%), needed rest (40.5%), and felt weak (24.3%). In the case of mental fatigue, they reported that they sometimes had concentration problems (21.6%), difficulty to think clearly (18.9%), and memory problems (10.8%). In the sum of the scores of the fatigue items, 35.1% had fatigue (13), while 64.8% (24) had no physical or mental fatigue.

Conclusion: the work environment of nursing professionals can cause fatigue and can have consequences on their health. It is therefore important to promote the quality of this environment and the health of those who work in it.

Keywords: Fatigue; Worker's health; Nursing; Emergency Nursing.

Palabras clave: Fatiga; Salud del trabajador; Enfermería; Enfermería en Emergencia.

Palavras-chave: Fadiga; Saúde do trabalhador; Enfermagem; Enfermagem em Emergência.

1. Enfermeira, Mestre em Ciências pela Escola de Enfermagem de Ribeirão Preto, Universidade de São Paulo, Ribeirão Preto, SP, Brasil. E-mail: medicinadotrabalho.scpassos@gmail.com Orcid: https://orcid.org/0000-0002-2237-6899

2. Enfermeiro, Mestre, Doutorando em Ciências pela Escola de Enfermagem de Ribeirão Preto, Universidade de São Paulo, Ribeirão Preto, SP, Brasil. E-mail: sergiovalverdemarques@hotmail.com Orcid: https://orcid.org/0000-0001-9412-9515

3. Fisioterapeuta, Doutora, Professora na Escola de Enfermagem de Ribeirão Preto, Universidade de São Paulo, Ribeirão Preto, SP, Brasil. E-mail: fabi.taubert@hotmail.com Orcid: https://orcid.org/0000-0002-2103-4950

4. Educador Físico, Doutor em Ciências pela Escola de Enfermagem de Ribeirão Preto, Universidade de São Paulo, Ribeirão Preto, SP, Brasil. E-mail: joab.usp@gmail.com Orcid: https://orcid.org/0000-0001-5748-1018

5. Enfermeira, Doutora, Professora do Curso de Enfermagem. Escola Superior de Enfermagem de Coimbra, Coimbra, Portugal. E-mail: acmendes@mail.esenfc.pt Orcid: https://orcid.org/0000-0002-1992-9632

6. Enfermeira do Trabalho. Professora Titular da Escola de Enfermagem de Ribeirão Preto, Universidade de São Paulo. Ribeirão Preto, SP, Brasil. E-mail: avrmlccr@eerp.usp.br Orcid: https://orcid.org/0000-0003-2364-5787

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Corresponding author:
Aline Oliveira Russi Pereira
Endereço: R. Santa Casa, 164 - Centro, Passos - MG, 37904-020
E-mail: medicinadotrabalho.scpassos@gmail.com

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INTRODUCTION

The work condition experienced by nursing workers, especially in hospital organizations, has resulted in health damages in general arising from the work environment, the organization structure, and unhealthy activities that they perform[1], associated to physical, chemical and biological agents and ergonomic and psychosocial factors [2].

Regarding the ergonomic and psychosocial risk factors, research presents evidence that muscular tension following stress can happen, in part, due to the close association between psychosocial aspects and musculoskeletal disorders, and the close relationship between the psychosocial, biomechanical, organizational and individual contexts in the development and intensification of this framework of multifactorial nature [3-4].

The profile of illness of workers has been modified due to stress and mental fatigue, phenomena generated by the work. Studies show that the most frequent causes of incapacity for work are mental disorders, musculoskeletal diseases, and cardiovascular diseases [5-8].

Certain types of activities performed by nursing professionals are more likely to cause harm. This implies that these professionals are a risk group for work-related diseases. They are examples of groups that are constantly exposed to various health risks, especially during the handling of patients, which can lead to fatigue [9].

Studies on fatigue have demonstrated its importance in relation to workers, which due to the high prevalence in several populations, cause a loss of quality of life. Thus, the identification and minimization of factors that can cause illness becomes a crucial aspect for the quality of life of individuals, for companies, and for the health and social security system, which can act in a preventive way, intervening before the diseases appear or in the sense of preventing their progression [10-11].

Increased absenteeism due to illness among nursing workers and constant complaints of fatigue, irritation, stress and pain related to the musculoskeletal system indicate the need for health monitoring and promotion of these professionals(12-14).

Thus, the importance of assessing the fatigue levels of nursing professionals in the urgency and emergency sectors is justified.

Such assessment is useful to generate more knowledge about the health complaints and reality of these workers, besides promoting information for the monitoring of health promotion. Thus, the objective of this study was to evaluate the physical and mental fatigue of nursing professionals working in the urgency and emergency hospital sector.

METHOD

This is a descriptive, cross-sectional, quantitative study conducted at an urgency and Emergency Unit of a philanthropic hospital in southern Minas Gerais, Brazil. In this unit there were 78 nursing workers distributed in three shifts. In the morning and evening shifts of this Unit, the nursing team was composed of 47 professionals; all were invited to participate in the research. Professionals of the night shift did not participate in the research because of difficulties to approach them and collect data.

In this study, the inclusion criteria were the active and full-time nursing professionals working in the morning and evening shift. Professionals who were on maternity or sick leave, who presented some type of restriction due to musculoskeletal problems or were under physical therapeutic and/or psychotherapeutic treatment were excluded due to symptoms of pain and/or musculoskeletal discomfort and/or fatigue.

Thus, 5 workers on medical leave, 2 on maternity leave, and 3 on physical therapeutic treatment were excluded. In this way, 37 workers participated in the study (48.7% in relation to the total of the Unit).

Data collection was performed in the hospital sector, at times established by the management, so that it did not interfere with the development of daily activities. The participants received closed envelopes containing the self-administered instruments and the Informed Consent Term. A brief presentation of research and instruments was made.

Two instruments were used for data collection. The first one, for the characterization of the professionals, was created by the authors and was initially subjected to a process of refinement with physicians and specialists of the area. Later, a pilot test was carried out with other workers not belonging to the sector to see whether the questions were comprehensible. The instrument consisted of 23 semi-structured questions, developed to verify information on sociodemographic cha-

racteristics (sex, age, race, marital status), life habits (smoking, alcoholism, physical activity), and work habits (professional performance, time in the nursing profession, in the institution, and in the sector, work shift, other employments, type of employment, daily workload).

The second instrument was Chalder Fatigue Scale(15) validated in Brazil and used to measure the physical and mental fatigue of workers. This is a Likert-type scale with 11 items, containing questions about symptoms of physical and mental fatigue, with a score raging from zero to three for each item. In the bimodal calculation, the values of zero and one are considered as zero, and the values two and three are considered as one; when the sum is greater than or equal to four, this characterizes the presence of fatigue(16).

The collected data was typed in an MS--Excel spreadsheet, version 2010, for the elaboration of the database. Double typing was adopted to avoid transcription errors and the Statistical Package for the Social Sciences version 17.0 was used for statistical descriptive analysis. Tables with the following descriptive data were used to present the results: absolute values, percentages, means, medians, and standard deviations.

Based on Resolution 466 of 2012, this study was approved by the Research Ethics Committee of the School of Nursing of Ribeirão Preto of the University of São Paulo (EERP-USP), according to Opinion nº 1,689,255. The Institution authorized the research and the participants who signed the Informed Consent Form.

RESULT

The research participants showed that the majority were female (73%), single (54.1%), and white (51.4%). It should be mentioned that 27% of the sample was composed of men, 43.2% were married or had partners, and 2.7% were separated.

It was also verified that the mean age of the participants was 30.5 years, SD = 6.23, minimum age 22 and maximum age 46. Regarding tobacco use, it was observed that 86.5% of participants were not smokers. Regarding the consumption of alcoholic beverages, 40.5% of the participants reported not consuming them. Of those who consumed it, 27% reported that such consumption was rare.

With regard to the practice of physical activity, it was verified that the majority of the professionals were sedentary (62.2%). As for those who practiced physical activity, 21.6% practiced it daily, 10.8% weekly, and 5.4% rarely.

Table 1 presents the distribution of the participants according to variables of professional categorization. The professionals are differentiated according to the professional development program of the Institution. Nurses I and II work in direct patient care, including bedside care. Nurses III assist the nursing coordinator and assume the responsibility when he is absent.

Table 1 - Distribution of nursing professionals according to the variables "professional category", "time in the nursing profession", "time in the institution", and "time in the sector". Minas Gerais, Brazil, 2016 (n = 37)

VARIABLES	F	%
PROFESSIONAL CATEGORY		
Nursing Technician	14	37,8
Nurse I	16	43,2
Nurse II	1	2,7
Nurse III	5	13,5
Nursing coordinator	1	2,7
TIME IN THE NURSING PROFESSION		
Up to 5 years	15	40,5
6 to 10 years	10	27
11 to 15 years	5	13,5
16 to 20 years	3	8,1
No answer	4	10,8

VARIABLES	F	%
TIME IN THE INSTITUTION		
Up to 5 years	22	59,4
6 to 10 years	5	13,5
11 to 15 years	3	8,1
16 to 20 years	1	2,7
No answer	6	16,2
TIME IN THE SECTOR		
Up to 3 years	21	59,7
4 to 6 years	5	13,5
7 or more years	5	13,5
No answer	6	16,2

Regarding the professional category, the majority of the workers were Nurses I (43.2%), with predominance of up to 5 years in the nursing profession (40.5%), up to 5 years in the institution (59.4 %), and up to 3 years in the urgency/emergency sector (56.7%) (Table 1).

Table 2 shows the distribution of the participants according to the variables shift, workload and double shift.

Table 2 - Distribution of nursing professionals according to the variables "shift in the institution", "other employments", "type of employment", and "daily workload". Minas Gerais, Brazil, 2016 (n = 37).

VARIABLES	F	%
WORK SHIFT AT THE INSTITUTION		
Morning	18	48,6
Evening	13	35,1
Temporary substitute worker	6	16,3
OTHER EMPLOYMENTS		
Yes	10	27
No	27	73
TYPE OF EMPLOYMENT*		
Caregiver of elderly	2	20
Hospital in another city	2	20
Another Hospital in the same city	1	10
Collection point	1	10
Teacher	1	10
SAMU†	3	30
DAILY WORKLOAD		
8 hours	28	75,5
10 hours	2	5,4
12 hours	3	8,1
More than 12 hours	4	10,8

* Only professionals who reported having another employment.
†Emergency Mobile Care Service.

A higher percentage of participants reported working in the morning shift (48.6%), having no other paid activity (73%), and having a workload of 8h/day (75.5%). Of the 27% who reported having another job, they worked in the Mobile Emergency Care Service (SAMU) (30%) (Table 2).

Table 3 presents the data obtained through responses to the Fatigue Scale, according to the items of physical and mental fatigue.

Table 3 - Distribution of nursing professionals according to physical fatigue items of the Chalder Fatigue Scale. Minas Gerais, Brazil, 2016 (n = 37)

PHYSICAL FATIGUE ITEMS	NEVER		RARELY		SOMETIMES		ALWAYS		TOTAL	
	f	%	F	%	f	%	f	%	f	%
I felt tired easily	8	21,6	16	43,2	12	32,4	1	2,7	37	100
I needed to rest more	5	13,5	17	45,9	15	40,5	0	0	37	100
I was sleepy	13	35,1	14	37,8	8	21,6	2	5,4	37	100
I could not start anything	22	59,5	10	27,0	4	10,8	1	2,7	37	100
I felt lack of motivation	11	29,7	17	45,9	7	18,9	2	5,4	37	100
I felt less strength in my muscles	15	40,5	15	40,5	7	18,9	0	0	37	100
I felt weak	15	40,5	13	35,1	9	24,3	0	0	37	100

Regarding physical fatigue, it was observed that some of the workers reported that they "sometimes" felt tired easily (32.4%), needed rest (40.5%), were sleepy (21.6%), were unable to start anything (10.8%), felt lack of motivation (18.9%), felt less muscle strength (18.9%), and felt weak (24.3%).

Table 4 - 3 - Distribution of nursing professionals according to mental fatigue items of the Chalder Fatigue Scale. Minas Gerais, Brazil, 2016 (n = 37).

MENTAL FATIGUE ITEMS	NEVER		RARELY		SOMETIMES		ALWAYS		TOTAL	
	f	%	F	%	f	%	f	%	f	%
I had trouble concentrating	16	43,2	13	35,1	8	21,6	0	0	37	100
I had trouble thinking clearly	18	48,6	12	32,4	7	18,9	0	0	37	100
I had trouble finding the right word	15	40,5	15	40,5	7	18,9	0	0	37	100
I had memory problems	22	59,5	11	29,7	4	10,8	0	0	37	100

Regarding the analyzed items related to mental fatigue, there were reports that the workers "sometimes" had trouble to concentrate (21.6%), to think clearly (18.9%), to find the right word (18.9%), and memory problems (10.8%) (Table 4).

As for the presence of fatigue in the workers, the Chalder Fatigue Scale showed that 35.1% of the evaluated professionals presented fatigue because the sum of the values of the items was greater than or equal to four, characterizing a framework of presence of this health problem.

DISCUSSION

The results of this study and comparisons with data from the existing literature indicate that factors related to work organization greatly influence psychic disorders of workers [17].

Historically, nursing in Brazil has emerged and continues to be exercised mostly by female workers [18]. It was observed that the sample of this study was composed mostly of female nursing professionals. In the research "Profile of Nursing in Brazil" carried out by the Oswaldo Cruz Foundation (FIOCRUZ) as an initiative of the Federal Nursing

Council (COFEN) in 2015, with 1.6 million nursing professionals in the country, it was pointed out that the nursing team is composed by 84.6% of women [19].

In this study, most professionals did not use tobacco. A study with 570 nursing workers showed that 19% were smokers, a higher number than that obtained in the system of "Surveillance of risk factors and protection against chronic diseases through telephone inquiry", carried out by the Ministry of Health in the capitals and in the Federal District, which was 15.2% [20]. Regarding the consumption of alcoholic beverages, an investigation showed that 46% of the nursing professionals who participated in the study consumed alcoholic beverages [21].

Alcohol consumption may not have a specific relation to work, but it may be a faster way of reducing occupational stress [22]. Since health professionals are viewed as educators, drinking and smoking habits do not fit the profession. Health professionals often need to convince their clients to health-friendly actions; s when they have these habits they become less convincing [21].

In this study, the majority of workers did not practice physical activity (62.2%). A study carried out in Campinas (SP) with nursing workers showed that only 17.2% of the workers performed physical activity for at least 150 minutes, five times a week, as recommended by the Ministry of Health [20], and these results were similar to the data of the present study.

Physical activity is critical to maintaining adequate physical and mental health conditions to work. In an investigation that aimed to evaluate the Occupational Work Capacity (OWC) index of nurses of a university hospital, these professionals were questioned about the regular practice of physical activity (three times a week), and it was observed that a group of professionals who practiced it presented better OWC than the others, although without statistical significance [23].

Regarding the professional category, the majority of workers were nurses, which differs from a study conducted in Campinas [20] where 22.3% of the nursing workers interviewed were nurses, 16.3% were nursing technicians, and 61.4% nursing assistants. The time working as nursing professionals in this study was up to 5 years. A longer time of work was found in other studies: on average 10.7 years in the profession, and 5.8 years in the sector. Studies [24-25] point out that the longer the time acting in the nursing

profession, the greater the experience of the professionals, which may not result in better health conditions, especially when it comes to mental illness.

In this investigation, most of the professionals worked in the morning shift. The predominance of this shift can be explained by the fact that the hospital dynamics are more concentrated in day hours, during which most of the nursing procedures, medical exams, elective surgeries and other actions are performed. However, in another study, only 34.4% of the respondents were in the daytime shift [20].

With regard to fatigue complaints, the presence of mental and physical fatigue can lead to the onset of stress and reduce the performance in work activities. Fatigue among nurses working in hospitals may be associated with lower satisfaction, greater workload, and negative patient outcomes, as well as with greater turnover of professionals [26-27].

There was a predominance of individuals who reported absence of fatigue. A similar result was found in a study in which the prevalence of intense fatigue in nursing workers with a workload of up to 44 hours a week was 22% [17]. In another study with hospital nursing workers in China, the prevalence of acute fatigue was found to be 54.9%, and the explanatory variables were the lack of rest between shifts, work demands, sleep quality, exposure to risks in the hospital environment, and control over work [28].

Identifying fatigue among such workers should be a priority of many organizations around the world so as to promote a patient safety culture and a healthy nursing workforce [27].

Nursing professionals are the health workers most present in the care of people in emergencies. The work in the urgency and emergency sector requires agility and safety during activities, as well as emotional balance [29]. Therefore, issues such as physical and mental fatigue should be minimized in these sectors in order to prevent health problems in workers and promote the quality of care.

In urgency and emergency activities, nursing actions involve physical, mental, emotional and psychological effort. This is due to the need for attention, activities with a high degree of complexity; fast pace of work, excessive working hours, and few hours of rest. These factors can lead to the appearance of occupational problems such as oc-

cupational stress, physical and metal fatigue, burnout, among others [30].

As limitation, the study had a low number of participants, because those who were excluded were being treated for musculoskeletal problems. However, the study contributes to the knowledge in the theme "fatigue" and demonstrates the need for local managers to devise measures to prevent this serious health problem among nursing workers.

Thus, the study may contribute to elicit articulated and in-depth discussions about the institution under study, aiming at its continuous improvement, with a view to promoting its refinement in occupational health with a more critical and shared reflection, considering that it is an institution of reference in the regional health scenario.

CONCLUSION

It was found that part of the staff of the nursing team of the urgency and emergency sector presented physical and mental fatigue, and they were mostly women and nurses.

The work environment of nursing professionals can cause fatigue and have consequences on their health. It is, therefore, important to promote the quality of this environment and the health of those who work in it, promoting strategies that can minimize the level of fatigue in workers.

It is also necessary that nursing professionals be educated about factors to prevent physical and mental fatigue, with the participation of their managers, taking into account the adoption of measures that promote the quality of life and work of nursing professionals who work in urgency and emergency situations and in other sectors.

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