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ORIGINAL ARTICLE

OCCUPATIONAL STRESS AND SENSE OF COHERENCE IN INTENSIVE CARE CENTER NURSING

ESTRESSE OCUPACIONAL E SENSO DE COERÊNCIA NA ENFERMAGEM DE CENTRO TERAPIA INTENSIVA

ESTRÉS LABORAL Y SENTIDO DE COHERENCIA EN ENFERMERÍA DE CENTRO DE CUIDADOS INTENSIVOS

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ABSTRACT

***Objetive*:** evaluate whether there is a relation between sociodemographic and professional characteristics, physical health aspects, presence of occupational stress, and sense of coherence among the various nursing professional categories working at the intensive care center. ***Method*:** observational, descriptive, and correlational study with a cross-sectional design. Data were organized and entered into a spreadsheet in the software *Microsoft Excel*. Fisher's test was adopted for statistical analyses, with a significance level of 5%. The study was approved by the Research Ethics Committee of the Clinics Hospital of Ribeirão Preto, under the Protocol 12893/2010. ***Results*:** 56% of nursing professionals had intermediate exposure to stress and 24% had high exposure to stress. ***Conclusion*:** the nursing team is exposed to stress, however, the social and professional characteristics and the physical health aspects of each nursing category are different and such differences must be considered when planning strategies to promote worker's health. ***Descriptors*:** Stress; Intensive Care Center; Nursing.

RESUMO

***Objetivo*:** avaliar se há relação entre características sociodemográficas e profissionais, aspectos de saúde física, presença de estresse ocupacional e senso de coerência entre as diferentes categorias profissionais de enfermagem que atuam em centro de terapia intensiva. ***Método*:** estudo observacional, descritivo e correlacional com corte transversal. Os dados foram organizados e inseridos em planilha no programa *Microsoft Excel*. O teste de Fisher foi adotado para as análises estatísticas, com nível de significância de 5%. O estudo foi aprovado pelo Comitê de Ética em Pesquisa do Hospital das Clínicas de Ribeirão Preto, sob o Protocolo n. 12893/2010. ***Resultados*:** 56% dos profissionais de enfermagem apresentaram exposição intermediária ao estresse e 24% apresentaram alta exposição ao estresse. ***Conclusão*:** a equipe de enfermagem encontra-se exposta ao estresse, porém, as características sociais e profissionais e os aspectos de saúde física de cada categoria da enfermagem são diferentes e tais diferenças devem ser consideradas quando se planeja estratégias de promoção da saúde do trabalhador. ***Descritores*:** Estresse; Centro De Terapia Intensiva; Enfermagem.

RESUMEN

***Objetivo*:** evaluar si existe una relación entre características sociodemográficas y profesionales, aspectos de salud física, presencia de estrés ocupacional y sentido de coherencia entre las diferentes categorías profesionales de enfermería que actúan en el centro de cuidados intensivos. ***Método*:** estudio observacional, descriptivo y correlacional de sección transversal. Los datos fueron organizados e introducidos en una hoja de cálculo en el *software Microsoft Excel*. Se adoptó la prueba de Fisher para los análisis estadísticos, con un nivel de significancia de 5%. El estudio fue aprobado por el Comité de Ética en Investigación del Hospital de Clínicas de Ribeirão Preto, bajo el Protocolo 12893/2010. ***Resultados*:** el 56% de los profesionales de enfermería presentaron exposición intermedia al estrés y el 24% presentaron alta exposición al estrés. ***Conclusión*:** el equipo de enfermería está expuesto al estrés, sin embargo, las características sociales y profesionales y los aspectos de salud física de cada categoría de enfermería son diferentes y estas diferencias deben ser consideradas en la planificación de estrategias para promover la salud del trabajador. ***Descriptores*:** Estrés; Centro de Cuidados Intensivos; Enfermería.

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INTRODUCTION

Nursing is recognized worldwide in the scientific literature as a stressful profession, with daily challenges for professionals and health institutions.[1-7] According to Robert Karasek's Demand-Control and Social Support Model, stress occurs when work requirements are not in equilibrium with worker's capabilities, resources, or needs, generating harmful physical and emotional responses.[8] In this theoretical model, there is the possibility of evaluating the risk of workers developing stress, certain diseases, or disorders related to them.

In this study, we also chose to evaluate the capacity for coping with stress, by means of Antonovsky's Sense of Coherence. Sense of Coherence is the key construct of the Salutogenic Theory and it intends to explain successful strategies for coping with stress.[9,10]

Sense of Coherence is defined as a global orientation expressing a person's ability to trust that makes, in her/his existence, the stimuli from the internal and external environments structured, predictable, and explicable (understanding). Resources are available so that this person can meet the demands imposed by these stimuli (management) and these demands are changes that deserve investment and engagement (significance).[9,10]

The Brazilian nursing practice is based on the tripod formed by care, teaching, and research. And it divides nursing professionals into: nurses, nursing technicians, and nursing assistants (Law 7,498/86). Regarding nursing assistants/technicians, their activities are characterized by division of labor, repetitive and mechanical work, and they seek meeting the needs of the sector and other professionals.

Such a finding, combined with our professional experience, leads us to the following questions:

- Do not nursing assistants/technicians end up receiving a more concentrated burden of care, thus becoming more vulnerable to stress?
- Could not the intense appreciation of administrative and bureaucratic spheres, even temporarily, provide nurses with distance from a stressor? Or are they equally overloaded with work?

It is believed that this study is relevant both due to the need to evaluate nursing professionals working at specific nursing areas and to the lack of studies shedding some light on associations between the variables considered here.

We hope to establish a diagnosis of the situation of nursing professionals, in order to promote the management of human resources, the comparison between the various units, the detection of problems related to the work environment, besides fostering mental health programs aimed at the worker and at stress management. We also seek resources so that nurses can supervise nursing assistants/technicians.

OBJECTIVE

- To evaluate whether there is a relation between sociodemographic and professional characteristics, physical health aspects, presence of occupational stress, and sense of coherence among the various nursing professional categories working at the intensive care center.

METHOD

This is an exploratory, descriptive, and correlational study with a cross-sectional design and a quantitative approach.

The study was conducted in July 2011 with nursing professionals working at the adult Intensive Care Center (ICC) of the Clinics Hospital of Ribeirão Preto. Within the data collection period, the ICC had in its staff 14 nurses and 52 nursing assistants/technicians, distributed into work shifts.

Aiming to have two groups of nursing professional categories paired as for characteristics such as age and gender, the individuals who met the criteria were drawn. Since this is an exploratory study, we defined a convenience sample totaling 25 participants. The inclusion criteria were: being a nursing professional, belonging to the staff of the intensive care center, and being not in vacation or sick leave at the time of data collection.

The workers were instructed by the researcher and they received the Free and Informed Consent Term (FICT) and the questionnaire containing all instruments proposed in this research.

The following instruments were used: Sociodemographic and professional characterization and physical health aspects; Psychotropic self-medication questionnaire; Job Stress Scale (JSS) - abridged version; Alcohol Use Disorders Identification Test (AUDIT); Antonovsky's Questionnaire of Sense of Coherence (AQSC); Questionnaire of tobacco use assessment; calculation of the body mass index (BMI).

The approach to participants was made in a direct way, researcher-volunteer, contributing to the collaboration of volunteers. Every two days, on average, the researcher went to the workplace to get the questionnaires and FICTs. The fact that it was a former researcher's workplace may have contributed to achieve 100% of questionnaires filled in.

BMI was calculated by dividing weight in kilograms by squared height in meters. We considered as overweight, both for man or woman, a BMI > 25 kg/m^2. It is considered as normal a BMI between 20 and 25 kg/m^2. Regarding obesity, from 30 to 35 kg/m^2 it is obesity degree I, between 35 and 40 kg/m^2 it is obesity degree II, and above 40 kg/m^2 it is obesity degree III.[11]

As for the use of alcoholic beverages and considering the score and classification of AUDIT, 0 point is abstainer; equal to or less than 7 points ranks as low risk user; from 8 to 15 points she/he is a risky user; from 16 to 19 points this is a harmful use; and above 20 points it is probable alcohol dependence.

As for the management of missing data, we followed the criterion indicating that only those participants who had 20% or more unanswered items on a given scale should be excluded from the sample, something which did not occur during the collection of data for this research. In case the participants do not reach the maximum number of unanswered data, according to this criterion, their data are replaced by the average of their answers to the other items of the dimension or scale.[12]

Data were organized and entered into a spreadsheet in the software *Microsoft Excel*, in the form of database. It is noteworthy that a single ID was assigned to each response of subjects and the answers were coded into numerical categories.

Fisher's test was chosen to perform the statistical analyses, because it is suitable for small samples in which we wish to compare the proportions of cases in categories of two by two, with a significance level of 5%.

This study was approved by the Research Ethics Committee of the Clinics Hospital of Ribeirão Preto, under the Protocol 12893/2010.

RESULTS

The study participants were predominantly women (92%), most of them had a partner (72%) and no children (60%). Regarding workers' age, it ranged between 22 and 48 years, with an average of 35 years (SD = 8.15). There were remarkable differences on marital status and number of children between the categories nurses and nursing assistants/technicians; 54.5% of nurses live with a partner, considering losses of 9.5%, and 18.2% have children; in turn, among the nursing assistants/technicians, 83.3% have a partner and 57.1% have children.

Regarding the professional category, 44% were nurses and 56% were nursing assistants/technicians. The length of nursing experience among participants was, on average, 111.64 months (SD = 83.59), ranging from 24 to 285 months. The length of work experience in the current sector was, on average, 63.3 months for nurses and 82.43 months for nursing assistants/technicians.

As for the weekly workload, most nursing assistants/technicians worked for 30 hours per week (71.4%), while the nurses had various workloads. Most of the study participants had a day shift (76%), a period from 7 a.m. to 7 p.m.

In relation to other significant activities and considering the whole sample, 9 (36%) mentioned other activities, such as: household chores, being a wife and mother (n = 3), attending a graduate course (n = 2), double employment (n = 3), and attending some course (n = 1).

The ICC was chosen as the preferred sector to work by 72.7% of nurses and 57.1% of nursing assistants/technicians. Considering their labor market, 42.8% of nursing assistants/technicians consider their wage as good, while only 9.1% of nurses consider their wage as good. In turn, regarding the workplace, 45.4% of nurses are satisfied and 45.4% consider it as inappropriate. Among the nursing assistants/technicians, 85.7% answered that the workplace was satisfactory.

As for the relationship with colleagues, most nursing assistants/technicians (92.3%) and nurses (81.9%) consider it as good or very good.

Taking into account former workplaces and occupations, 18 participants (72%) think that the ICC, their current sector, has more work overload factors, followed by 3 (12%) who consider it as indifferent, i.e. the workplaces are alike in terms of work overload, and 4 (16%) had no answer.

Concerning unemployment, 15 (60%) professionals have never been unemployed, 9 (36%) have already gone through a period without a job, 1 (4%) provided no answer. Comparing the current sector to the unemployment period, out of the same 9 professionals, 6 consider the ICC as having more work overload factors and 3 consider it as having less work overload factors than the period within which they were unemployed.

The participants reported 36% of work absence in the last year among the nursing professional categories. The reasons, among the whole sample, were sick leave (n = 8), sick children (n = 2), and death of a relative (n = 1).

Regarding sleep quality, among nurses, there was 1 blank answer, 45% reported not waking up feeling rested. In turn, among the nursing assistants/technicians, 86% said they wake up still feeling tired.

At the end of the workday, among the whole sample, 88% feel physically and mentally tired, 8% of them feel a little tired, and none of them think to leave feeling fine at the end of the working day, with 1 blank answer to this question.

Among nurses, 36% are satisfied with their body and 64% are not satisfied and want to lose weight. Among the nursing assistants/technicians, 14% are satisfied and 86% are not satisfied with their body.

We observed that the average BMI among nurses was 25.66 kg/m^2, considered as overweight, while the average among nursing assistants/technicians was 33.79 kg/m^2, considered as obesity degree I. It is noteworthy that the lowest BMI found corresponds to a healthy weight, there is not in the sample a nursing professional with thinness or underweight. In turn, for obesity degrees I, II, and III there are representatives, and the two latter degrees are considered as severe and morbid, respectively.

In terms of physical exercise, most of the sample, 16 (64%) of nursing professionals, does not practice any kind of physical activity, 4 (16%) people answered to practice physical exercises at least for 30 minutes once or twice a week, 3 (12%) people twice a week, and 2 (8%) people exercise at a frequency of 3 times or more during the week.

When addressing the way how a worker classifies her/his current health status, 64% of nurses classify it from good to excellent, while 43% of the nursing assistants/technicians classify it as good.

As for the presence of any complaint at the time of data collection, there were 4 (16%) blank answers and out of the 21 participants who provided a response, the answers were grouped: pain (spine, legs, head, shoulder, muscle) in 48%; tiredness and exhaustion in 28%; overweight in 12%, and others in 12%.

Out of the 25 nursing professionals, 3 (12%) are hypertensive, 2 (8%) have diabetes mellitus, and 1 participant provided no answer to this question.

♦ Occupational stress of nursing professionals at the ICC

The variable occupational stress was evaluated by means of the abridged version of JSS. Regarding the lost data, there was 1 blank answer to the question J in JSS and 3 blank answers to the question Q in JSS, which, according to the criteria, had their values replaced by the mean values in the domain and, since they do not exceed the maximum number of lost data, no participant was excluded.[12]

As for the descriptive analysis of JSS, it is worth remembering that, first, we chose to perform it as follows: through the sum obtained for the items of each component, Demand (possible range from 5 to 20), Control, and Social Support (both with a possible range from 6 to 24), and, then, through the mean value of items in each domain. Higher values indicate greater Demand, Control, and Social Support. The results related to the descriptive analysis of the components of JSS (abridged version) are shown in Table 1.

Table 1. Descriptive statistics of the Job Stress Scale (abridged version), total means values of each item that makes up the scale for the sample under study. Ribeirão Preto, 2011.

Job Stress Scale	Possible range	Median	Average (SD)
Demand			
Total sample	5 - 20	17	16.6 (1.15)
Nurses	5 - 20	17	17.2 (0.75)
Nursing ass./tech.	5 - 20	16	16.14 (1.23)
Control			
Total sample	6 - 24	18	17.2 (1.55)
Nurses	6 - 24	18	17.8 (1.47)
Nursing ass./tech.	6 - 24	17	17 (1.48)
Social support			
Total sample	6 - 24	16	15.4 (2.36)
Nurses	6 - 24	16	15.4 (2.33)
Nursing ass./tech.	6 - 24	16	15.4 (2.47)

Through the mean values of the whole sample for the domains Demand, Control, and Social Support we highlight that, among nurses, 82% consider their work as having a

high demand, while 43% of the nursing assistants/technicians consider their work as having a high demand. In the domain control, nurses notice a high control of their work (82%), while the nursing assistants/technicians notice a low control over their work (64%). Concerning Social Support, close values were found between nurses (54% of high social support) and nursing assistants/technicians (57% of high social support). Thus, we identified workers with high exposure to occupational stress and, also, with intermediate and low exposure.[13]

Table 2 shows the frequency distribution of these three categories of exposure to occupational stress, where the intersection of high demand and low control leads to high exposure to stress, high demand with high control, low demand and low control determine an intermediate exposure to stress, and, finally, low demand and high control, without exposure to stress

Table 2. Frequency distribution of exposure to occupational stress for the sample of ICC workers. Ribeirão Preto, 2011.

Occupational stress		
	n	%
Without exposure		
Whole sample	5	20%
Nurses	1	9%
Nursing ass./tech.	4	28%
Intermediate exp.		
Whole sample	14	56%
Nurses	9	82%
Nursing ass./tech.	5	36%
High exposure		
Whole sample	6	24%
Nurses	1	9%
Nursing ass./tech.	5	36%

Since one of the main intents of this study is evaluating stress, we included in the questionnaires whether at that moment there were personal problems in worker's life that could be contributing to the feeling of work overload; 45% of nurses and 50% of nursing assistants/technicians said yes. As for family problems, there were 27% and 54% of positive responses among nurses and nursing assistants/technicians, respectively, there were problems within the family that could be contributing to work overload at that time.

We asked workers whether there is or were health problems where the doctor said that the cause might be linked to stress, 45% of nurses and 50% of nursing assistants/technicians said there were health problems. Among the health problems related to stress there was migraine, agitation, insomnia, abnormal menstrual cycle, headaches, blurred vision, blood pressure peaks, continuous fatigue, extrasystole, angina, muscle pain, and recurrent urinary tract infection.

As for the use of alcoholic beverages, it was found among nurses: 2 (18%) abstainers, 7 (64%) low risk users of alcoholic beverages, and 2 (18%) classified as risky users of alcoholic beverages. In turn, among the nursing assistants/technicians, 3 (21%) are abstainers, 8 (57%) low risk users, and 3 (22%) risky users.

As for the perception of increased alcohol use at times of work overload, 4 professionals said yes (2 nurses and 2 nursing assistants). Out of these 4, 3 are already risky users and 1 low risk user.

Regarding tobacco use, 3 (12%) nursing professionals are currently smoking, 22 (88%) do not smoke; 7 (28%) workers used to smoke and 18 (72%) have never smoked.

Among the 3 professionals who currently smoke, the average consumption is 13.3 cigarettes per day (SD = 5.77), a median of 10 cigarettes per day, range from 10 to 20 cigarettes per day. These professionals say they are not smoking more than usual, they can quit smoking when they are very sick and 2 out of the 3 state that in times of work overload they add 20 cigarettes and 5 cigarettes per day, respectively. Despite the perception of increased consumption in times of work overload, among these 3 professionals, only 1 thinks she/he may face problems due to her/his smoking habit.

Twenty-four (96%) nursing professionals denied current use of psychotropic medicines and only 1 (4%) reported current use of them. When addressing the current use of self-medication with psychotropic agents, there was 1 (4%) blank, 1 (4%) positive, and 23 (92%) negative answers; however, taking into account the last year, 3 (12%) nursing professionals said they resorted to self-medication with psychotropic agents.

Among the 3 professionals who said they resort to self-medication with psychotropic agents, frequency ranged from rarely (n = 2) to some frequency (n = 1). The reasons were insomnia and anxiety. The facilitators for self-medication with psychotropic agents were

having them at home, believing that occasional use does not necessarily require a medical consultation and having relatives that use them.

The Sense of Coherence was determined by means of the version adapted to Portuguese of AQSC. The sum of answers to the 29 items may range from 29 to 203, with higher values indicating greater Sense of Coherence.

Among the participants, only 1 volunteer did not answer the question 2 of AQSC, a value that was replaced by the average of their answers to the other 28 items.

Table 3 presents the average, median, standard deviation, and range of AQSC for 25 nursing professionals working at the ICC.

Table 3. Descriptive statistics of Antonovsky's Questionnaire of Sense of Coherence. Ribeirão Preto, 2011.

Variable	n (%)	Average (SD)*	Median	Range
Nurses	11 (100%)	144.64 (16.99)	145	115 - 175
Nursing ass./tech.	14 (100%)	137.57 (27.84)	144.5	52 - 164
Whole sample	25 (100%)	140,68 (23.51)	145	52 - 175

• Association between variables

In the construct Sense of Coherence, there was no significant difference between nurses and nursing assistants/technicians (p = 0.4247), something which was also not found when considering AUDIT (p = 0.5713) by using Fisher's test.

Regarding JSS, when comparing nurses and nursing assistants/technicians as for the domain work demand, we found a p = 0.0575.

In turn, for the domain control, we found a p = 0.0402. We conclude, with the restriction that there was no control for the other variables, that nurses tend to have a greater sense of control over their work than nursing assistants/technicians.

DISCUSSION

The results are separately presented regarding nurses and nursing assistants/technicians, because it they constitute very heterogeneous groups that justify a separate analysis in the studies. The marital status in the sample among nurses indicated that 54.5% had a partner, whereas among nursing assistants/technicians the proportion was 83.3% with a partner. In a study with 203 nurses working at a surgical sector, the proportion of married individuals was 54%[14], a figure similar to that found among nurses in the study.

The highest number of children among nursing professionals with High School education may provide them with less time for self-care, an important factor to be considered when planning preventive actions aimed at worker's health.

The average length of nursing experience among nurses and nursing assistants/technicians was close (average of 111.64 months), coinciding with the 203 nurses who work at a surgical sector, among whom the average length of nursing experience was 9.3 years (111.6 months).[14]

We found out that 12% of nursing professionals had double employment, something which differs from that found in other studies with nurses who work at intensive care units[15], where most nurses were working in other institutions. In a study with 203 nurses working at a surgical sector, 22.7% had double employment.[14]

Another relevant finding is that 72.7% of nurses were able to choose the ICC as their working sector and only 57.1% of nursing assistants/technicians could do the same. In a study with Brazilian nurses[14], 80.6% of nursing professionals could choose the area where they work.

The dissatisfaction regarding wage in the sample of nursing professionals from the ICC was higher among nurses, however, both categories, nurses (63.6%) and nursing assistants/technicians (85.6%) consider their wage as mean or good. In the literature, we found a positive association between quality of life at work and wage (p = 0.006).[14] Wage as a stressor element was related only to nurses who work as professors.[16]

Professional life was classified among nurses (54.6%) as unsatisfactory, against only 21.4% of nursing assistants/technicians; a difference that deserves further investigation. Nursing professionals who work at a surgical sector, generally, were also dissatisfied in relation to work.[17]

In the sample, 60% of individuals have never been unemployed, suggesting that the area of nursing has high rates of employability. It is noteworthy that 23% of nursing professionals considered the unemployment period as more stressful than working at the ICC.

Unemployment has consequences for the worker, in social, psychological, and moral

terms, as well as for the formation of their identity. This job loss has been associated with low self-esteem and increased anxiety and stress.[18]

Absenteeism in the sample was around 36% the last year. In the Netherlands, a study with nurses from clinical units revealed that the frequency of sickness-related absenteeism increased significantly and it was related to the increased number of working hours.[19]

As for the physical health of nursing professionals from the ICC, 45% of nurses wake up rested and only 14% of nursing assistants/technicians wake up rested. There is a study pointing out that increased levels of stress resulted in worse sleep quality for these subjects[20], corroborating the findings of the study when we consider that among nursing assistants/technicians, 86% reported poor sleep, 36% have high exposure to occupational stress, and 36% intermediate exposure to it.

Nursing assistants/technicians participating in another Brazilian study also had higher BMI and stress; sedentary lifestyle was also observed in more than half of the sample.[21] It was identified, therefore, that the group of nursing assistants/technicians, due to its obesity, needs immediate nutritional assessment and monitoring, followed by a promotion of physical exercise.

Despite the dissatisfaction in relation to their body, nurses (64%) classify their health status as good or excellent and among nursing assistants/technicians this figure was 43%. These data suggest that, for nurses, dissatisfaction is rather related to aesthetics.

The main complaints verbalized were: low back pain, leg pain, tiredness, and exhaustion feeling.

The pressure exerted by short time to fulfill a task associated with high work demand is a risk factor for the onset of musculoskeletal lesions.[22] A frequency of 38.9% of complaints related to the lumbar region within the last 12 months was also identified among 203 nurses from a surgical sector.[14]

In the sample there were, also, 12% of hypertensive and 4% of diabetic individuals. Nurses who worked more than 40 hours per week had a higher risk for type 2 diabetes.[23]

The domains work demand and control also showed a significant difference between nurses and non-nurses - $p = 0.01$ and $p = 0.05$, respectively - in the Brazilian study with 203 nurses from the surgical sector. Professionals with a lower educational level noticed greater support from colleagues and chiefs when compared to the other workers.[14]

In turn, among 292 nurses from a general hospital, there were data different from those of the sample in this study, 49.66% considered work demand as high, 50.34% had low control over work, and 82.88% had low social support at the workplace.[24]

According to the same study, nursing professionals working at intensive care units had higher psychological demand.[24] The findings were in agreement with another study, which also reported higher demand among nurses from intensive care units and lower demand among professionals from the outpatient sector.[25]

It is observed that work demand is the most important factor for compromising the health status of these professionals.[26] In agreement with these authors, it is considered that employers should consider the distribution of work demands, in order to ensure the best relation between this variable and workers.

In the literature, lower values were reported for the dimension control over work among nursing technicians and assistants[22,27], exposing, as a consequence, these nursing categories to occupational stress when work is perceived as involving a high demand.

In the whole sample under analysis (n = 25) we found out that 56% of nursing professionals have an intermediate exposure to occupational stress and 24% a high exposure, something which indicates that 80% of them are exposed to occupational stress. In a study with nurses from other intensive care units, 57.1% perceive their workplace as a source of stress[15], revealing that intensive care sectors require strategies aimed at promoting healthy working environments and processes, strengthening the surveillance of environments, processes, and problems related to work.

Personal problems for 45% of nurses could be contributing to work overload and stress and 54% for nursing assistants/technicians. The study with 292 nurses found that 53.42% indicated significant changes in their lives over the last year, and 56.35% of these changes had a personal nature.[24]

Regarding the manifestations caused by stress, the associations were also physiological and psychological in another study.[15] It was noteworthy as for the psychic aspects the issue of disincentive, discouragement, mental fatigue, nervousness, and irritation, as observed in the study.

A higher rate of smoking was also observed in another study, which found a higher rate of smoking (28%) among nursing assistants/technicians.[21]

The findings related to the use of psychotropic agents, especially for insomnia and difficulty in sleeping, reinforce the previous reports as for sleep quality among professionals from the ICC. The damage to health caused by using sleep medicines is already known in the literature.[20] Nurses who used medicines to sleep, all of them (100%), had a poor sleep quality when compared to nurses who did not use medicines to sleep.

Studies using the demand-control model have identified associations between occupational stress and diseases of the digestive system and work-related musculoskeletal disorders (WMSDs)[28,29], negative self-assessment of the health status[30], work absenteeism[31], cardiovascular diseases[32,33], and their major risk factors, such as hypertension and habits considered as unhealthy, such as smoking, drinking, and using other drugs.[28,34-36]

As for the result of the evaluation of Sense of Coherence, it was found an average of 144.6 (SD = 22.6) among nursing professionals from a surgical sector[14] and 148.23 (SD = 20.22) among pharmacists[37], results which are close to what was found among the nursing professionals from the ICC.

These values for Sense of Coherence suggest that the nursing professionals under study have positive thoughts about various aspects of life, despite they pursue professions considered as stressful. The positive association found between Sense of Coherence and the measure of quality of life (r = 0.30, p = 0.00) at work converges with what was found in another study with Brazilian nurses[14], nursing professionals with a strong Sense of Coherence tend to have higher professional satisfaction.

CONCLUSION

The cross-sectional study has its limitations as for the measures to be taken on a single occasion. It is not possible to access the dynamic aspects of variables over time. Another aspect concerns the fact that a correlational study does not allow establishing causal relations between them.

Nurses and nursing assistants/technicians constitute groups of heterogeneous categories that justify a separate analysis of factors related to worker's health, because, although working at the same kind of work environment, they showed different health priorities implying care aimed at the needs of each professional category. It is also a responsibility of nurses both supervising professionals with a High School educational level and identifying, on an early basis, the nursing professionals facing problems to cope with stress.

The scenario of nursing in Brazil, where the nursing professional is faced with unfavorable working conditions, such as physical, ergonomic, and biological risks, as well as stress, among others, is not suitable at all for the mental health status of these professionals, and it can turn them into a group of risk for the onset of disorders in the coming years.

It is believed that the instruments used in this study regarding occupational stress can, in addition to be used in research, signal problems, be useful for screening, identify professionals at risk, and those who are already in need of treatment. However, there is a need for an interview to identify the history of each worker, the stressful events.

This study corroborates the National Policy of Occupational Health adopted in Brazil, whose guidelines are promoting healthy working environments and processes and strengthening the surveillance of work-related environments, processes, and health problems.

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