



Shift work of nursing professionals and blood pressure, burnout and common mental disorders*


Trabalho em turnos de profissionais de enfermagem e a pressão arterial, *burnout* e transtornos mentais comuns

Trabajo en turnos de profesionales de enfermería y la presión arterial, *burnout* y trastornos mentales comunes

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ABSTRACT

Objective: To analyze the influence of shift work on blood pressure, the presence of burnout and common mental disorders in nursing professionals. **Method:** A cross-sectional study. Burnout was assessed by the Maslach Burnout Inventory, and Common Mental Disorders by the Self-Reporting Questionnaire. Casual blood pressure measurement and Ambulatory Blood Pressure Monitoring (ABPM) were performed. **Results:** 231 professionals participated. The majority (59.7%) worked in shifts, and this condition was associated ($p \leq 0.05$) with: higher weekly workload; doing the night shift; shorter training and work time at the institution; alcoholism; leisure activity; and alteration in ambulatory blood pressure monitoring of the sleep period. The professionals with common mental disorders and who worked in shifts had lower casual diastolic pressure levels ($p = 0.039$) and higher hypertension prevalence ($p = 0.045$). The presence of emotional exhaustion was associated with normal waking blood pressure and depersonalization with altered sleep blood pressure. **Conclusion:** Shift work was associated with a higher prevalence of work-related negative factors, inadequate habits and lifestyles, and change in sleep blood pressure.

DESCRIPTORS

Nursing; Shift Work Schedule; Burnout, Professional; Mental Disorders; Life Style; Hypertension.

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INTRODUCTION

Shift workers are exposed to risk factors for chronic non-communicable diseases such as hypertension, overweight/obesity, hypercholesterolemia and metabolic syndrome, as well as cardiovascular events such as acute myocardial infarction, stroke and coronary artery disease⁽¹⁾.

Shift work is defined as work that is performed intermittently and at different times, without a fixed schedule⁽²⁾, it is related to the stress characteristic of this condition and the resulting physiological responses, such as activation of the neuroendocrine reaction of stress by the hypothalamic-pituitary-adrenal axis and glucocorticoid secretion, and of the autonomic reaction with the release of catecholamines. Prolonged and repeated release of these primary stress mediators with action on different target organs can trigger changes in blood pressure, heart rate, thrombotic and immune response processes, lipid and glucose metabolism, and central nervous system functioning⁽³⁾, increasing the risk of becoming ill.

High blood pressure is considered the single most important risk factor for the global burden of diseases in the world, accounting for more than nine million deaths in 2010⁽⁴⁾, and the association between arterial hypertension and cardiovascular disease, being the main cause of morbidity and mortality, has been widely demonstrated⁽⁵⁾. In this context, a study with doctors and nurses working in shifts showed a significant increase in blood pressure during the work period and an increase in cardiovascular risk⁽⁶⁾. However, it is noteworthy that there are few studies which have evaluated the influence of shift work on blood pressure through 24-hour Ambulatory Blood Pressure Monitoring (ABPM), constituting an important limitation, considering that ABPM enables a more reliable assessment of the blood pressure pattern, including the sleep period. Thus, it can be concluded that analyzing the blood pressure pattern of nurses working in shifts through ABPM is of great value for knowledge construction about the subject, as it will help in shaping future research and guide intervention strategies related to the health of these workers.

Moreover, it is assumed that states of depression, psychiatric disorders and stress may favor developing cardiovascular diseases. From this perspective, Common Mental Disorders (CMD) and Burnout Syndrome (BS) are included⁽⁷⁻⁸⁾.

CMDs are characterized by signs and symptoms related to the mood state, anxiety and substance abuse, which demonstrates disruption in the normal functioning of the individual⁽⁹⁾. In Brazil, CMD prevalence was 35.0%⁽¹⁰⁾ among nursing workers, and 80.6% of the cases among those working in intensive care were associated with Burnout Syndrome⁽¹¹⁾.

Burnout is defined as a multidimensional syndrome, involving three components: emotional exhaustion, depersonalization and low professional achievement, which are associated with work overload of individuals who act directly with people⁽¹²⁾. In Brazil, an evaluation performed through the Maslach Burnout Inventory (MBI) showed that this syndrome was present in 4.7% of nurses in a general

hospital⁽¹³⁾ and in 55.3% of nursing professionals in intensive care units⁽¹⁴⁾. There are different ways to define the presence of Burnout Syndrome at the international level, but the prevalence of high levels of emotional exhaustion (25.0%-45.0%)⁽¹⁵⁻¹⁶⁾, depersonalization (30.0%-42.0%)⁽¹⁵⁻¹⁶⁾ and low professional achievement (28.5%-45.0%)⁽¹⁵⁻¹⁶⁾ is high. The great difference in CMD and BS prevalence among these nursing workers may be related to the severity of the patients in the intensive care unit, and consequently to the increase in the nursing team's workload.

At the same time, shift workers are at greater risk for illness due to the higher prevalence of smoking, alterations in sleeping and being awake and inadequate diet, constituting risk factors which may be related to the work characteristics⁽¹²⁾, with consequent repercussions on quality of life due to adaptations in daily life for performing work activities⁽¹⁷⁾.

Considering that nursing is mainly composed of women who are often exposed to double working hours, and also that nursing professionals are subject to multiple employment responsibilities due to low pay, and consequently to long working days, it is considered that these professionals may have greater vulnerability to sickness in the context of shift work.

In view of the above, the present study aimed to analyze the influence of shift work on blood pressure, the presence of burnout and common mental disorders in nursing professionals.

METHOD

STUDY DESIGN

This is a cross-sectional study.

SCENARIO

This study was carried out in a public hospital specialized in the care of cancer patients, in the city of Rio de Janeiro, Brazil.

SELECTION CRITERIA

Nursing professionals who assisted in caring for cancer patients in hospitalization units and who had been employed by the institution for at least 1 year were included. Professionals who were on leave (n = 11) or pregnant (n = 1) were excluded. There was no exclusion for service time in the hospital of less than 1 year, but eight professionals refused to participate in the study, which left 231 who composed the final sample.

SAMPLE DEFINITION

There were 357 professionals selected out of a total of 574 by means of simple random sampling in order to compose the selected sample (n = 220), plus 10% (n = 22) who participated in the pilot study and loss replacement (n = 115). The sample size was calculated based on the estimate of arterial hypertension prevalence at 40.0% from the eligible population of 574 professionals, and thus the final sample consisted of 231 professionals.

DATA COLLECTION

The professionals were characterized through an interview using the author's own instrument, which contained personal identification variables (gender, age, education, race/color, marital status and monthly income), variables related to work (professional category, specialization, working hours/week, number of jobs, and work shift), lifestyle and habits (smoking, alcoholism, physical inactivity, stress and leisure) and personal antecedents (dyslipidemias, arterial hypertension, angina pectoris, diabetes mellitus, acute myocardial infarction, and stroke).

Burnout was evaluated through the Maslach Burnout Inventory (MBI), a self-reporting instrument composed of 22 items distributed in three subscales: emotional exhaustion (9 items), depersonalization (5 items) and low professional achievement (8 items). The cut-off points for each of the dimensions were based on the table provided by the instrument manual⁽¹⁸⁾: emotional exhaustion (≥ 27), depersonalization (≥ 10) and low professional achievement (≤ 33). The presence of burnout was defined based on the cut-off points for the three dimensions, concomitantly. The instrument showed good reliability for all items (Cronbach's alpha = 0.73) and emotional exhaustion (Cronbach's alpha = 0.88), depersonalization (Cronbach's alpha = 0.67) and low professional achievement (Cronbach's alpha = 0.73).

Common mental disorders were evaluated by the Self-Reporting Questionnaire (SRQ-20), an instrument validated in Brazil which verifies the presence of common mental disorders and disorders characterized by symptoms such as insomnia, fatigue, irritability, forgetfulness, difficulty in concentrating and somatic complaints. The instrument is composed of 20 dichotomous questions (yes/no), the recommended cut-off points are 6 for men and 8 for women, and it had an internal consistency of 0.80 in the present study⁽¹⁹⁾.

The casual blood pressure measurement was performed three consecutive times with a validated automatic device with a 2-minute interval between the measurements, appropriate cuff to the arm size, in the seated position, following the recommendations of the VII Brazilian Hypertension Guideline⁽²⁰⁾. Hypertension was characterized with the presence of at least one of the following possibilities: values of the casual measure greater than or equal to 140 mmHg and/or 90 mmHg, use of antihypertensive drugs or self-reported hypertension.

Ambulatory Blood Pressure Monitoring (ABPM) was performed for 24 hours during a duty day with a validated device, following the recommendations of the V Ambulatory Blood Pressure Monitoring Guideline⁽²¹⁾. The averages and prevalences of 24-hour hypertension, awake and sleep period were evaluated based on the schedules described in the participants' activity reports. The adopted cut-off points for hypertension for systolic and diastolic pressures respectively, were: $\geq 130/80$ mmHg in the 24-hour period; $\geq 135/85$ mmHg in wakefulness; and $\geq 120/70$ mmHg in the sleep period.

DATA ANALYSIS AND PROCESSING

The analysis of the relationships between shift work and the nominal or ordinal variables were done using the Pearson

chi-square test, likelihood ratio or Fisher's exact test. The Mann-Whitney U test or Student's T-test was used for continuous variables, according to the normality of the variables under study, while the mean of the last two measurements of the casual blood pressure was used in analyzing the variable blood pressure. The significance level was 5%, and the data were analyzed in the R version 3.2.1 and SPSS v.20.0 statistical programs.

ETHICAL ASPECTS

The study was approved by the Research Ethics Committee of the Nursing School of the Universidade de São Paulo, under Opinion no. 320.343 of 2013, according to Resolution no. 466/12, of the National Health Council.

Data collection took place between 12/01/2013 and 06/30/2015, and the professionals who accepted to participate in the research signed the Free and Informed Consent Form.

RESULTS

The mean age of professionals was 39.6 years; the majority were female (82.7%), non-white race/color (54.5%) and lived with companion (70.6%). In relation to education, the majority had training compatible with residency/specialization (43.3%) or technical level (33.7%), and an average monthly family income of around R\$9,000 (BRL). Hypertension prevalence was 35.1%.

There was no statistically significant difference between the professional groups in relation to sociodemographic characteristics (data not shown).

Regarding the characteristics related to the professionals' activity, the category of nursing assistant and technicians of clinical oncology and surgical oncology units was predominant. The majority of the professionals were distributed in the daytime, had an employment contract and worked in a routine of approximately 52 hours a week. The average professional training time was around 16 years, being 8 years in the institution (Table 1).

The professionals who worked in shifts were mostly Nursing Assistants/Technicians, did more night shifts, had a higher weekly workload, graduated more recently, and worked less time at the institution ($p \leq 0.05$; Table 1).

Regarding habits and lifestyles, the majority (65.4%) reported physical inactivity and some type of leisure (69.7%). A little less than half (44.6%) were considered stressed, the burnout prevalence was 39.0%, and 57.6% had common mental disorders (Table 2).

The professionals in this study slept an average of 6.0 hours a day, and the most common comorbidities were dyslipidemia (28.1%) and arterial hypertension (25.5%) (Table 2).

The shift workers reported a higher intake of alcoholic beverages (37.0% vs. 19.4%) and had some type of leisure (75.4% vs. 61.3%) (Table 2).

In observing the data in Table 3, altered blood pressure by the casual measure was observed in 13.0%, while 30.0% by ABPM in the 24-hour period, 26.0% by ABPM in the waking period, and 40.4% by ABPM in the sleep period.

Table 1 – Sociodemographic and work-related characteristics of nursing professionals working in oncology, according to shift work – Rio de Janeiro, RJ, Brazil, 2015.

Characteristics related to work	Shift work						P-Value
	Yes		No		Total		
	n	%	n	%	N	%	
Professional Category							
Nurse	61	44.2	23	24.7	84	36.4	0.003
Nursing Assistant/Technician	77	55.8	70	75.3	147	63.6	
Work unit							
Surgical Oncology	54	39.1	30	32.3	84	36.4	0.632 [†]
Clinical Oncology	40	29.0	30	32.3	70	30.3	
Clinical and Surgical Oncology	17	12.3	10	10.8	27	11.7	
Intensive Care Unit	27	19.6	23	24.7	50	21.6	
Work schedule/shift							
Day shift	75	54.3	51	54.8	126	54.5	0.041[†]
Night shift	57	41.3	30	32.3	87	37.7	
Part-time work	6	4.3	12	12.9	18	7.8	
Weekly working hours							
Mean (SD)	54.2 (17.0)		48.7 (12.4)		51.9(15.5)		0.016*
Number of employment contracts							
Mean (SD)	1.53 (0.60)		1.39 (0.51)		1.48 (0.57)		0.079*
1	72	52.2	58	62.4	130	56.3	
≥ 2	66	47.8	35	37.6	101	43.7	
Time since graduation (in years)							
Mean (SD)	15.4 (7.9)		17.6 (7.6)		16.3 (7.8)		0.019*
Institutional working time							
Mean (SD)	7.9 (7.2)		9.6 (7.8)		8.6 (7.5)		0.039
Working tired							
Frequently	53	38.4	35	37.6	88	38.1	0.480 [†]
Sometimes	72	52.2	53	57.0	125	54.1	
Rarely/Never	13	9.4	5	5.4	18	7.8	
Concentration is decreased during the shift							
Frequently	18	13.0	11	11.8	29	12.6	0.293 [†]
Sometimes	63	45.7	52	55.9	115	49.8	
Rarely/Never	57	41.3	30	32.3	87	37.7	

*Mann-Whitney U test; †Likelihood ratio.

Note: (n=231).

The shift workers presented greater changes in blood pressure during sleep compared to those who did not work

in shifts (45.9% vs. 31.8%, $p = 0.036$). No statistically significant differences were observed in the other blood pressure comparisons.

Among the 138 professionals working in shifts, there was a lower prevalence of hypertension among those with common mental disorders (26.2% vs. 42.6%, $p = 0.045$), as well as higher mean casual diastolic blood pressure ($p = 0.039$, Table 4).

In shift workers, there was an association between less emotional exhaustion and altered blood pressure levels in ABPM during the waking period [26.0 (SD = 7.6) vs. 29.9 (SD = 7.6) points] and greater depersonalization and altered blood pressure levels in ABPM of the sleep period [12.2 (SD = 4.6) vs. 10.7 (SD = 4.3) points] (Table 5).

Table 2 – Life habits, anthropometric variables and personal antecedents according to shift work – Rio de Janeiro, RJ, Brazil, 2015.

Habits and lifestyle	Shift work						P-Value
	Yes		No		Total		
	n	%	n	%	n	%	
Smoker	9	6.5	5	5.4	14	6.1	0.720
Alcoholism	51	37.0	18	19.4	69	29.8	0.004
Physical inactivity	93	67.4	58	62.4	151	65.4	0.431
Stress	62	44.9	41	44.1	103	44.6	0.900
Burnout	56	40.6	34	36.6	90	39.0	0.539
Emotional exhaustion: Mean (SD)	28.8 (7.8)		28.3 (7.8)		28.6 (7.8)		0.617
Depersonalization: Mean (SD)	11.4 (4.4)		11.3 (4.0)		11.4 (4.3)		0.986
Low professional achievement: Mean (SD)	29.6 (5.4)		29.9 (5.6)		29.7 (5.5)		0.429
Common Mental Disorders	84	60.9	49	52.7	133	57.6	0.217
Does leisure activity	104	75.4	57	61.3	161	69.7	0.022
Sleep hours Mean (SD)	6.3 (1.5)		6.2 (1.6)		6.3 (1.5)		0.669*
Comorbidities							
Dyslipidemias	33	23.9	32	34.4	65	28.1	0.082
Arterial Hypertension	34	24.6	25	26.9	59	25.5	0.701
Angina <i>pectoris</i>	13	9.4	5	5.4	18	7.8	0.261
Diabetes <i>mellitus</i>	7	5.1	7	7.5	14	6.1	0.443
Acute myocardial infarction	2	1.4	0	0.0	2	0.9	0.517 [‡]
Stroke	0	0.0	1	1.1	1	0.4	0.403 [‡]

*Mann-Whitney U Test; †Likelihood ratio; ‡Fisher's Exact Test;

§Two-tailed Student's t-test.

Note: (n=231).

Table 3 – Characterization of the professionals in relation to blood pressure levels (mmHg) by casual measure and ABPM, according to shift work – Rio de Janeiro, RJ, Brazil, 2015.

Blood pressure	Shift work						P-Value
	Yes		No		Total		
	n	%	n	%	n	%	
Casual							
Altered casual blood pressure	15	10.9	15	16.1	30	13.0	0.244
Systolic: Mean (SD)	118.8(15.1)		121.4(17.2)		119.4(16.0)		0.275*
Diastolic: Mean (SD)	76.6 (11.0)		82.4 (44.1)		78.9 (29.3)		0.323*
ABPM 24 hours							
Altered blood pressure	43	31.9	24	27.3	67	30.0	0.466
Systolic: Mean (SD)	119.2(12.1)		116.3(11.0)		118.1(11.7)		0.123*
Diastolic: Mean (SD)	75.4 (8.8)		73.9 (8.8)		74.8 (8.8)		0.206*
Awake ABPM							
Altered blood pressure	39	28.9	19	21.6	58	26	0.225
Systolic: Mean (SD)	122.5(12.4)		120.1(11.2)		121.5(12.0)		0.206*
Diastolic: Mean (SD)	78.9 (9.1)		77.8 (8.2)		78.5 (8.8)		0.426*
Sleep ABPM							
Altered blood pressure	62	45.9	28	31.8	90	40.4	0.036
Systolic: Mean (SD)	111.7(13.7)		108.6(13.0)		110.5(13.5)		0.072*
Diastolic: Mean (SD)	68.1(10.9)		66.1 (11.2)		67.3 (11.0)		0.108*

*Mann-Whitney U Test; ABPM: Ambulatory Blood Pressure Monitoring.

Note: (n=231).

Table 4 – Characterization of the professionals who worked shifts in relation to blood pressure levels (mmHg) by casual measure and ABPM according to burnout and common mental disorders – Rio de Janeiro, RJ, Brazil, 2015.

Blood Pressure	Shift work (n=138)										
	Burnout					P-Value	Common mental disorders				P-Value
	Yes		No		Yes		No				
	n	%	n	%	n		%	n	%		
Casual measurement											
Altered casual blood pressure	7	12.5	8	9.8	0.611	10	11.9	5	9.3	0.626	
Systolic: Mean (SD)	119.9 (15.5)		118.0 (14.9)		0.557*	117.4 (15.8)		121.0 (13.9)		0.062*	
Diastolic: Mean (SD)	76.1 (10.9)		76.9 (11.1)		0.671*	75.2 (11.4)		78.7 (10.1)		0.039*	
Hypertension	16	28.6	29	35.4	0.403	22	26.2	23	42.6	0.045	
ABPM 24 hours											
Altered blood pressure	16	29.6	27	33.3	0.651	25	30.9	18	33.3	0.763	
Systolic: Mean (SD)	119.1 (11.7)		119.2 (12.4)		0.984*	119.1 (11.6)		119.4 (12.9)		0.793*	
Diastolic: Mean (SD)	75.5 (8.4)		75.4 (9.0)		0.943*	75.1 (8.2)		75.9 (9.6)		0.829*	
Awake ABPM											
Altered blood pressure	15	27.8	24	29.6	0.816	22	27.2	17	31.5	0.587	
Systolic: Mean (SD)	122.2 (12.7)		122.6 (12.3)		0.902*	122.6 (12.4)		122.3 (12.5)		0.678*	
Diastolic: Mean (SD)	79.0 (9.9)		78.8 (8.6)		0.986*	78.9 (8.9)		78.9 (9.4)		0.886*	
Sleep ABPM											
Altered blood pressure	27	50.0	35	43.2	0.438	37	45.7	25	46.3	0.944	
Systolic: Mean (SD)	112.5 (12.6)		111.2 (14.4)		0.487*	112.0 (12.6)		111.4 (15.3)		0.770*	
Diastolic: Mean (SD)	69.3 (10.3)		67.3 (11.2)		0.270*	68.1 (9.9)		68.2 (12.3)		0.914*	

ABPM: Ambulatory Blood Pressure Monitoring; *Mann-Whitney U Test.

Note: (n=138).

Table 5 – Relationship between blood pressure and burnout subscales among nursing professionals working in shifts – Rio de Janeiro, RJ, Brazil, 2015.

	Emotional exhaustion		Depersonalization		Low professional achievement	
	Mean (SD)	P-Value	Mean (SD)	P-Value	Mean (SD)	P-Value*
Arterial Hypertension						
Yes	28.1 (6.8)	0.530	11.1 (4.0)	0.670	30.1 (6.0)	0.515
No	29.2 (8.2)		11.6 (4.7)		29.3 (5.1)	
ABPM 24 hours						
Altered	27.1 (8.4)	0.085	12.3 (4.2)	0.073	29.7 (5.7)	0.979
Normal	29.5 (7.4)		11.0 (4.6)		29.5 (5.3)	
Awake						
Altered	26.0 (7.6)	0.012	12.2 (4.0)	0.113	29.5 (5.7)	0.754
Normal	29.9 (7.6)		11.1 (4.7)		29.6 (5.3)	
Sleep						
Altered	28.1 (8.2)	0.414	12.2 (4.6)	0.036	29.2 (6.2)	0.439
Normal	29.3 (7.4)		10.7 (4.3)		29.9 (4.7)	

ABPM: Ambulatory Blood Pressure Monitoring; *Mann-Whitney U Test.

DISCUSSION

The present study showed statistically significant differences in variables related to work, life habits and altered blood pressure during the sleep period among professionals working in alternating shifts in relation to those who did not work shifts. Also, the professionals who worked in alternating shifts showed differences between the pressure levels and presented emotional exhaustion, depersonalization and CMD.

The greatest change in blood pressure during the sleep period among those who worked in shifts was a particularly relevant finding, as blood pressure during the sleep period is expected to decrease, called a drop. The absence of a drop and the intensity in which it occurs are related to autonomic dysfunction, sleep apnea, nocturnal volume overload, increased mortality, development of lesions in target organs such as left ventricular hypertrophy, reduced myocardial diastolic function, increased prevalence of diabetic retinopathy and decreased glucose tolerance⁽²²⁾.

In this context, a systematic review with a recent meta-analysis involving Brazilian, European and Japanese cohorts considering the reference measurement and parameters provided by ABPM, showed that nocturnal hypertension was the only predictor for cardiovascular events such as acute myocardial infarction or stroke⁽²³⁾. Thus, although the mean blood pressure levels observed at both random and at different periods of ABPM were within the normal range, the hypertension observed during sleep, especially among shift workers, suggests that they are exposed to greater cardiovascular risk⁽²³⁾.

Regarding the work schedule, although the majority of those working in shifts had daytime shifts as a fixed schedule, it was noted that the prevalence of fixed night-time shifts among those working in alternate shifts was significant, and these work regimes (shifts/night) are associated with sleep deficiency, loss of quality, duration and/or perceived sufficiency, high cardiovascular risk, and correlation with coronary heart disease^(1,5). It is considered that many nursing professionals opt for the night shift work due to the additional payment for the shift, and for facilitating domestic tasks and daily life, since the majority of these workers

are women, mostly being responsible for domestic activities and childcare beyond work⁽¹⁷⁾.

It was also observed that the professionals who worked in shifts had shorter working in the institution, more recently graduated and a higher weekly workload, and these findings can be related to the fact that professionals with shorter institutional working time and vocational training are usually younger and more willing or able to work in shifts. Still, those with shorter training time are generally the ones with their most “exploited” performance potentials. This can be a challenge, but at the same time it is early exposure to overload, and consequently to the risk of becoming ill.

It was found that the average weekly working hours of the present study participants (52 hours/week) was above the recommended level⁽²⁴⁾, even among shift workers, which may negatively influence rest time and leisure, work capacity, ergonomic, biological and physical risks⁽²⁾, in addition to acting as an associated factor to cardiovascular diseases⁽²⁵⁾.

In relation to life habits, the differences between the groups were greater alcoholism and practicing leisure activity. Adopted lifestyles such as an increased intake of alcoholic beverages can be associated with the onset of illnesses, as well as being a coping strategy or inadequate coping of work-related stress situations, which has increased among young adults (age group from 20 to 39 years) and in those with higher education⁽²⁶⁾. This hypothesis is reinforced by the fact that practicing leisure activities was greater among those who worked in shifts, justifying the need of these professionals to use coping strategies for the stress inherent to this condition. However, among the professionals who mentioned leisure activities, physical activity was an interesting finding, given that people who practice it have a lower risk of developing morbidities such as cardiovascular diseases, diabetes, obesity, depression and anxiety⁽²⁷⁾, and shift work is associated with an increased risk for being overweight/obese⁽²⁸⁾. On the other hand, people who are insufficiently active, like most of the professionals studied, present a higher risk for all causes of mortality⁽²⁹⁾.

The shift work condition did not influence the prevalence of Burnout Syndrome (39.0%) or common mental disorders

(57.6%); however, the proportions observed in the present study were higher than those observed among nursing professionals in generally large hospitals (4.7%⁽¹³⁾ and 35.0%⁽¹⁰⁾).

The observed high prevalence of burnout and common mental disorders can directly and indirectly interfere in the individual, family and social functioning of the affected individual. It is important to note that both the professional and the patient's safety may be impaired, since professionals affected by Burnout Syndrome feel exhausted, frequently ill, suffer from insomnia, digestive ulcer, headaches, problems related to blood pressure, muscle tension and chronic fatigue⁽¹²⁾.

Differently from the observed among hypertensive patients with altered blood pressure levels during work activities in which Burnout Syndrome prevalence was higher (59.0%) than that observed in hypertensive patients without work hypertension (36.0%) and in healthy individuals (9.0%)⁽⁷⁾, there was no association between hypertension and Burnout Syndrome in the present study. However, there was an association between less emotional exhaustion and altered blood pressure levels in ABPM during the waking period and greater depersonalization with altered blood pressure levels in ABPM during the sleep period, showing that the professionals who presented depersonalization were more subject to nocturnal hypertension, as well as a relationship between psychoemotional variables and higher cardiovascular risk. In this sense, the presence of CMD was also associated with a higher prevalence of arterial hypertension, as was observed in the study with data from the global mental health survey⁽⁸⁾.

The associations observed between the studied psychoemotional variables and arterial hypertension may be

related to neuroendocrine alterations or to behaviors that may expose individuals to comorbidities such as arterial hypertension⁽⁷⁻⁸⁾.

There was also a high prevalence of reported stress (44.6%), which may be associated with insufficient time for rest between working hours, for leisure activities and for self-care, with consequent impairment in the quality of life of these professionals, given that there is a correlation between stress and poor sleep quality⁽³⁰⁾. It is also important to note that stress and burnout are related constructs.

The present study was limited to analyzing the characteristics of the professionals in a short time, which is an inherent characteristic to cross-sectional studies, in which the concomitant evaluation of the risk factors and the outcomes do not allow for establishing cause and effect relationships. However, it is emphasized that the sample was probabilistic, which controls the selection bias and ensures that all professionals have the same probability of being part of the study. In addition, ABPM was used, reducing the influence of the observer and the environment on the evaluation of the blood pressure levels of the individuals, thus controlling the information bias.

The study enabled learning the variables that can be contemplated in intervention programs for nursing professionals who work in this institution, with a view to reducing the exposure of those who work in shifts to cardiovascular risk factors. From the results found, it is also possible to identify professionals with different risk intensities for illness, thereby allowing individualized and follow-up interventions with health promotion actions. These actions constitute important tools for human resources and worker health management, contributing to advance nursing.

CONCLUSION

Nursing workers who worked in shifts had a higher prevalence of negative factors related to work, inadequate habits and lifestyles, as well as changes in sleep blood pressure when compared to workers who were not exposed to this work schedule. From the findings, it is considered necessary to follow and monitor the professionals who presented risk factors, as well as all others exposed to shift work. It is also necessary to stimulate and promote prevention strategies related to habits and lifestyles, especially regarding physical inactivity and alcohol consumption, aiming to modify the profile of morbidity and modifiable risk factors related to chronic non-communicable diseases in the studied population.

RESUMO

Objetivo: Analisar a influência do trabalho em turnos na pressão arterial, na presença de *burnout* e transtornos mentais comuns em profissionais de enfermagem. **Método:** Estudo transversal. O *burnout* foi avaliado pelo *Maslach Burnout Inventory*, e os Transtornos Mentais Comuns, pelo *Self Reporting Questionnaire*. Realizaram-se a medida casual da pressão e a Monitorização Ambulatorial da Pressão Arterial. **Resultados:** Participaram 231 profissionais. A maioria (59,7%) trabalhava em turnos, e essa condição associou-se ($p \leq 0,05$) com: maior carga de trabalho semanal; fazer plantão noturno; menor tempo de formado e de trabalho na instituição; etilismo; atividade de lazer; e alteração na monitorização ambulatorial da pressão arterial do período do sono. Os profissionais com transtornos mentais comuns e que trabalhavam em turnos apresentaram menores níveis de pressão casual diastólica ($p = 0,039$) e maior prevalência de hipertensão ($p = 0,045$). A presença de exaustão emocional associou-se com pressão arterial de vigília normal e despersonalização com pressão arterial de sono alterada. **Conclusão:** O trabalho em turnos associou-se à maior prevalência de fatores negativos relacionados ao trabalho, hábitos e estilos de vida inadequados e alteração da pressão no período de sono.

DESCRITORES

Enfermagem; Trabalho em Turnos; Esgotamento Profissional; Transtornos Mentais; Estilo de Vida; Hipertensão.

RESUMEN

Objetivo: Analizar la influencia del trabajo en turnos en la presión arterial, presencia de *burnout* y trastornos mentales comunes en profesionales enfermeros. **Método:** Estudio transversal. El *burnout* fue evaluado por el *Maslach Burnout Inventory* y los Trastornos Mentales Comunes, por el *Self Reporting Questionnaire*. Se realizaron la medida casual de la presión y el Monitoreo Ambulatorio de la Presión Arterial. **Resultados:** Participaron 231 profesionales. La mayoría (59,7%) trabajaba en turnos, y dicha condición se asoció ($p \leq 0,05$) con: mayor carga de trabajo semanal; hacer turno nocturno; menor tiempo de licenciado y de trabajo en el

centro; etilismo; actividad de ocio; y modificación en el monitoreo ambulatorio de la presión arterial del período del sueño. Los profesionales con trastornos mentales comunes y que trabajaban en turnos presentaron menores niveles de presión casual diastólica ($p=0,039$) y mayor prevalencia de hipertensión ($p=0,045$). La presencia de agotamiento emotivo se asoció con presión arterial de vigilia normal y despersonalización con presión arterial de sueño modificado. **Conclusión:** El trabajo en turnos se asoció con la mayor prevalencia de factores negativos relacionados con el trabajo, hábitos y estilo de vida inadecuados y modificación de la presión en el período de sueño.

DESCRIPTORES

Enfermería; Horario de Trabajo por Turnos; Agotamiento Profesional; Trastornos Mentales; Estilo de Vida; Hipertensión.

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