

## PREVALENCE OF STRESS AND BURNOUT SYNDROME IN HOSPITAL NURSES WORKING IN SHIFTS

### PREVALÊNCIA DO ESTRESSE E SÍNDROME DE BURNOUT EM ENFERMEIROS NO TRABALHO HOSPITALAR EM TURNOS

### PREVALENCIA DEL SÍNDROME DE ESTRÉS Y DE AGOTAMIENTO (BURNOUT) EN ENFERMEROS EN TURNOS DE TRABAJO HOSPITALARIO

Clarissa Maria Bandeira Bezerra <sup>1</sup>  
Kézia Katiane Medeiros da Silva <sup>1</sup>  
Jéssika Wanessa Soares da Costa <sup>1</sup>  
Joberto de Carvalho Farias <sup>1</sup>  
Milva Maria Figueiredo de Martino <sup>1</sup>  
Soraya Maria de Medeiros <sup>1</sup>

<sup>1</sup> Universidade Federal do Rio Grande do Norte – UFRN, Departamento de Enfermagem. Natal, Rio Grande do Norte – Brazil.

**Corresponding author:** Clarissa Maria Bandeira Bezerra  
**E-mail:** clarissambbezerra@hotmail.com

#### Author's Contributions:

**Data Collection:** Joberto C. Farias; **Project Management:** Milva M. F. Martino, Soraya M. Medeiros; **Writing - Original Draft Preparation:** Clarissa M. B. Bezerra, Kézia K. M. Silva, Jéssika W. S. Costa; **Writing - Review and Editing:** Milva M. F. Martino, Soraya M. Medeiros.

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## ABSTRACT

**Introduction:** many times the Nursing service is linked to poor work conditions, unhealthy environment, work overload, exposure to risks, linked to the worker's vulnerability and health conditions. These factors can lead to psychological disorders such as stress and burnout syndrome. **Objective:** to verify the level of stress and the presence of the burnout syndrome in nurses working in day and night shifts in the hospital context. **Method:** a descriptive and analytical study conducted in a university hospital. The sample consisted of 108 nurses. Questionnaires were applied to collect data, and one of them was used to verify socio-demographic data; the modified Bianchi Scale to quantify the level of stress; and the Maslach Burnout Inventory – Human Services Survey to identify Burnout. **Results:** the data showed that the Burnout dimensions for the groups working in day and night shifts were considered medium to low. Correlation and statistically significant p-values were found when the stress and burnout dimensions were compared ( $p < 0.0001$ ;  $p = 0.0001$ ; and  $p = 0.0003$ ). The score for the day shift stress level was 2.35 and, for the night shift, 2.31, both being classified a mean. **Conclusion:** the level of stress among nurses and the three dimensions of the syndrome were evaluated as mean level in the day and night shifts. There was a statistically significant correlation between stress and burnout.

**Keywords:** Nursing; Occupational Stress; Burnout, Professional; Shift Work Schedule.

## RESUMO

**Introdução:** por muitas vezes o serviço da Enfermagem está atrelado a más condições, ambiente insalubre, excesso de horas trabalhadas, exposição a riscos, unidos à suscetibilidade e às condições de saúde do trabalhador. Esses fatores podem levar a transtornos psicológicos como estresse e síndrome de burnout. **Objetivo:** verificar o nível de estresse e a existência da síndrome de burnout em enfermeiros nos turnos diurno e noturno na área hospitalar. **Método:** estudo de enfoque, descritivo e analítico, ocorrido em um hospital universitário. A amostra foi composta de 108 enfermeiros. Para a coleta utilizaram-se questionários, um deles verificador de dados socio-demográficos, a Escala de Bianchi modificada, para quantificar o nível de estresse; e o Maslach Burnout Inventory – Human Services Survey, para identificar burnout. **Resultados:** os dados mostraram que as dimensões do burnout para os grupos do diurno e noturno foram consideradas medianas a baixas. Foram encontrados correlação e valores de  $p$  estatisticamente significativos quando comparados o estresse e as dimensões da síndrome  $p < 0,0001$ ;  $p = 0,0001$ ; e  $p = 0,0003$ . O escore para o nível de estresse do turno diurno foi de 2,35 e do noturno, 2,31, sendo classificados como médios. **Conclusão:** o nível de estresse entre os enfermeiros e as três dimensões da síndrome foram avaliados como nível médio nos turnos diurno e noturno. Houve correlação estatisticamente significativa entre estresse e burnout.

**Palavras-chave:** Enfermagem; Estresse Ocupacional; Esgotamento Profissional; Jornada de Trabalho em Turnos.

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## RESUMEN

**Introducción:** el servicio de enfermería a menudo está relacionado con malas condiciones, un entorno poco saludable, horas de trabajo excesivas, exposición a riesgos, relacionado con la susceptibilidad y las condiciones de salud del trabajador. Estos factores pueden conducir a trastornos psicológicos como el estrés y el síndrome de burnout. **Objetivo:** verificar el nivel de estrés y la existencia del síndrome de burnout en enfermeros en turnos de trabajo hospitalario. **Método:** estudio de enfoque descriptivo y analítico, realizado en un hospital universitario. La muestra estuvo compuesta por 108 enfermeros. Para la recolección de datos se utilizaron cuestionarios, uno de los cuales verificó datos sociodemográficos, la Escala de Bianchi modificada, para cuantificar el nivel de estrés; y el Inventario de Burnout de Maslach – Encuesta de Servicios Humanos, para identificar el burnout. **Resultados:** los datos mostraron que las dimensiones de agotamiento para los grupos diurnos y nocturnos se consideraron de medio para bajo. Se encontraron correlaciones y valores de  $p$  estadísticamente significativos cuando se compararon el estrés y las dimensiones de  $p = <0.0001$ ;  $p = 0,0001$ ; y  $p = 0,0003$ . El puntaje para el nivel de estrés del turno diurno fue de 2,35 y del nocturno de 2,31, que se clasificaron como medios. **Conclusión:** el nivel de estrés entre los enfermeros y las tres dimensiones del síndrome se evaluaron como nivel medio durante los turnos diurnos y nocturnos. Hubo una correlación estadísticamente significativa entre el estrés y el agotamiento.

**Palabras clave:** Enfermería; Estrés Laboral; Agotamiento Profesional; Horario de Trabajo por Turnos.

## INTRODUCTION

Stress has been a hotly debated topic, especially in recent decades. However, its definition has been discussed since the 1950s by Hans Selye, who stated that stress is inherent in a specific disease, with measurable signs and symptoms, non-specific to this disease, which structurally and chemically change the individual. Selye defined stress in a physiological perspective and conducted a study focused on the general adaptation syndrome, which divides stress into three stages: alarm reaction, resistance and exhaustion.<sup>1</sup>

The alarm reaction happens after the individual is exposed to a stressful situation, and may be unconscious or not. The resistance stage is characterized by a common body reaction to defend the individual against external threats, in an attempt to survive and maintain balance. However, the exhaustion stage arises when the chronic exposure to the stressor remains and the means of adaptation fails, resulting in energy deficit, biological changes, disorders such as heart and gastrointestinal problems, depression and even death.<sup>1</sup>

In daily life, there are several situations and experiences that negatively influence the quality of life, contributing to physiological and psychological disorders, such as stress, causing, in addition to health damage, impacts on the economy.<sup>2</sup>

It is well known that work linked to poor conditions, unhealthy environment, overload, exposure to risks or the fact

that the activity itself is dangerous, combined with workers' vulnerability and health conditions, causes mental health damages, such as occupational stress and burnout.<sup>3</sup>

Stress consists in symptoms that represent the individual's continuous interactions and adjustments and that are influenced by the environment in general. In the labor market, occupational stress is used to describe disorders in employees, due to their difficulty to do their activities, added to the service requirements, which causes damage to the quality of life and illness, generating problems throughout the system.<sup>4</sup>

Amid the disorder caused by stress, some diseases set in. One is the burnout syndrome, with a multidimensional concept that divides it into three phases: emotional exhaustion, depersonalization and lack of personal involvement in the work. Seen as a special type of gradually evolving chronic occupational stress, it can affect all spheres of the personal life.<sup>5</sup>

It is evidenced as an externalization of the individual's stress, with feelings of exhaustion and degeneration of their physical resources. The disorder was delineated by the American psychoanalyst physician Freudenberg, in 1974 and, in 1976, academic research studies and theoretical models regarding burnout started. Also known as job burnout (JB), it is recognized as an occupational psychopathology (ICD-10 group V).<sup>6</sup>

Over the years, research is being conducted to map, diagnose and understand the impacts of occupational stress and burnout on entrepreneurial institutions and their workers. In the health field, particularly in Nursing, there are several predictors of stress, including inadequate training, low pay, overwork due to insufficient human resources, and physical and/or mental distress and suffering.<sup>7</sup>

Nursing professionals are more susceptible to the syndrome in the health care area, due to constant and direct contact with the patients and, also, as education professionals.<sup>8,9</sup>

For most of the nurses, remuneration is not enough to support themselves and their families, so they need another job, which can lead to physical and psychological distress. They often do not have time to enjoy leisure time, social and family life and, during their work, they deal with emotional distress, death and the suffering of patients and their families. Thus, nurses may have a reduced quality of life, remaining in constant tension, which makes them susceptible to stress-causing elements.<sup>9</sup>

Especially in hospitals, nurses sometimes work 24/7, uninterruptedly. The division of the service by shifts organizes the continuity of care, thus subjecting the professional to work day or night, and these shifts can affect sleep, mood and cause occupational stress.<sup>7</sup>

Therefore, it is necessary to develop studies focused on the workers' health, as they are prone to be affected by diseases such as burnout. The results obtained from this research are expected to have a positive impact on the scientific community, drawing

attention to the importance of the good quality of life the nurses, who are the heads of the Nursing staff, as well as to their work, the promotion of their health, satisfaction and motivation, which will bring benefits to the patients under their care.

As an occupational research, it provides social, political, human and institutional knowledge to analyze jobs causing diseases or injuries. Considering the foregoing, this paper aims to contribute directly with the nurses in the knowledge of their health reality, planning of promotion actions, prevention, surveillance and public policies.

In addition, the knowledge of the nurses' level of stress and burnout implies the creation of coping strategies and, consequently, the possibility of less hard work. In this scenario, this study aimed to verify the level of stress and the presence of the burnout syndrome in hospital nurses working in the day and night shifts.

## METHOD

This is a descriptive and analytical field research carried out from January to March 2016 in a university hospital with 242 hospital beds. In 2013, a partnership was established between the hospital and the Brazilian Company of Hospital Services (*Empresa Brasileira de Serviços Hospitalares*, EBSEH), the latter being responsible for managing the hospital.<sup>10</sup>

The working arrangements of the Nursing staff of this health unit were established in two ways. The nurses bound to the University, on a statutory basis, worked 30 hours per week, divided into 6-hour shifts on a daily basis, in the morning or afternoon shifts, or 12-hour day or night shifts, corresponding to 10 shifts on a monthly basis. The nurses hired by the Brazilian Company of Hospital Services (EBSEH) worked a 36-hour shift per week distributed into day shifts, which could be in the morning or afternoon, and night shifts, working 12 hours and resting 36, corresponding, on average, to 13 shifts every month.

The participants were chosen by invitation, as long as they met the inclusion criteria: being a nurse in the selected institution and having more than six months of employment bond. Those who were on sick leave, maternity leave and/or vacation during the collection period were not part of the sample.

Thus, from the population of 118 workers; 10 nurses were excluded: seven were on vacation; two on sick leave; and one refused to participate in the survey. This study included 108 nurses distributed in the following shifts: day, morning, afternoon; or day (66) and night (42).

The workers were approached at their workplace (by hospital sector) by the researcher herself, one per day. The researcher explained the objective and relevance of the research and how essential it was to sign the Free and Informed Consent Form (FICF). If they were interested in participating in the study, the questionnaires were delivered and, at the end of the shift,

they were collected, even if they were not fully completed, returning the next day. Aiming to attract more participants, when the nurses were performing activities that should not be interrupted, the questionnaires were not delivered, and a new opportunity was expected.

The investigation was initiated after the project was approved by the local Ethics Committee under Opinion N° 1,313,575 and CAAE 50194515.4.0000.5537. All the participants signed the Free and Informed Consent Form, according to Resolution No. 466/12.<sup>11</sup>

The socio-demographic data collection form is made up of multiple choice and open-ended questions covering the following: name, gender, age, sector, marital status, number of children, shift, income and workload. The *Maslach Burnout Inventory Human Services Survey* (MBI-HSS), aimed at health care professionals, was used to identify the percentage of individuals with burnout syndrome.<sup>12</sup>

The MBI-HSS questionnaire composed of 22 self-applied questions was used to identify the symptomatic dimensions of burnout. The scoring is associated with the frequency of events on a Likert scale ranging from zero to six: 0 = Never; 1 = A few times a year; 2 = Once a month or less; 3 = A few times a month; 4 = Once a week; 5 = A few times a week; and 6 = Every day.<sup>12</sup>

The Bianchi Scale was also used and allows identifying and classifying the stressors of the daily functions of hospital nurses, with 63 examples of activities. In this scale, the stress level was classified as follows: below 2.0 – low level; from 2.0 to 2.9 – medium level; from 3.0 to 3.9 – high level alert; and equal to or greater than 4.0 – high level.<sup>13</sup>

The categorical and continuous variables were descriptively analyzed by absolute (n) and relative (%) frequencies, according to the mean, standard deviation, median, first and third quartiles, maximum and minimum values. The Chi-square test was used to compare characteristics of the burnout dimensions, gender and work shift.

For comparisons between shifts in relation to the scores, the unpaired Student t-test was applied in cases where normal distribution was observed in the data. The nonparametric Mann-Whitney test was used in cases in which the assumptions regarding distribution were not met.

The correlations between the scores were assessed using Pearson's correlation coefficient for events in which normal data distribution was observed. In all the analyses, a significance level of 5% was considered for the statistically significant result ( $p < 0.05$ ).

## RESULTS

Table 1 shows the socio-demographic, labor and leisure characteristics of the nurses, both in frequency values and in percentage.

The length of experience was between one and 12 years for 87.96% of the sample, and from 13 to 45 years for 12.04%. 68.52% worked in the hospital field, and 55.56% said they had another employment bond. 61.11% worked in the day shift and 38.89% in the night shift.

Regarding leisure habits, only 50.00% of the nurses enjoyed some free time.

Table 1 - Representation of the socio-demographic and labor data of the nurses. *Natal/RN, 2016*

Variables	n (%)
<b>Gender</b>	
Female	96 (88.89)
Male	12 (11.11)
<b>Marital status</b>	
Single	51 (47.22)
Married	41 (37.96)
Divorced	9 (8.33)
Others	7 (6.48)
<b>Time in the profession</b>	
1 - 12 years	95 (87.96)
13 - 45 years	13 (12.04)
<b>Work sector</b>	
Hospital	74 (68.52)
Outpatient	34 (31.48)
<b>Having more than one work</b>	
Yes	60 (55.56)
No	48 (44.44)
<b>Work shift</b>	
Daytime	66 (61.11)
Night	42 (38.89)
<b>Physical activity</b>	
Yes	54 (50.00)
No	54 (50.00)

Table 2 shows statistically significant data when burnout and stress dimensions were correlated. It was found that all burnout levels showed a significant correlation.

Table 2 - Characterization of the correlation coefficients and p-value according to stress and to the burnout dimensions. *Natal/RN, 2016*

Dimensions of the burnout syndrome	Stress	
	Correlation coefficient	p-value
Exhaustion	0.5498*	< 0.0001
Depersonalization	0.3652**	=0.0001
Professional achievement	-0.3383**	=0.0003

Caption: \*Pearson's correlation coefficient; \*\*Spearman's correlation coefficient.

The MBI-HSS instrument scores by levels and distribution in the burnout dimensions, according to the shift, are described in Table 3.

Table 3 - Distribution of the burnout dimensions in nurses according to work shifts. *Natal/RN, 2016*

Variables		Shifts		p-value*
		Daytime n (%)	Night n (%)	
Exhaustion	Low	22 (33.33)	15 (35.71)	0.9573
	Medium	22 (33.33)	14 (33.33)	
	High	22 (33.33)	13 (30.95)	
Depersonalization	Low	17 (25.76)	14 (33.33)	0.6728
	Medium	33 (50.00)	18 (42.86)	
	High	16 (24.24)	10 (23.81)	
Professional achievement	Low	12 (18.18)	8 (19.05)	0.9217
	Medium	34 (51.52)	20 (47.62)	
	High	20 (30.30)	14 (33.33)	

Caption: \*p-value obtained from the Chi-square test.

Table 4 was designed to quantify and identify the stress level of nurses according to the work shift. The characterization showed that the stress mean in the day shift was 2.35, while in the night shift it was 2.31. The values are close and indicate mean stress levels. The p-value obtained from the Mann-Whitney test was not statistically significant: 0.7431.

Table 4 - Exhibition of mean stress values of nurses according to work shift. *Natal/RN, 2016*

Variable	Daytime		Night		p-value
	n=66		n=42		
	Mean	Standard deviation	Mean	Standard deviation	
Stress	2.35	0.53	2.31	0.54	0.7431**

Caption: \*\*p-value obtained from Mann-Whitney test (p-value<0.05 to the Mann-Whitney test).

## DISCUSSION

By analyzing the characteristics of the socio-demographic data of the nurses participating in the study, a predominance of females was noted. This is a particularity of the Nursing profession and it is confirmed that the provision of care requires careful skills that most of times are peculiar to women, regarding the concepts of caring for the human being, as pointed out by an international study.<sup>14</sup>

Women are more likely to have a higher level of stress and a worse quality of life, as evidenced in a previous national study in which the highest number of cases was found in

female professionals. However, women can more easily express their feelings compared to men, and this is supported by self-reports.<sup>15</sup>

In this research, most of the participants were married, corroborating the findings of a previous study conducted with nurses.<sup>16</sup> Contrary to what was observed in this study, another showed a majority of single nurses, and this may be due to the fact that working in shifts and rotating hours makes it difficult to be available for leisure and for building a family.<sup>16</sup>

There is a possibility that the presence of a partner may act as a protective factor, as the partner may provide support, stimulation to cope with stress and, consequently, prevent burnout.<sup>9</sup>

Double burden was predominant in the research. Factors such as low pay, combining household chores, and the need for professional qualification explain several activities performed by these professionals, which results in fewer moments of rest. Therefore, the researchers claim that this can interfere with physical and mental health, as well as reflect on the onset of burnout.<sup>17,18</sup>

Regarding leisure habits, equal percentages were found for those who practiced and those who did not practice physical activities. A study found a statistically significant correlation between physical activity and work capacity. It proposes regular exercises to improve the health status of the nurses. It is emphasized that older people need to be encouraged to engage in physical activities.<sup>19</sup>

The association between occupational stress and burnout is highlighted in its three dimensions. The causal relationship is properly ratified in this research. It is emphasized that the individual must manage stress in order to avoid burnout.

This implies that the intrinsic characteristics of the work and of the worker with psychic overloads motivate burnout.<sup>20</sup> It is believed that stressful work, lack of possibility of change, obligations, demands, permanent conflicts, particularly in the health area, due to the specificity of care in situations of suffering and demands for more interpersonal skills can lead to psychological harm and burnout.<sup>21</sup>

The correlation between professional achievement and stress was negative, showing an inverse correlation between occupational stress and job satisfaction. Similarly, one study showed the same correlation. It is argued that this may have been due to job security, impossibility of losing their job, recognition of their service, improved communication process and encouragement to qualification.<sup>22</sup>

In the burnout syndrome, medium to low values were obtained for the three dimensions of this disorder. These findings are consistent with the cutoff points found in a national study.<sup>23</sup>

The highest exhaustion and depersonalization scores were observed for the daytime group and medium professional performance was found in both shifts. The Nursing work

structure is not the same in all hospital shifts. At night, the staff is shorter and the activities are reduced, that is, they should not be done at night if they can be done during the day, seeking the patient's well-being and rest.<sup>24</sup>

Finding values that indicate the absence of the syndrome in relation to the cutoff point of the burnout dimensions raises the likelihood of positive characteristics, so it is believed that the interviewed individuals were coping well with work overload. As explained by a recent research, to achieve low levels in the burnout dimensions or absence of the syndrome, nurses must manage stressors in order to minimize their negative effects at the individual, professional and social levels.<sup>22</sup>

However, the value classified as medium may also denote attention and precaution, as it may be the manifestation of the nurses' emotional fragility regarding psychological and professional distress. The intermediate level requires consideration to spare the exacerbation of threats.<sup>24</sup>

Regarding the stress level of the sample participants, a medium score was obtained for both day and night workers. In this context, it is understood that individuals with medium stress levels can reach low levels if they handle negative experiences and control their level of stress, that is, they need to learn from previous stressful situations and make coping effective to obtain the desired earnings.<sup>21</sup>

Over time, it is possible that professionals with medium to high stress levels may suffer a breakdown of emotional exhaustion and, consequently, the onset of burnout. It is to be noted that the mean and maximum stress values were higher for the subjects working in day shifts. Thus, it is noteworthy that those who work in the day shifts may also have poor sleep quality, especially in the morning, when usually in hospitals there are more activities, such as admissions, transfers, referral to the operating room, examinations, medical visit and hospital discharge. This occurs less often at night, thus resulting in a lower burden for the staff.<sup>9</sup>

Strategies to address the medium level of stress and burnout include the creation of stress-fighting tactics and focus on effective problem solving with appropriate action plans. In strategies linked to the workplace, supervisors and nurses should plan the work, distribute the service equally, estimate the staff sizing, verify the quality of care and create participatory programs that promote meditation, music, and painting, among others. That said, the purpose is to reduce the stress levels or to prevent them from exacerbating.<sup>23</sup>

Regarding the limitations of the study, the small number of individuals in the sample is recognized, especially in the night shift, as there were fewer nurses than in the day shift. Perhaps if the research had been extended to other hospitals, more statistical significance could possibly occur among the data obtained. These factors compromise the generalization

and dissemination of data to the Nursing professionals. It is also noteworthy that the study was conducted in a teaching hospital, which has better working conditions and professional appreciation when compared to other public and private hospitals, which can make the setting less stressful.

As a breakthrough for the Nursing science, the recognition can be cited of the health reality of the nurses, of the main triggering factors, of the stress levels and of the presence or absence of burnout, which may lead to failures in care, in the health care of patients. As a result, there is a contribution for the managers of health institutions in the evolution of the planning of promotion, prevention, and surveillance actions, as well as for the public managers to pay attention to the results and to formulate new public policies aimed at the benefit of the Nursing field and the health care practitioner.

## CONCLUSION

It was found that, in general, the nurses surveyed had a medium stress level and, in the three dimensions referring to burnout, in both shifts, the syndrome was not verified. The statistically significant correlations are highlighted by relating the dimensions of the syndrome to stress, thus demonstrating that burnout is caused by stress.

Even with medium values of stress and of the burnout domains, there is a need for the workplace to seek measures to reduce the triggering factors. Decreased workload, more staff, revised compensation, incentive, appreciation and recognition of the employees, as well as physical activities in groups, conversation and relaxation, such as labor gymnastics, can be adopted in the service to prevent higher stress levels, burnout and the onset of diseases.

The employees should also look for something that makes them feel good at the end of a workday. Being with the family, dancing, swimming and talking to themselves are coping strategies for daily conflicts and improve decision making and interpersonal relationships. These results should be reversed or minimized so that they do not become severe or chronic.

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