

Occupational stress among health workers of a university hospital



Estresse ocupacional entre trabalhadores de saúde de um hospital universitário
Estrés ocupacional entre los trabajadores de la salud en un hospital universitario

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ABSTRACT

Objective: To evaluate the occupational stress among health workers in a university hospital.

Methods: Cross-sectional study conducted with health workers in the areas of nursing and medicine at university hospital in southern Brazil. The data were collected between August 2011 and August 2012 by a questionnaire of characterization and Job Stress Scale. A descriptive and univariate analysis was performed (Kruskal-Wallis).

Results: The participants presented high demand and high control of the work and low social support, indicating an active work. Nurses had less control over work ($p < 0.001$) and physicians received more social support ($p = 0.006$). Reduced social support was related to greater exposure to stress among nursing assistants and technicians ($p = 0.012$).

Conclusion: Workers who felt the low social support had higher exposure to stress. Necessary to implement stress prevention strategies among health workers, such as strengthening of social support at work.

Keywords: Occupational health. Stress, psychological. Social support. Hospitals, university.

RESUMO

Objetivo: Avaliar o estresse ocupacional entre trabalhadores de saúde de um hospital universitário.

Métodos: Estudo transversal com trabalhadores de saúde de enfermagem e medicina de um hospital universitário da Região Sul do Brasil. Os dados foram coletados entre agosto de 2011 e agosto de 2012 por um questionário para caracterização e a Job Stress Scale. Realizou-se análise descritiva e univariada (Kruskal-Wallis).

Resultados: Os participantes apresentaram alta demanda e alto controle do trabalho e baixo apoio social, indicando um trabalho ativo. Os enfermeiros tiveram menor controle sobre o trabalho ($p < 0,001$) e os médicos receberam maior apoio social ($p = 0,006$). Apoio social reduzido esteve relacionado à maior exposição ao estresse entre os auxiliares e técnicos de enfermagem ($p = 0,012$).

Conclusão: Os trabalhadores que perceberam o apoio social reduzido apresentaram maior exposição ao estresse. Torna-se necessário implementar estratégias de prevenção ao estresse entre os trabalhadores de saúde, como o fortalecimento do apoio social no trabalho.

Palavras-chave: Saúde do trabalhador. Estresse psicológico. Apoio social. Hospitais universitários.

RESUMEN

Objetivo: Evaluar el estrés ocupacional entre los trabajadores de la salud en un hospital universitario.

Métodos: Estudio transversal con trabajadores de salud de enfermería y medicina de un hospital universitario del sur de Brasil. Los datos fueron recogidos entre agosto de 2011 y agosto de 2012 por un cuestionario para la caracterización y la Job Stress Scale. Se realizaron análisis descriptiva y univariada (Kruskal-Wallis).

Resultados: Los participantes mostraron una alta demanda y alto control del trabajo, y bajo apoyo social, indicando un trabajo activo. Las enfermeras tenían un menor control sobre el trabajo ($p < 0,001$) y los médicos recibieron más apoyo social ($p = 0,006$). Reducción de apoyo social se relaciona con una mayor exposición al estrés entre los auxiliares de enfermería y técnicos ($p = 0,012$).

Conclusión: Los trabajadores que sentían el bajo apoyo social tenían una mayor exposición al estrés. Necesario implementar estrategias de prevención del estrés entre los trabajadores de la salud, como el fortalecimiento del apoyo social en el trabajo.

Palabras clave: Salud laboral. Estrés psicológico. Apoyo social. Hospitales universitarios.

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INTRODUCTION

The process of working in health is a complex and dynamic phenomenon, constantly influenced by socioeconomic, political and technological changes. These changes in the last decades have changed the working conditions, especially the demands, which have resulted in an increase in occupational psychosocial risks. This contemporary scenario has been considered by many researchers as a major threat since it interferes with the health and safety of health workers and makes them vulnerable to occupational stress and illness⁽¹⁻²⁾.

Occupational stress is understood as the one that comes from the work environment and involves aspects of the organization, management, conditions and quality of the interpersonal relationships at work. Based on these characteristics, occupational stress is considered a polysemic term, however, in this study, the International Labor Organization has proposed that what it defines it as a set of manifestations in the worker's body that have harmful potential to their health⁽³⁾.

Nursing and medical professionals, especially those who develop their activities in hospital institutions, experience situations that lead to stress, as they coexist routinely with pain, suffering and death, and are subjected to intense work rhythm, long hours, shift work, low wages, complex human relations, lack of materials and human resources, among other factors that can trigger and/or potentiate stress at work⁽³⁻⁴⁾.

Continuous stress at work can have harmful consequences for the mental and physical health of the worker, such as the development of the metabolic syndrome, sleep disorders, diabetes, hypertension, psychosomatic illnesses, burnout syndrome, depression, psychoactive substance use, drop in productivity, absenteeism, job dissatisfaction, and low quality of life at work^(1,5).

Among the theoretical models most adopted in the international literature for stress assessment at work is the Demand-Control - Social Support model, proposed by Töres Theorell in 1988, since it covers specific aspects of the labor process. It is a three-dimensional model that correlates the levels of the worker's control over labor itself and the psychological demands from the work environment, which includes the psychic and organic consequences of the workers. The model indicates that work stress is the result of the interaction between many psychological demands, less control in the work process, and less social support received from co-workers and bosses in the work environment⁽⁶⁾.

Thus, the demands refer to the psychological demands of work, involving time, speed, and intensity in the per-

formance of their work activities, as well as the conflicting demands; the control refers to the use of the intellectual abilities and the autonomy to make a decision about one's own work; the social support refers to the interaction and support offered by interpersonal relationships at work⁽⁶⁾.

Among these dimensions, a study showed that the social and, especially, the organizational support exerts a function of slowing down the stressful events, since they collaborate so that the worker overcome the labor difficulties more easily, which contributes to the reduction of the vulnerability of individuals and promotes emotional and psychological well-being⁽⁷⁾.

In view of the context and content of the health work process, the deleterious effects of occupational stress on the physical and mental health of individuals and the lack of scientific knowledge about this issue among health workers in university hospitals, It becomes relevant to carry out this research to provide subsidies for occupational stress prevention programs in order to promote satisfaction, well-being and quality of life at work.

Thus, this study had the following research question: Do health workers in a university hospital experience stress at work? In order to answer this question, we aimed at evaluating occupational stress among health workers in a university hospital.

METHOD

This research was extracted from the doctoral thesis titled "Prevalence of the metabolic syndrome among workers of the medical and nursing teams of a hospital in Paraná and its association with occupational stress, anxiety and depression"⁽⁸⁾.

This is a quantitative, descriptive and cross-sectional study conducted at a university hospital in the southern region of Brazil. It is a state public institution with 313 beds, which provides medium and high complexity healthcare.

The study population consisted of 810 health workers from the nursing and medical areas of the institution. Based on this number, the sample size was calculated using a 50% ratio, a 95% confidence level, and an estimate error of 5%, which resulted in a minimum of 260 participants. The proportional stratification by gender and professional class was defined as the participation of 226 nursing professionals (183 females and 43 males) and 34 physicians (14 females and 20 males).

The inclusion criteria were: to have a definitive contract of at least two years with the institution and to act in direct patient care. Workers who were on temporary contracts, leave and vacations were excluded.

The data collection was performed from August 2011 to August 2012 at the hospital under study. The workers were invited to participate in the research during their shift change, being taken to a reserved room, where they were clarified about the study; and after signing the Free and Informed Consent Term, the instrument was made available for completion. At the end, the participants were instructed to insert the questionnaires into individual envelopes.

The data collection instrument consisted of two parts: the first one related to the characterization of workers, composed of sociodemographic and professional data (gender, age, marital status, education, and professional category). To evaluate the stress at work, the summarized version of the research instrument of the Demand-Control-Social Support model, the Job Stress Scale, translated and validated for the Portuguese language in 2004 was used (10). This is a self-administered questionnaire, whose answers are provided on a 4-point Likert scale, with 17 questions: five to assess the psychological demand of work (ranging from 5 to 20 points), six to measure control over work (ranging from 6 to 24 points), and six to analyze the social support (ranging from 6 to 24 points).

As advocated in the Demand-Control-Social Support model, these dimensions were dichotomized in "high" and "low" and classified according to one of four categories: work of high demand (low control and high demand - high risk of physical and mental illness of the worker); active work (high control and high demand - worker with autonomy in his activities and use of their intellectual potential); passive work (low control and low demand - induces the worker to apathy and decline in their general activities); And work with low demand (high control and low demand - reference classification)^(6,9).

The Statistical Package for Social Sciences (SPSS), version 20.0 was used to analyze the data. Absolute and relative frequencies were calculated for categorical variables and measures of the central position and dispersion for continuous variables. The Kolmogorov-Smirnov test indica-

ted non-normal distribution of the data. Thus, in the univariate analysis the Kruskal-Wallis test was used, considering statistically significant $p < 0.05$.

The study followed the requirements of national and international norms regulating research involving human beings, with the approval of the Research Ethics Committee of the Universidade Estadual de Londrina, according to the Opinion no. 267 of March 01, 2010 and CAAE 0218.0.268.153-09.

■ RESULTS

Of the 260 participants in this study, the majority belonged to the female gender (75.8%), with a stable marital relationship (69.3%), and a higher level of schooling (66.5%). The average age was 45 years old, with extremes at 23 and 66 years old.

As for the position attached to the institution under study, 13.1% were doctors and 86.9% were nursing workers; of whom 10.4% were nurses, 40.4% were technicians and 36.2% were assistants. 84.6% developed their occupational activities during the day and 15.4% at night. The working time at the institution studied ranged from 1 to 39 years, with an average of 19 years. Regarding the total hours worked, 54.2% of the participants worked up to 42 hours a week, 23.5% up to 60 hours, and 22.0% more than 60 hours a week. 21.9% of the respondents had more than one employment relationship.

Concerning life habits, 33.5% of the workers reported regular physical activity, 20% were smokers (\bar{x} =15 cigarettes per day), and 40.8% indicated alcohol consumption.

Table 1 presents the central position and dispersion measures of the scores of the dimensions of the Job Stress Scale obtained by the participants.

There was a significant difference between occupational classes, control ($p < 0.001$), and social support ($p = 0.006$), indicating that nurses had less control over work and doctors received more social support.

Table 1 – Median and Interquartile Intervals of the Job Stress Scale scores, according to the occupational classes (n=260). Londrina, PR, Brazil, 2012

Occupational classes	Demand	Control	Social Support
	Median (IQI)*	Median (IQI)*	Median (IQI)*
Doctors	9.0 (7.0 -9.0)	10.0 (8.0-11.0)	12.5 (10.0-14.5)
Nurses	8.0 (7.0 - 8.0)	8.0 (7.0 - 10.0)	9.0 (9.0-11.0)
Nursing Team	8.0 (7.0 - 9.0)	10.0 (9.0 - 12.0)	11.0 (9.0 - 13.0)

Source: Research data, 2012.

* Interquartile Interval

Nursing and medical workers presented high demand for work ($\bar{x}=8.3$), they also reported a high degree of control over the work done ($\bar{x}=9.9$), and low social support ($\bar{x}=11.1$). According to the theoretical model used in this study, this relationship represents an active work with low wear, but attention must be paid to the low social support demanded by the institution from the health worker.

Regarding the classification of stress, it was verified that the majority of workers (72.7%) were in the low stress category, 16.2% in high exposure, and 11.2% with intermediate exposure to stress. It was also identified that the stress factors at work were the relationships with collea-

gues (23.2%), the activities required at work (62.8%), and the relationship with managers (62.8%).

Table 2 shows the descriptive measures of the social support dimension, according to the Job Stress Scale classification.

There was no statistical significance between the categories of stress classification and social support received among physicians ($p=0.871$) and nurses ($p=0.253$). However, among nursing assistants and technicians, the higher the exposure to stress, the lower the social support received ($p=0.012$).

Table 2 - Descriptive statistics of the social support dimension according to the Job Stress Scale classification, according to occupational class (n=260). Londrina, PR, Brazil, 2012

Social Support		Low exposure	Intermediate exposure	High exposure
Doctors				
Median		12.5	12.0	13.5
Interquartile Interval	25	11.0	8.0	9.3
	75	13.7	12.0	17.0
Minimum		9.0	8.0	7.0
Maximum		16.0	16.0	17.0
Variance		4.4	32.0	19.1
Nurses				
Median		10.0	-	9.0
Interquartile Interval	25	8.5	-	9.0
	75	14.5	-	9.5
Minimum		6.0	-	6.0
Maximum		18.0	-	11.0
Variance		14.3	-	1.7
Nursing Team				
Median		11.0	10.0	10.0
Interquartile Interval	25	9.0	8.0	6.0
	75	13.0	13.0	11.5
Minimum		6.0	6.0	6.0
Maximum		22.0	16.0	21.0
Variance		8.3	9.2	16.7

Source: Research data, 2012.

DISCUSSION

The sociodemographic characteristics of the workers participating in this study are similar to the profile of the

workforce of nursing and medical teams working in Brazilian hospitals⁽¹⁰⁻¹¹⁾.

It was identified that 27.4% of the workers in the sample studied were exposed to intermediate and high levels

of work stress. Some authors mention that the occupational stress is related to the routine of the hospital environment, marked by high tension, high workloads, unhealthy working conditions, dealing with severe patients, and the management of care activities. Thus, improvements in structure, organization and working conditions can minimize the effects of stress⁽¹²⁾.

In this research, it was verified that the workers presented high psychological demand for the execution of their work; and they also considered that they have autonomy in decision making, they need to use creativity and individual development to fulfill the health work process, characteristic aspects of the high control dimension of the work. This relationship represents an active worker with current challenges, motivated and autonomous about the work process, who can rethink the work process, reducing the risk of psychological stress and, consequently, the risk of developing physical illnesses.

However, the work situation considered to be "ideal" would be one in which the worker would experience low psychological demands of work, with high control of the work process, and high social support in the work environment⁽⁹⁾.

However, in the health area, especially in hospital institutions, the low psychological demand is almost impossible to be found, since the situations presented in the work process cause a psychological wear of the worker, such as: the excessive workload, the accelerated rhythm of work imposed by the insufficient amount of professionals; in addition, the degree of complexity of the activities to be performed and the level of technical-scientific knowledge required should be considered^(10,13).

The low social support verified in this study can also be a source of mental fatigue, which favors the appearance of aggravations to workers' health, as indicated by the Demand-Control model⁽⁶⁾. The social support reflects the environment in the workplace and the relationship between co-workers and their superiors, based on two main components: the emotional relationship and the instrumental support, which are strongly influenced by the changes in the organizational processes of work. A study showed that an effective social support network produces mitigating effects on stress, helping the worker to cope and deal with stressful situations, which improves the individual's adaptive abilities regarding new situations, including their health status⁽¹⁴⁾. In addition, the low social support was associated with higher levels of stress among hospital nurses from China, Japan, Argentina, and the Caribbean⁽¹⁵⁾.

In researches carried out with nursing workers in Brazilian public hospitals, it was found that high psychological demand and low social support at work were associa-

ted with a decrease in work capacity and a lower health perception, with an increase in the prevalence of minor psychiatric disorders (insomnia, fatigue, irritability, somatic disorders, and difficulty in memory and concentration), conditions that negatively impact the individual and the organization^(13,16).

It should be noted that in the social support dimension, the investigated workers may present relationship difficulties with supervisors and other co-workers, since 23.2% indicated that relationships in the work environment are stress factors. Some authors add that the interpersonal relationship between the members of a team is a decisive factor in the experiences of satisfaction, dissatisfaction and success in the work. In this way, the good relationship between the team and the manager collaborates in the transformation of the suffering into pleasure and satisfaction at work⁽¹⁷⁾.

Among nursing assistants and technicians, the lower social support was significantly associated with a greater exposure to stress. It is assumed that their position of subordinated work in relation to other health professionals may favor difficult and conflicting interpersonal interactions⁽¹⁸⁾, as well as the low social support related to this occupational class.

This statement is confirmed when it is analyzed that the doctors indicated greater social support, which refers to the socio-historical hierarchy that places them as a superior class in relation to other health professionals. Thus, the physician is seen as the main responsible for the decisions in healthcare and, for this reason, receives greater social support at work⁽¹⁹⁾.

Health professionals and managers should recognize the importance of social support in their work process, stimulating the formation of this network of support not limited to the work team, but involving family and friends, in order to reduce the vulnerability of these individuals to occupational stress and, consequently, to have a beneficial impact on the quality of care provided to patients and their families, as well as to maximize the quality of life of these health professionals⁽²⁰⁾.

■ CONCLUSION

It is imperative to implement stress prevention strategies among health professionals, such as the strengthening of social support at work, since the workers of nursing and medical teams, who presented a high demand for work and a high control of the work done, represented an active work with low wear. It was identified that the physicians received greater social support, the nurses presented less control over the work, and the assistants and nursing

technicians with greater exposure to stress perceived less social support.

The study had limitations due to the use of the transversal design, which does not allow the realization of inferences about the causality of the associations. In addition, it was performed with health professionals from a hospital institution, which prevents the generalization of the results.

The results of this research contribute to the advancement of scientific knowledge in the areas of Worker Health and Nursing, since it makes possible its practical use in the programs of prevention of sickness at work in hospital institutions, and subsidizes the elaboration of future researches. The findings also allow managers and the nursing and medical workers themselves to identify the pressure experienced at work, whether related to conflicts, autonomy, demands, content and context of work, in order to prevent diseases related to occupational stress.

■ REFERENCES

1. Gil-Monte PR. Riesgos psicosociales en el trabajo y salud ocupacional. *RevPerú Med Exp Salud Pública*. 2012;29(2):237-41.
2. Schmidt DRC. Demand-control model and occupational stress among nursing professionals: integrative review. *Rev Bras Enferm*. 2013 66(5):779-88.
3. Organización Internacional del Trabajo (CH). Factores psicosociales en el trabajo: naturaleza, incidencia y prevención. Ginebra: Oficina Internacional del Trabajo; 1986.
4. European Agency for Health and Safety at Work (SP) Guia eletrônico para a gestão do stress e dos riscos psicossociais [Internet]. Luxemburgo; 2014 [cited 2016 Apr 13]. Available from: <https://eguides.osha.europa.eu/stress/PT-PT/>.
5. Ribeiro RP, Marziale MHP, Martins JT, Ribeiro PHV, Robazzi MLCC, Dalmas JC. Prevalence of metabolic syndrome among nursing personnel and its association with occupational stress, anxiety and depression. *Rev Latino-Am Enfermagem*. 2015;23(3):435-40.
6. Karasek RA, Theorell T. Healthy work: stress, productivity and the reconstruction of working life. New York: Basic Books; 1990.
7. Gutierrez AP, Candela LL, Carver L. The structural relationships between organizational commitment, global job satisfaction, developmental experiences, work values, organizational support, and person-organization fit among nursing faculty. *J Adv Nurs*. 2012;68(7):1601-14.
8. Ribeiro RP. Prevalência da síndrome metabólica entre trabalhadores das equipes médica e de enfermagem de um hospital do paran  e sua associa o com estresse ocupacional, ansiedade e depress o [tese]. Ribeir o Preto (SP): Escola de Enfermagem de Ribeir o Preto, Universidade de S o Paulo; 2012.
9. Alves MGM, Chor D, Faerstein E, Lopes CS, Werneck GL. Short version of the "Job Stress Scale": a Portuguese-language adaptation. *Rev Saude P blica*. 2004;38(2):164-71.
10. Lima RAS, Souza AI, Galindo RH, Feliciano KVO. Vulnerability to burn-out among physicians at a public hospital in Recife. *Ci nc Saude Coletiva*. 2013;18(4):1051-8.
11. Griep RH, Fonseca MJM, Melo ECP, Portela LF, Rotenberg L. Nurses of large public hospitals in Rio de Janeiro: socio demographic and work related characteristics. *Rev Bras Enferm*. 2013;66(spe):151-7.
12. Versa GLGS, Murassaki ACY, Inoue KC, Melo WA, Faller JW, Matsuda LM. Occupational stress: evaluation of intensive care nurses who work at nighttime. *Rev Ga cha Enferm*. 2012;33(2):78-85.
13. Prochnow A, Magnago TSBS, Urbanetto JS, Beck CLC, Lima SBS, Greco PBT. Work ability in nursing: relationship with psychological demands and control over the work. *Rev Latino-Am Enfermagem*. 2013;21(6):1298-1305.
14. Alves MGM, H kerberg YHM, Faerstein E. Trends and diversity in the empirical use of Karasek's demand-control model (job strain): a systematic review. *Rev Bras Epidemiol*. 2013;16(1):125-36.
15. Baba VV, Tourigny L, Wang X, Lituchy T, Monserrat IS. Stress among nurses: a multi-nation test of the demand-control-support model. *Cross Cultural Manag*. 2013;20(3):301-20.
16. Urbanetto JS, Magalhaes MCC, Maciel VO, Sant'Anna VM, Gustavo AS, Polide-Figueiredo CE, et al. Work-related stress according to the demand-control model and minor psychic disorders in nursing workers. *Rev Esc Enferm USP*. 2013;47(5):1180-6.
17. Rocha APF, Souza KR, Teixeira LR. Health and medical work of neonatal ICU physicians: a study in a public hospital in Rio de Janeiro. *Physis*. 2015;25(3):843-62.
18. Urbanetto JS, Silva PC, Hoffmeister E, Negri BS, Costa BEP, Figueiredo CEP. Workplace stress in nursing workers from an emergency hospital: Job Stress Scale analysis. *Rev Latino-Am. Enfermagem*. 2011;19(5):1122-31.
19. Price S, Doucet S, Hall LM. The historical social positioning of nursing and medicine: implications for career choice, early socialization and interprofessional collaboration. *J Interprof Care*, 2014;28(2):103-9
20. Chen MF, Ho CH, Lin CF, Chung MH, Chao WC, Chou HL, et al. Organisation-based self-esteem mediates the effects of social support and job satisfaction on intention to stay in nurses. *J Nurs Manag*. 2016;24(1):88-96.

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