

# Stress, coping and health conditions of hospital nurses

ESTRESSE, COPING E ESTADO DE SAÚDE ENTRE ENFERMEIROS HOSPITALARES

ESTRÉS, COPING Y ESTADO DE SALUD ENTRE ENFERMEROS DE HOSPITAL

Laura de Azevedo Guido<sup>1</sup>, Graciele Fernanda da Costa Linch<sup>2</sup>, Luiza de Oliveira Pitthan<sup>3</sup>, Juliane Umann<sup>4</sup>

## ABSTRACT

The objective of this quantitative study was to identify stressing factors, level of stress in nurses, overall health conditions, and coping strategies used by nurses in the working environment. Data collection was performed using three instruments: a survey for daily activities, an inventory of coping strategies, and an inventory for overall health conditions. The population of this study was composed by 143 nurses, most of them with a low level of stress (55.25%) and with a regular health condition (50.35%). Regarding coping forms, problem solving was the factor of highest average. In conclusion, educational actions must be encouraged with an aim to offer tools for professionals to develop coping strategies in their everyday activities, thus minimizing the effect of stress on their health conditions and at work.

## DESCRIPTORS

Nursing  
Stress  
Burnout, professional  
Adaptation, psychological  
Occupational health

## RESUMO

Estudo quantitativo com o objetivo de identificar estressores, nível de estresse dos enfermeiros, estado geral de saúde e formas de enfrentamento utilizadas pelos enfermeiros no ambiente de trabalho. Os dados foram coletados utilizando-se três instrumentos: formulário para levantamento de atividades diárias; inventário de estratégias de coping; inventário sobre o estado geral de saúde. A população deste estudo foi composta de 143 enfermeiros e a maioria encontra-se com baixo nível de estresse (55,25%) e com estado regular de saúde (50,35%). Em relação às formas de enfrentamento, identificou-se resolução de problemas como o fator de maior média. Concluindo, ações educativas devem ser incentivadas, a fim de disponibilizar ferramentas para que o profissional desenvolva estratégias de coping resolutivas em seu dia a dia, minimizando o efeito do estresse no seu estado de saúde e no seu trabalho.

## DESCRITORES

Enfermagem  
Estresse  
Esgotamento profissional  
Adaptação psicológica  
Saúde do trabalhador

## RESUMEN

Estudio cuantitativo que objetivó identificar estresores, nivel de estrés de los enfermeros, estado general de salud y formas de afrontamiento utilizadas por los enfermeros en el ámbito laboral. Los datos se recogieron mediante tres instrumentos: formulario de averiguación de actividades diarias, inventario de estrategias de coping, inventario sobre el estado general de salud. La población del estudio se compuso de 143 enfermeros, la mayoría de ellos con bajo nivel de estrés (55,25%) y con estado regular de salud (50,35%). En relación a las formas de afrontamiento, se identificó a la resolución de problemas como el factor de media mayor. Concluyendo, deben incentivar acciones educativas, a efectos de disponibilizar herramientas para que el profesional desarrolle estrategias de coping resolutivas en su cotidiano, minimizando el efecto del estrés en su estado de salud y en su trabajo.

## DESCRIPTORES

Enfermería  
Estrés  
Agotamiento profesional  
Adaptación psicológica  
Salud laboral

<sup>1</sup>Nurse. Ph.D. in Nursing, Adjunct Professor, Universidade Federal de Santa Maria. Substitute Coordinator of the Nursing Graduate Program. Santa Maria, RS, Brazil. lauraazevedoguido@gmail.com <sup>2</sup>Nurse. Master in Nursing. Doctoral Student in Nursing, Universidade Federal do Rio Grande do Sul. CAPES fellow. Porto Alegre, RS, Brazil. gracielelinch@gmail.com <sup>3</sup>Master in Nursing. Nurse, Hospital Universitário de Santa Maria. Santa Maria, SC, Brazil. luizapitthan@gmail.com <sup>4</sup>Nurse. Master Student in Nursing, Universidade Federal de Santa Maria. CAPES fellow. Santa Maria, RS, Brazil. juumann@hotmail.com

## INTRODUCTION

In view of the modern advancements, the innovations of organizations, techniques, and technologies, associated to the progressive and significant increase in occupational stress, have required people to make constant adjustments, increase their awareness, and improve their skills to cope with evolutions and manage stress. This dynamics, associated to the experience of each human being, results in new concepts; and, thus, emerges a need to learn new ways to deal with life, as well as theoretical-philosophical conceptions, perspectives of action, the development of awareness, and the necessary changes to improve quality of life <sup>(1)</sup>.

With an aim to minimize stress, people use coping strategies, which are defined as cognitive and behavioral efforts to dominate, tolerate, or reduce demands<sup>(2)</sup>. The way that people use coping strategies are, in part, determined by their internal and external resources, which include health, beliefs, responsibilities, support, social skills, and material resources<sup>(2)</sup>.

It is known that stress has become important in the current life style. It is considered to be a risk to one's psychosocial well-being, and is often related to changes in the health status. Furthermore, stress can risk the health of the members of an organization and affect workers' performance, and cause low morale, high turnover, absenteeism, and workplace violence<sup>(3)</sup>.

Therefore, the identification of work stressors is a step towards change, because once available strategies to minimize its effects are developed, they can make nurses' daily work routine more productive, less tiresome and, possible, increase their valorization as human beings and as professionals<sup>(1)</sup>.

Hence, studying nurses' stress in the hospital permits to reach a better understanding of its causes, which contributes to clarify everyday issues that these workers frequently deal with. There is, therefore, a need to improve knowledge to establish actions that are more consistent with the changes that have occurred in this workplace.

The objective of this study is to know the situations that nurses identify as common stressors in their work in the hospital setting, and to identify their overall health status and the coping strategies they use at the workplace.

## METHOD

This cross-sectional study was developed at a University Hospital in the Southern Brazil; a public institution considered a regional health reference, with approximately 300 beds. Data collection was performed during

the second semester of 2006> The study population was comprised by all nurses, regardless of their position or role, who agreed to participate in the study and provided written consent.

The three instruments below were used to collect the data, all of which were chosen aiming to meet the study objectives:

- *Daily activities survey form*<sup>(4)</sup> – divided into two parts: the first is used to characterize the nurses' profile; and the second consists of 51 items addressing the nurses' daily activities (possible stressors). Each item was rated as follows: zero, for activities that were not performed; one for low-stress activities; four for medium-stress activities, and seven for high-stress activities. Stress levels were rated as low (3.0 and under), medium (3.1 to 4.0), and alarm (above 6.0).

Stress scores were determined in six areas: interpersonal relationship (area A); unit functioning (area B); personnel management (area C); nursing care (area D); unit coordination (area E); working conditions (area F).

studying nurses' stress in the hospital permits to reach a better understanding of its causes, which contributes to clarify everyday issues that these workers frequently deal with.

- *Coping strategies inventory*<sup>(5-6)</sup> – consists of a questionnaire containing 66 items, which address the thoughts and actions used to deal with internal or external demands due to a stressful event, focused on the use of coping strategies. Each item offers four answer choices, with zero corresponding to *I did not use the strategy*, one to *I somewhat used it*, two to *I used it a lot*, and three to *I used it a great deal*.

The eight scales suggested by the authors of the instrument were used, as follows: confrontation (Factor 1); distancing (Factor 2); self-control (Factor 3); seeking social support (Factor 4); accepting responsibility (Factor 5); escape-avoidance (Factor 6); planful problem solving (Factor 7); positive reappraisal (Factor 8).

- *Overall health status inventory*<sup>(7)</sup> – consisting of 48 items aiming at characterizing the possible changes to the individual's physical health that occur after beginning the work shift in the hospital setting. It comprises 27 signs and symptoms that were scored according to their frequency: one for *I did not realize*; two *I sometimes have it*; three *I often have it*; and four *I always have it*. To evaluate the health status of each nurse, the total sum of their answers was considered and rated as good (43 and under), regular (44 to 87), or bad (88 to 130).f

The data were organized and stored on a Microsoft Excel<sup>®</sup> spreadsheet, and later analyzed electronically with the help of *Statistical Analysis System* software (version 8.02). Results were analyzed using frequency distribution, with absolute numbers and percentages to characterized

the studied population. The correlation between variables of interest and the data obtained with the research instruments was performed using *Spearman's* Correlation Coefficient. All results were verified as to their statistical significance at a 5% level.

The study was developed with the research group: Work, Health, Education and Nursing under the line *Stress, Coping and Burnout*, and complied with all the pertinent ethical and legal aspects, and was approved by the local Research Ethics Committee (protocol number 130/2004).

## RESULTS

The present study population consisted of 143 nurses, which accounted for 89.93% of all nurses working at the referred hospital at the moment of the data collection. Most participants were women (91.61%), in the age bracket between 41 and 50 years (46.85%), and married 68.53%.

As to the time since their graduation, it was found that 32.87% were equally distributed into three periods, from one to 10 years, from 11 to 20 years, and from 21 to 30 years. It was observed that 52.45% of nurses had been working at the studied hospital for one to 10 years.

As to their time working in the current unit, it was found that 71.33% of nurses were in the time bracket of one to 10 years of work, followed by 19.58% who had been at the unit for 11 to 20 years.

Most nurses (62.24%) had been trained to work at the hospital, and 72.73% of them chose to work at the unit. It was found that 54.55% of nurses worked the day shift, with a mean weekly workload of 36 hours for 46.15%.

The data showed that 72.73% of nurses had a graduate degree. In terms of having a second job, it was found that 64.34% did not. Furthermore, 58.74% had no ties with social classes.

Most nurses (55.25%) presented a low stress levels, followed by 34.26% with medium stress, and 10.49% in a state of alarm because of work stress. It is emphasized that none of the nurses were classified as presenting a high stress level.

As to the areas, it was evidenced that Area C (personnel management) has the highest mean ( $3.697 \pm 1.492$ ), and is, therefore, the area causing the highest stress to the studied population. Area D (nursing care) showed the lowest stress, with a mean of  $1.488 (\pm 0.653)$ .

Table 1 shows the items that nurses identified as causing the lowest and highest stress in the different stress areas.

**Table 1** – Items identified as causing the greatest and lowest stress in nurses, by stress areas - Santa Maria, RS - 2006

Stress areas	Item of highest	Item of lowest stress
Area A	Relationship with maintenance	Relationship with the Sterilization and Supply Center
Area B	Asking for equipment review/repair	Replacing supplies
Area C	Managing the nursing team	Training
Area D	Cope with patient death	Prescribing nursing care
Area E	Managing health care quality	Preparing the unit monthly
Area F	Performing tasks in the minimum available time	Participating in nursing department meetings

Table 2 lists the descriptive measures for the coping factors, and shows that problem solving (coping factor 7) has the highest mean, and that the least used factor, i.e., the one with the lowest mean, is confrontation (factor 1).

**Table 2** – Descriptive measures of the coping variable by factor - Santa Maria, RS - 2006

Coping factor	Mean	Median	Standard
1	<b>0.860</b>	0.833	0.485
2	0.972	1.000	0.381
3	1.384	1.400	0.455
4	1.687	1.666	0.513
5	1.574	1.571	0.515
6	1.184	1.000	0.791
7	<b>1.808</b>	1.750	0.595
8	1.610	1.666	0.534

Table 3 shows the data referring to the overall health status (OHS) of the study subjects, and it is observed that most nurses (50.35%) have regular health.

**Table 3** – OHS of nurses by level, frequency and percentage - Santa Maria, RS - 2006

Level of health status	N	%
0 – 43 Good	70	48.95
44 – 87 Regular	<b>72</b>	<b>50.35</b>
88 – 130 Bad	1	0.70
<b>Total</b>	<b>143</b>	<b>100</b>

By organizing the data it was possible to correlate the total stress, total coping factor and each nurse's overall health status.

The correlation analysis between stress and health status showed poor correlation ( $r = 0.30$ ;  $p < 0.05$ ). However, there was no significant correlation between stress and coping ( $p > 0.05$ ). As for health status and coping, there was a significant positive correlation ( $r = 0.40$ ;  $p < 0.05$ ).

## DISCUSSION

The prevalence of female nurses younger than 40 years was expected based on the findings of other studies<sup>(1,8)</sup>. It is known that nursing is a profession basically comprised by women, and for this reason, in addition to their living with the dynamics of the organizations when developing their practice, they must also manage their personal lives as mothers and wives<sup>(9)</sup>.

The fact of nurses working at the hospital, and current unit, for a long period of time can be a reason why most of them showed a low stress level. It is understood that there is a relationship between longer periods working at a place and lower stress, as nurses present more technical confidence and control over situations of everyday practice, in a way that they are no longer stressful<sup>(8)</sup>. Similarly, time offers support for the workers to adjust and make a better evaluation of their practice, thus mediating the negative impact of stress over work<sup>(10)</sup>.

As to having a graduate degree, it is evident that the studied nurses are concerned with their professional improvement, and this characteristic has been related to stress. A study that compared holding a graduate degree with the stress levels among nurses working in the ICU<sup>(8)</sup> found that nurses with a graduate degree presented high stress rates. However, other studies state that having a graduate degree increases self-esteem and helps improve performance, and, consequently, provides more security for nurses to cope with stressors at work<sup>(1,10)</sup>.

In this study, most nurses presented low stress levels, which differs from previous studies<sup>(8,11-12)</sup>, which can be directly related to the characteristics of the studied population, such as their choosing the work unit, holding a graduate degree, not having a second job, and also using problem-solving coping strategies. A previous study has shown that 70.84% of nurses who hold a second job present stress<sup>(12)</sup>.

However, area C (personnel management) was the studied area that showed the highest mean, hence the highest stress, for the studied population. Being responsible for people, as nurses are, demands more working time and attention dedicated to interaction, which increases the probability of stress caused by interpersonal conflicts. Therefore, nursing becomes a complex job involving great emotional tension, physical and psychological weariness, depending on the quality of the human relationships, all of which are fact that contribute to triggering the stress process<sup>(1)</sup>.

A study with nurses involved in managerial issues showed that these professionals presented chances six times greater to have high stress levels compared to nurses working in other areas<sup>(13)</sup>.

As to the coping strategies used, factor 7 is the one showing the most use of problem-centered strategies,

which suggests that the present study nurses face stressors using problem-solving skills. Therefore, using this strategy (problem solving) requires to define the problem, list the alternatives, compare them to the expected outcomes, and then select and implement an appropriate action plan<sup>(5)</sup>. In this sense, it is believed that the studied population use coping strategies effectively and hence to maintain low stress levels. However, no statistically significant difference was found for the correlation of these variables (stress and coping).

Similarly, a study investigated nurses' coping strategies and found evidence that these professionals suggested as problem-solving strategies activities related to the planning of work, rearranging patient schedules, distributing services, staffing, and creating programs for participation and for the evaluation of health care quality by using protocols, reducing the number of meetings, and reorganizing work<sup>(14)</sup>.

Studies differ regarding the prevalence of problem-centered or emotion-centered strategies<sup>(3,15)</sup>. This confirms that there is no such thing as effective or ineffective coping, because the choosing among the different strategies depends on the individuals, and their reactions to one same stressor can vary considerably. Therefore, it is essential to respect the particular characteristics of each worker.

It was found that a great number of professionals present a regular overall health status. These data agree with a study performed with nurses working with intensive care, which found low scores for these professionals' health status, showing the positive evaluations that nurses had of themselves<sup>(15)</sup>.

However, in this study, a positive correlation was found between the health status of nurses and stress and coping. Therefore, the fact that the studied subjects present a regular health status is directly related with the low stress level and their use of problem-centered coping strategies, which is understood as positive coping in the work stress process.

## CONCLUSION

The study population consisted mostly of women (91.61%), working at the unit between one and ten years (52.45%) and holding a graduate degree (72.73%). It was also found that 64.34% did not hold a second job.

This study found that nurses presented a low stress level, and that personnel management (area C) is the area with the highest mean (3.69±1.49), therefore, causing the highest stress for the studied population.

It was evidenced that 50.35% of nurses present a regular health status, and are frequently irritated and have headaches.

As to the coping strategies that nurses use, it was found that problem solving (coping factor 7) had the highest mean ( $1.80 \pm 0.59$ ).

By organizing the data it was possible to correlate the total stress, total coping factor and each nurse's overall health status. A poor positive correlation was found between stress and health status ( $r = 0.30$ ;  $p < 0.05$ ), and between health status and coping ( $r = 0.40$ ;  $p < 0.05$ ). However, no significant correlation was observed between stress and coping.

The present study results can serve to encourage the implementation of occupational health programs, with the purpose to minimize the effects of stress on nurses' health status by identifying signs and symptoms.

Therefore, educational actions should be promoted so as to provide the tools for professionals to develop problem-solving coping strategies in their everyday practice, thus minimizing the effect of stress on their health and on their work.

However, the results may have practical implications as they help the studied institution to reach a better understanding about these issues, and point at indicators regarding work, which could encourage the development and implementation of direct actions to improve workers' health status. Possible actions to minimize the effect from stress could improve nurses' work, making it more productive and fulfilling, guaranteeing the safety of both workers and patients.

## REFERENCES

- Guido LA. Stress e coping entre enfermeiros de Centro Cirúrgico e Recuperação Anestésica. [tese doutorado]. São Paulo: Escola de Enfermagem, Universidade de São Paulo; 2003.
- Schmidt DRC, Dantas RAS, Marziale MHP, Laus AM. Estresse ocupacional entre profissionais de enfermagem do bloco cirúrgico. *Texto Contexto Enferm*. 2009;18(2):330-7.
- Rodrigues AB, Chaves EC. Fatores estressantes e estratégias de coping dos enfermeiros atuantes em oncologia. *Rev Latino Am Enferm*. 2008;16(1):1-5.
- Bianchi ERF. Stress entre enfermeiros hospitalares [tese livre-docência]. São Paulo: Escola de Enfermagem, Universidade de São Paulo; 1999.
- Lazarus RS, Folkman S. Stress, appraisal, and coping. New York: Springer; 1984.
- Savóia MG, Santana PR, Mejias NP. Adaptação do inventário de estratégias de coping de Folkman e Lazarus para o português. *Psicol USP*. 1996;7(1-2):183-201.
- Chaves EC. Stress e trabalho do enfermeiro: a influência de características individuais no ajustamento e tolerância ao turno noturno [tese doutorado]. São Paulo: Instituto de Psicologia, Universidade de São Paulo; 1994.
- Guerrer FJL, Bianchi ERF. Caracterização do estresse nos enfermeiros de Unidades de Terapia Intensiva. *Rev Esc Enferm USP*. 2008;42(2):355-62.
- Spindola T, Santos RS. Mulher e trabalho: a história de vida de mães trabalhadoras de enfermagem. *Rev Latino Am Enferm*. 2003;11(5):593-600.
- Cavalheiro AM, Moura Junior DF, Lopes AC. Estresse de enfermeiros com atuação em Unidades de Terapia Intensiva. *Rev Latino Am Enferm*. 2008;16(1):1-8.
- Batista KM, Bianchi ERF. Estresse do enfermeiro em Unidade de Emergência. *Rev Latino Am Enferm*. 2006;14(4):534-9.
- Pafaro RC, Martino NMF. Estudo do estresse do enfermeiro com dupla jornada de trabalho em um Hospital de Oncologia Pediátrica de Campinas. *Rev Esc Enferm USP*. 2004;38(2):152-60.
- Lindholm M. Working conditions, psychosocial resources and work stress in nurses and physicians in chief managers' positions. *J Nurs Manage*. 2006;14(2):300-9.
- Martins LMM, Bronzatti JAG, Vieira CSCA, Parra SHB, Boaventura Y. Agentes estressores no trabalho e sugestões para amenizá-los: opiniões de enfermeiros de pós-graduação. *Rev Esc Enferm USP*. 2000;34(1):52-8.
- Britto ESB, Carvalho AMP. Stress, coping (enfrentamento) e saúde geral dos enfermeiros
- que atuam em Unidades de Terapia Intensiva e problemas renais. *Enferm Global*. 2004;4(1):1-14.

The authors thank the State of Rio Grande do Sul Research Foundation (FAPERGS) for the support and funding for the study. The authors thank the Graduate Studies and Research Pro-Rector's Office at Universidade Federal de Santa Maria for their support through the Special Support Program for International Publications (Pró-Publicações Internacionais)