STRESS AT WORK OF THE NURSING TEAM IN AN INTENSIVE CARE UNIT: INTEGRATIVE REVIEW

Objectives: to analyze evidence on the effects, signs, and symptoms triggering stress in the work of the nursing team in adult intensive care units. Method: this is an integrative literature review that sought to select scientific papers in the databases SciELO and LILACS through the following guiding question: “What are the effects, signs, and symptoms, and the factors that trigger stress in the work of the nursing team in adult intensive care units?”. The following descriptors were also used: “professional burnout”, “psychological stress”, and “intensive care units”. The inclusion criteria were: papers in Portuguese, fully available, and produced within the period from 2005 to 2011. The data were analyzed, sorted, and summarized in a unified and integrated research problem. Results: eleven papers were selected according to the inclusion criteria and because they addressed the issue. Given the evidence portrayed in the papers under analysis, it was possible to identify the main signs and symptoms: fatigue, tachycardia, loss of appetite, anxiety, and joint pains. The factors responsible for stress were: work overload, role conflict, professional devaluation, and work conditions. Conclusion: the papers found pointed out the high levels of stress, however, there’re few experimental studies indicating effective interventions to minimize them. Descriptors: burnout, professional; stress, psychological; intensive care units; nursing, team; occupational health.

RESUMO

Objetivo: analisar as evidências sobre os efeitos, sinais e sintomas e os fatores desencadeadores do estresse no trabalho da equipe de enfermagem em unidades de terapia intensiva adulta. Método: trata-se de uma revisão integrativa da literatura que buscou selecionar produções científicas nas bases de dados SciELO e LILACS mediante a seguinte questão norteadora: “Quais são os efeitos, sinais, sintomas e os fatores desencadeadores do estresse no trabalho da equipe de enfermagem em unidades de terapia intensiva adulta?”. Também foram utilizados os seguintes descritores: “esgotamento profissional”, “estresse psicológico” e “unidades de terapia intensiva”. Os critérios de inclusão foram: artigos em português, disponíveis na íntegra e produzidos no período de 2005 a 2011. Os dados foram analisados, ordenados e resumidos em uma conclusão unificada e integrada sobre o problema de pesquisa. Resultados: foram selecionados onze artigos segundo os critérios de inclusão e por tratarem do assunto. Diante das evidências retratadas nos artigos analisados, foi possível identificar os principais sinais e sintomas: cansaço, taquicardia, falta de apetite, calafrios, ansiedade e dores articulares. Os fatores responsáveis pelo estresse foram: sobrecarga de trabalho, conflito de funções, desvalorização profissional e condições de trabalho. Conclusão: os artigos encontrados apontam os elevados níveis de estresse, entretanto, são escassos os estudos experimentais que indicam intervenções eficazes para minimizá-los. Descriptores: esgotamento profissional; estresse psicológico; unidades de terapia intensiva; equipe de enfermagem; saúde do trabalhador.

RESUMEN

Objetivo: analizar las evidencias acerca de los efectos, señales y síntomas y los factores desencadenantes del estrés en el trabajo del equipo de enfermería en unidades de cuidados intensivos para adultos. Método: esta es una revisión integradora de la literatura que buscó seleccionar artículos científicos en las bases de datos SciELO y LILACS con la siguiente pregunta orientadora: “¿Cuáles son los efectos, señales, síntomas y los factores desencadenantes del estrés en el trabajo del equipo de enfermería en unidades de cuidados intensivos para adultos?”. También fueron utilizados los siguientes descriptores: “agotamiento profesional”, “estrés psicológico” y “unidades de cuidados intensivos”. Los criterios de inclusión fueron: artículos en portugués, disponibles en su totalidad y producidos en el período de 2005 hasta 2011. Los datos fueron analizados, ordenados y resumidos en una conclusión unificada e integrada acerca del problema de investigación. Resultados: once artículos fueron seleccionados según los criterios de inclusión y por abordar el asunto. Dadas las evidencias representadas en los artículos analizados, fue posible identificar los principales señales y síntomas: fatiga, taquicardia, pérdida de apetito, escalofríos, ansiedad y dolores articulares. Los factores responsables por el estrés fueron: sobrecarga de trabajo, conflicto de funciones, desvalorización profesional y condiciones de trabajo. Conclusion: los artículos encontrados apuntan los niveles altos de estrés, pero pocos estudios experimentales indican intervenciones eficaces para minimizarlos. Descriptores: agotamiento profesional; estrés psicológico; unidades de terapia intensiva; grupo de enfermería; salud laboral.
INTRODUCTION

Nowadays, stress is a problem studied by several professionals, as it poses a risk to the normal balance of the human being. Nursing practice in an intensive care unit (ICU) requires great control and mental exercise, considering that it implies to assist hemodynamically unstable people, not only to achieve stability, but also to address possible complications which demand prolonged and intensive care actions. It involves the ability to deal with high-tech equipment, a faster routine, the constant atmosphere of apprehension, and the imminence of death, which exacerbate the emotional and physical distress of these professionals.

Starting from these assumptions, stress is defined as one of the factors responsible for changes in an individual’s well-being and health status which can lead to illness and death. The subject matter has been investigated for decades. It’s regarded as a major worldwide problem; it’s a matter of concern not only to union leaders, but also to the national and international scientific community, the government organs, and the organizations themselves. This is so because the absenteeism level, behavioral or emotional abandonment of work, and psychosomatic illnesses impair the quality of life of the professional, the organization, and the community as a whole.

The ICU is perceived by the team which works in it, as well as patients and relatives, as one of the harshest, tensest, and most traumatizing environments within the hospital. A study, carried out in ICUs in the Vale do Paraíba Paulista, showed that 11 professionals of the nursing team (52.38%) at Hospital A and 17 (73.91%) at Hospital B regarded the provision of care to a large number of patients as a stressing factor.

Given this context and the nursing team’s work conditions, the need to search for innovative interventions emerges, in order to minimize conflict situations faced by these professionals, as well as the search for scientific evidence on the situations generating stress and the signs and symptoms presented by the nursing professionals.

It’s also noteworthy that, even being a theme widely explored in the scientific field, there’s a need to carry out this study, in order to analyze the major researches which evaluated the nursing team stress, especially professionals working at the ICU. Thus, it’ll be possible to contribute to improve the nursing professionals’ knowledge, encouraging the development of clinical researches aimed at the well-being of these workers, as well as the application of measures with the purpose of reducing the stress on these professionals arising from the work activity.

OBJECTIVE

- To analyze evidence on the effects, signs, and symptoms, and the factors triggering stress in the work of the nursing team in adult intensive care units.

METHOD

Integrative literature review study, aiming to gather and synthesize research results on a delimited theme, in a systematic and orderly way, being an instrument to deepen knowledge on the theme under investigation and allowing a synthesis of multiple published studies, as well as general conclusions from a particular study field. The methodological path adopted took the steps described below.

The first step was formulating this guiding question: “What are the effects, signs, symptoms, and the factors triggering stress in the work of the nursing team in adult intensive care units?” Faced with it, we went on to the second step, whose purpose was selecting the papers which would constitute the sample.

To identify the published studies addressing the research question, online search was used, through the Virtual Health Library (VHL), in the following databases: Latin American and Caribbean Health Sciences Literature (LILACS) and Scientific Electronic Library Online (SciELO). The search was carried out on December 2011, using controlled descriptors (DeCS/Mesh) according to the databases concerned. The research with descriptors aimed that they were combined and/or modified in each database, in order to ensure a wide scope search. Thus, the descriptors used for the search were: “burnout”, “psychological stress”, and “intensive care units”.

The criteria for sample selection were: papers fully available, in Portuguese, published within the period from 2005 to 2011, and evaluating the nursing professionals’ stress at the ICU.

During the search, 306 papers were identified in the two selected databases. Out of these, we excluded the studies which didn’t provide an answer to the guiding question and the purpose of this review; theses, dissertations, studies with other professionals who didn’t belong to the nursing team, researches carried out in neonatal or...
pediatric care units.

Through the inclusion and exclusion criteria, 11 papers were selected in LILACS and 3 papers in SciELO. It’s worth emphasizing that, out of the 14 papers identified, 3 papers were simultaneously found in both databases searched, therefore, they were excluded, totaling 11 papers — which constituted the sample. In the third step, the evaluation of the studies included in the integrative review was performed, using the instrument construed and validated by URSI, which contains some items extracted from the papers, such as: publication country, journal, publication year, authors’ academic degree, study type, and evidence level, among others.

In the fourth step, the results were interpreted, after an analysis of data from the papers, in order to highlight pertinent and relevant information with regard to the proposed aim. This interpretation was carried out by ordering and encoding the data into a unified and integrated conclusion on the research problem.

### RESULTS

After an analysis of the 11 selected papers, some of their main characteristics were extracted, which are displayed in Figure 1.

![Figure 1. Papers published in the LILACS and SciELO databases, within the period from 2005 to 2011, and some of their main characteristics.](image-url)

Regarding the publication country, 11 (100.0%) studies are from Brazil, being 4 (36.3%) of them from the capital of Sao Paulo, 2 (18.2%) from the countryside of Sao Paulo, 1 (9.1%) from Rio de Janeiro, 1 (9.1%) from capitals of Brazilian states, except Roraima, Rondonia, and Santa Catarina, 1 (9.1%) from northern Parana, and 1 (9.1%) from the capital of Santa Catarina.

Concerning the authors’ academic degree, 11 (100.0%) are nurses, and it’s noteworthy that: 8 (72.7%) papers were published in the General Nursing area and 3 (27.2%) in the Health area.

Analyzing the papers retrieved, it was found that the publications pertinent to the theme varied each year: from 2005 no paper on the study theme was retrieved, from 2006 3 (27.2%) papers were retrieved, from 2007 no paper was retrieved, from 2008 there were 4 (36.3%), from 2009 there were 2 (18.2%), from 2010 there was 1 (9.1%), and from 2011 there was also 1 (9.1%) paper retrieved.

Regarding the study type, among the 11 papers analyzed, the methodological characteristics were distributed this way: 5 (45.4%) qualitative, 5 (45.4%) quantitative, and 1 (9.1%) literature review.

In the sample of studies, 6 (54.5%) were performed only with nurses, 4 (36.3%) with nursing teams, and 1 (9.1%) only with nursing technicians.

Among the limiting factors, it was observed that 3 (27.2%) the studies raised issues related to the small sample size and 8 (72.7%) didn’t mention anything.

Regarding the assessment of methodological rigor, in 3 (27.2%) quantitative studies, within the samples obtained to carry out descriptive studies, the inclusion criteria...
The findings of this study show the interest of Brazilian researchers for this theme; most researches were developed in the metropolitan region of Sao Paulo, possibly because it’s a large urban center with several large hospitals, which provide care to critical patients.

Regarding the authors’ academic degree, all of them are nurses. The studies’ analysis allows a knowledge construction, the connection of different professional categories is always important, strengthening scientific knowledge and creating opportunity for interdisciplinarity, i.e., conceptual partnerships between Nursing and other health areas. Another fact to recall is that the research focused on a particularity, the study on stress involving the nursing team, which is related to an interest of interest to the nursing professional.

It was observed that, in the papers evaluated, publication also occurred more frequently in the Nursing area, probably because the theme is related to the nursing professional.

According to the proposed aims, Figure 1 displays the main factors triggering stress, perceived by the nursing team in adult intensive care. Work overload and double shifts stand out.

Faced with the factors triggering stress, we have the effects, signs, and symptoms presented by the professionals who make up the nursing team in adult intensive care which were mentioned in the scientific papers evaluated (Figure 2).

Analyzing the papers retrieved, one realizes that the works pertinent to the theme had a variation each year: from 2005 no published paper on the proposed theme was found, however, there was an increase since 2006, and in 2008 there was an increase in the interest on this theme, as four papers were found. This shows that the concern with this issue has been growing every year; but in 2010 and 2011 there was a decrease, something which suggests the need to survey gaps and areas requiring further investigation.

In the study sample, most of the papers works out the professional category of nurses, and only one paper worked out exclusively the nursing technicians. Therefore, it’s suggested that this concern with stress among nurses is due to their administrative role, as managers and moderators of conflicts, factors triggering stress, something which may be concluded from some papers.1,10

Regarding the limiting factors, it was found that most of the evaluated papers didn’t mention such elements and only a few of them raised issues related to the small sample size, another important aspect of the published works is their methodological

### Factors triggering the signs and symptoms caused by stress

<table>
<thead>
<tr>
<th>Factors triggering stress</th>
<th>Signs and symptoms triggered by stress</th>
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<tbody>
<tr>
<td>Biological accidents</td>
<td>Distress</td>
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<td>Changes of sleep and wakefulness</td>
<td>Anxiety</td>
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<td>Noisy environment</td>
<td>Arrhythmias</td>
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<td>Nursing care</td>
<td>Fatigue</td>
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<td>Exhaustive workload</td>
<td>Headache</td>
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<td>Work conditions</td>
<td>Overeating</td>
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<td>Role conflict</td>
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<td>Professional devaluation</td>
<td>Discouragement</td>
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<td>Double shifts</td>
<td>Wear</td>
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<td>Lack of autonomy</td>
<td>Joint pain</td>
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<td>Lack of material resources</td>
<td>Emotional exhaustion</td>
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<tr>
<td>Operation of the unit</td>
<td>Muscle spasms</td>
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<tr>
<td>Dissatisfaction of work</td>
<td>Emotional exhaustion</td>
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<tr>
<td>Death of patient</td>
<td>Loss of appetite</td>
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<tr>
<td>Organization of work</td>
<td>Gastrites</td>
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<tr>
<td>Reduced number of personal</td>
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<td>Limited human resources</td>
<td>Hyperthermia</td>
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<td>Interpersonal relationships</td>
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<td>Remuneration</td>
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<td>Work overload</td>
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<td>Work unit</td>
<td>Irritation</td>
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<td>Physical and psychological suffering</td>
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<td>Tachycardia</td>
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Figure 2. Main factors triggering stress and the signs and symptoms, perceived by the nursing team in adult intensive care, extracted from published papers in the LILACS and SciELO databases within the period from 2005 to 2011.

**DISCUSSION**

The findings of this study show the interest of Brazilian researchers for this theme; most researches were developed in the metropolitan region of Sao Paulo, possibly because it’s a large urban center with several large hospitals, which provide care to critical patients.

Regarding the authors’ academic degree, all of them are nurses. The studies' analysis allows a knowledge construction, the connection of different professional categories is always important, strengthening scientific knowledge and creating opportunity for interdisciplinarity, i.e., conceptual partnerships between Nursing and other health areas. Another fact to recall is that the research focused on a particularity, the study on stress involving the nursing team, which is related to an interest of interest to the nursing professional.

It was observed that, in the papers evaluated, publication also occurred more frequently in the Nursing area, probably because the theme is related to the nursing professional.
design. In this domain, out of the 11 papers found, 5 used a quantitative approach, 5 used a qualitative one and only 1 consisted of a literature review. It’s noteworthy that the epistemological consistency and methodological rigor are considered quality criteria for research. In this review, evidence mostly emerges in the procedure of data collection, in 4 quantitative studies the inclusion criteria weren’t described, besides, in 2 of them the calculations to obtain the samples weren’t mentioned and the results weren’t supported on variables previously established and statistically significant.

Although we found few studies carried out at the end of 2010 and 2011, the results of these studies suggest that there’s still a need for further investigations with a strong evidence level, from systematic reviews or meta-analysis of all relevant randomized controlled clinical trials (RCTs) or from clinical guidelines based on systematic reviews of RCTs. Only one clinical study was found, something which shows the need for intervention studies, in order to minimize the signs and symptoms, since the studies surveyed several signs and symptoms, standing out fatigue, which was found in almost all papers analyzed.

Concerning the guiding question, one can observe that the factors triggering stress are usual in the papers under analysis. The stressor is any experience or situation which generates feelings of tension, anxiety, fear, or threat, which can have an internal or external origin. A study observed the perception of nurses with regard to stressing agents, claiming that there weren’t different stress levels among different shifts, however, investigations on the theme show that the individual differences and work situations, changes in sleep and wakefulness, can be responsible for the presence of stress for nurses, as alternating work shifts, especially at night.

In another study, carried out only with nursing technicians, we obtained as a result that the subjects experience feelings such as: suffering, helplessness, pleasure, fatigue, and stress. Nursing work at the ICU is developed in a scenario which includes patients in critical health status, who depend on care, making this environment a tiring and stressful place with work overload.

Work overload was mentioned as a stressing factor in most papers which made up this review; in a survey whose participants answered to questions on the meaning of being a nursing professional working in ICU, they expressed their feelings in terms of satisfaction and dissatisfaction with regard to the work in ICU. In the daily work of these professionals, satisfaction emerges in a clear way, indicating coherence between discourse and praxis. These professionals enjoy working with the patient and they show ability in their daily work, however, there’s professional dissatisfaction, sometimes manifested under the form of frustration, helplessness, and devaluation feelings. Such feelings also emerge when they fail to perform all planned activities during their working hours or when the staff is reduced in number, up to the point of being considered insufficient to provide the care actions in a humanized and competent way.

The lack of material resources at the unit also plays a decisive role in the continuity and quality of nursing care, since they can endanger both the nursing professionals and the patients they assist.

In addition to this, many nursing professionals have double employment, especially due to the low remuneration paid to this professional category, something which leads them to seek a new income source, making them more vulnerable to stress, as they have to leave an institution and go to another one, often without an adequate rest.

It’s also noteworthy a study carried out with ICU nurses, which found out that over half of the sample worked between 10 and 12 hours, resulting in an exhaustive workload, considering the type of work and their assignments.

The work environment was also considered a factor triggering stress, having in mind that it has a heavy traffic of personnel, equipment noise, inadequate physical plant, issues involving not only the physical environment, but the sector’s dynamics itself, and the requirements posed by the organization. Considering this environment, one stresses that the role conflicts generate dissatisfaction in labor relations and the professional devaluation can lead to demotivation or even to the abandonment of work activity, thus causing high rates of absenteeism.

These inherent characteristics of the ICU work environment, which involve work overload, to tackle the suffering of another person, can generate physical and mental health problems in the professionals, which aren’t always properly estimated. One can notice in this this review that the nursing professionals who work in ICU perceive the heavy environment and the work overload, reporting fatigue and physical and mental
distress. Another factor which perhaps contributes to distress is the environment in these units itself, since the work pace is extremely fast and, at every moment, the possibility of death is a reality.

A research carried out in Florianopolis revealed that the lack of a good relationship directly interferes with the assistance provided and job satisfaction, generating more stress for the nursing team at the ICU. Other sources of stress were also found in this study and related to the interaction, among them: poor communication, use of inappropriate defense mechanisms, such as non-execution of teamwork, and impatience.

It’s important to emphasize that the person affected by stress can show physical, mental, and emotional exhaustion, with decreased personal accomplishment at work and depersonalization, observed when there’s a demand for high intellectual qualification, with important decisions to be made and intense emotional load. The effects of stressing agents are presented in varying intensities, and they produce associated cognitive and emotional effects.

Signs and symptoms of stress, developed by the nursing professionals who work at the adult ICU were analyzed in this study, and among them stand out: fatigue, tachycardia, loss of appetite, chills, anxiety, distress, gastrointestinal disorders, emotional exhaustion, insomnia, and joint pains.

These signs and symptoms resulting from stressing stimuli can affect the professionals, leading to absenteeism, leave due to health problems from the Burnout syndrome, decreased quality of the nursing care offered, conflicts between the nursing professionals due to the stress caused by the lack of interventions to minimize the effects of stressing factors, since it’s a theme of interest both for workers and organizations.

CONCLUSION

Given the evidence portrayed in the papers under analysis, it was possible to conclude that the main signs and symptoms of stress among the nursing professionals working at the adult ICU are: fatigue, tachycardia, loss of appetite, chills, anxiety, and joint pains, being the main reported factors and those responsible for triggering stress: work overload, role conflicts, professional devaluation, and work conditions.

A lack of researches was found, with a strong evidence level. The studies retrieved point out high stress levels among the nursing professionals working at adult ICUs, however, few studies indicate effective interventions to minimize them. Therefore, there’s a need for carrying out clinical surveys, among them intervention studies testing measures and practices which can relieve stress on the nursing workers, thus increasing the evidence level of studies addressing this theme.

It’s a must to conduct team meetings, plan activities, participate actively in the decisions of the multiprofessional staff, and provide professional appreciation in a positive and satisfactory way in order to be able to obtain a good quality in nursing care, but never ceasing to look at these professionals as people caring for other people, who need to be perceived as human beings with feelings and emotions of their own.

This way, institutional measures aiming to raise the well-being of these professionals and their mental health are relevant, through labor gym, which can take place within the workplace, acupuncture, physical exercise, activities promoting relaxation, besides the encouragement for workers to adopt healthy habits, such as adequate feeding, physical activity practices, among others, which contribute to improve their health status. Thus, the nursing worker will preserve her/his physical and mental integrity, enabling conditions so that the professional is able to develop her/his work with quality and excellence.

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