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REVIEW

The impact of job stress on the nursing profession: a comprehensive approach

El impacto del estrés laboral en la profesión de enfermería: un enfoque integral

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ABSTRACT

Introduction: Job stress in nursing represents a significant challenge due to the particular characteristics of this profession. Nurses faced working conditions that include constant contact with processes of suffering, death and emotional overload, which impacted both their physical and mental health. In addition, factors such as long working hours, moonlighting and adverse working conditions intensified stress, affecting their quality of life and professional performance.
Development: The phenomenon of work stress was first described by Hans Selye and comprises phases of alarm, resistance and exhaustion. In nursing, prolonged exposure to stress triggered physical health problems such as immunological, cardiovascular and metabolic alterations, together with psychological symptoms related to Burnout syndrome. This syndrome, characterized by emotional exhaustion and depersonalization, was associated with psychosocial factors such as excessive workload, rotating shifts and emotional demands derived from contact with patients in critical situations. Recent studies also highlighted the influence of the gender perspective, underlining the inequalities affecting women in this profession, such as unfavorable labor relations and greater exposure to risks.
Conclusion: Job stress in nursing is a complex problem that requires comprehensive strategies for its mitigation. The implementation of organizational policies that promote occupational health, along with the development of stress management skills and psychological support, proved crucial. This holistic approach would improve not only the quality of life of nurses, but also the care provided to patients and the sustainability of health systems.

Keywords: Occupational stress; nursing; Burnout; psychosocial factors; occupational health.

RESUMEN

Introducción: El estrés laboral en enfermería representa un desafío significativo debido a las características particulares de esta profesión. Los enfermeros enfrentaron condiciones laborales que

incluyen contacto constante con procesos de sufrimiento, muerte y sobrecarga emocional, lo que impactó tanto en su salud física como mental. Además, factores como jornadas prolongadas, pluriempleo y condiciones laborales adversas intensificaron el estrés, afectando su calidad de vida y desempeño profesional.
Desarrollo: El fenómeno del estrés laboral fue descrito inicialmente por Hans Selye y comprende fases de alarma, resistencia y agotamiento. En enfermería, la exposición prolongada al estrés desencadenó problemas de salud física como alteraciones inmunológicas, cardiovasculares y metabólicas, junto con síntomas psíquicos relacionados con el síndrome de Burnout. Este síndrome, caracterizado por agotamiento emocional y despersonalización, se asoció a factores psicosociales como la carga de trabajo excesiva, turnos rotativos y demandas emocionales derivadas del contacto con pacientes en situaciones críticas. Estudios recientes destacaron también la influencia de la perspectiva de género, subrayando las desigualdades que afectan a las mujeres en esta profesión, como relaciones laborales desfavorables y mayor exposición a riesgos.
Conclusión: El estrés laboral en enfermería es un problema complejo que requiere estrategias integrales para su mitigación. La implementación de políticas organizacionales que promuevan la salud ocupacional, junto con el desarrollo de habilidades para el manejo del estrés y apoyo psicológico, resultó crucial. Este enfoque holístico mejoraría no solo la calidad de vida de los enfermeros, sino también la atención brindada a los pacientes y la sostenibilidad de los sistemas de salud.

Palabras clave: Estrés laboral; enfermería; Burnout; factores psicosociales; salud ocupacional.

INTRODUCTION

Work is an individual and collective human activity that requires a series of contributions such as effort, time, aptitudes, and skills, among others. People carry out these activities hoping to receive economic, material, psychological, and social rewards that satisfy their needs. For the specific work of providing care in the nursing profession, the activity includes a broad vision of life processes, dealing with complex feelings with a significant physical and psychological burden (Següel Palma, Valenzuela Süazo, and Sanhueza Alvarado, 2015).

Regarding the specificity of the type of work carried out by nurses, Flores et al. (2017) state that the work is linked to the life and health of patients; the contact with processes of crisis, illness, suffering, and death, added to working conditions of "routine fragmented and stereotyped by the community in general" put the physical and mental health of nurses at risk. Nursing recognizes people's care needs and meets them with competence and ethics.

Campero et al. (2013) define stressors as a series of elements, including noise, lighting, workspaces, interpersonal relationships, and work overload, manifesting signs and symptoms. The social relevance of this problem is based on the need to promote the occupational health of nurses in order to correct work-related stress by identifying and intervening in the factors that cause it. International organizations such as the World Health Organization (WHO) insist on the importance of preventing and controlling workplace stress to resolve professional performance deficits and reduce the high personal and social costs it generates. Together with the Pan American Health Organization (PAHO, 2016), they state that stress has

become a social and health problem that has significant repercussions for workers, their families, and institutions. Mexico tops the world ranking, followed by China, which previously led the list. The WHO estimates that between 5% and 10% of employees in developed countries suffer work-related stress, while in industrialized countries, the figure rises to 20% to 50% of workers. These working conditions are mainly observed among doctors, nurses, and other health professionals in the health sector. Cabañas (2015) states that the statistics on work-related stress reveal the high level of impact in European countries due to various pressures in this field: Switzerland (68%), Norway and Sweden (31%), and Germany (28%).

DEVELOPMENT

Stress and physical health

For a long time, the term stress was only used in engineering to designate the effects of a force acting against a resistance. Selye (1926) first used the term from a psychobiological perspective when he was a second-year medical student at the University of Prague. In its initial meaning, stress means a response to a stimulus or agent - a stressor - that produced that reaction. In 1973, Selye defined stress as "the body's non-specific response to any demand placed on it" and characterized it as an adaptive effort in the face of a problem and a non-specific reaction (Barrio, García, Ruiz, and Arce, 2006). Ávila (2014) describes it as a "natural process of the human body that generates an automatic response to external conditions that are threatening or challenging, requiring a mobilization of physical, mental and behavioral resources to deal with them, and which sometimes disturb the person's emotional balance."

The physiopathology of this phenomenon recognizes three phases, as Hans Selye himself described in 1956: alarm reaction, resistance state, and exhaustion phase.

Figure 1: Diagram of the phases of General Adaptation Syndrome (Selye 1936).

Source: Gárate Pérez (2012). Study on the role of the tlr-4 receptor pathway in stress-induced neuroinflammation.

In the alarm reaction, the organism that perceives threatening circumstances is physiologically altered by activating the hypothalamus, the pituitary gland, and the adrenal glands. The cerebral activation generated by the perception of threat or risk stimulates the hypothalamus, producing releasing factors that act as stimulant messengers in some body regions. The hormone ACTH (adrenocorticotropin) reaches the cortex of the adrenal gland through the bloodstream, which is responsible for producing

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glucocorticoids (cortisol and cortisone). Meanwhile, a second stimulation via the nerve pathway from the hypothalamus to the adrenal medulla activates the secretion of catecholamines (adrenaline and noradrenaline). When the threat from physical, chemical, biological, or social agents is prolonged, the organism adapts to a dynamic equilibrium - or homeostasis - between the internal and external environments. This state of resistance prepares the organism to adapt over a prolonged period.

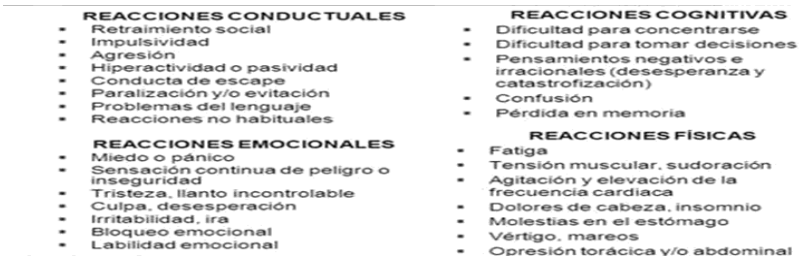
The body's ability to defend itself against a situation of prolonged stress leads to a final phase of exhaustion with a state of great deterioration and significant loss of physiological capacities where the subject usually succumbs to the demands as their capacities for adaptation and interrelation with the environment are reduced to a minimum. The chronic stress situation will cause a continuous release of the described stimulant factors and will lead to harmful overstimulation of the target organs. An excessive release of glucocorticoids and catecholamines can cause cardiac, immunological, or digestive alterations. Another change under stress is the decrease in endorphin levels produced by the pituitary gland, which acts on the nervous system to reduce pain (Sánchez, 2010).

Work-related stress that lasts a long time can affect health, as can any kind of prolonged stress. In general terms, attention should be paid to physical symptoms related to heart health, immune system deficiency, exhaustion, and increased work injuries. Some signs can be considered, such as frequent headaches, stomach and gastrointestinal discomfort, and back pain (A.D.A.M. Medical Encyclopedia, 2020).

Stress and mental health

In addition to the physical consequences of stress, some symptoms and signs come from more abstract dimensions of the human being.

Figure 2: Reactions to stress.



Source: Rodríguez and Quiñones Berrios (2012). Psychological well-being in the process of helping university students.

From the perspective of Castillero-Mimenza (2018), the term mental health implies a complex concept for which there is no single general definition because it depends on the biological and cultural discipline and perspective from which it is approached. "In general terms, it is possible to define mental health as the state of subjective well-being in which a person is capable of coping with the psychosocial demands of everyday life, is aware of their abilities, and can - thanks to them - adapt and integrate effectively into the world around them." Based on this concept, mental health represents a state of cognitive, emotional, and behavioral balance between the person and the world that allows them to function

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correctly, satisfy their needs, and feel fulfilled. Mental health implies a state of psychological well-being as "a set of positive sensations derived from a mental state in which self-realization and the ability to cope with or adapt to environmental situations and demands prevail."

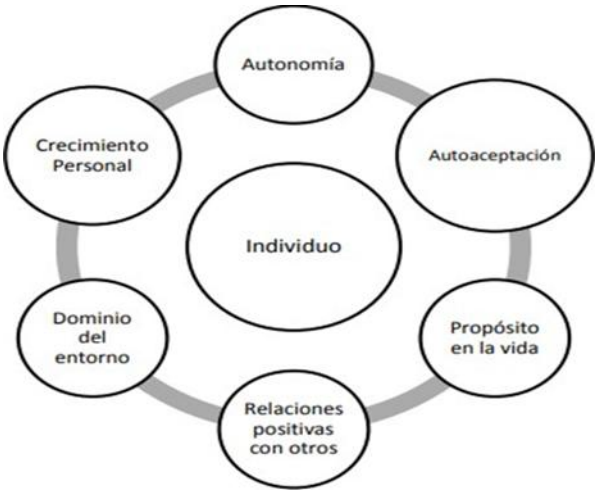
Psychological well-being is subjective and is configured mainly according to the multidimensional model of Psychological Well-being proposed by Ryff (1989), which can be considered a precursor of current models of Positive Psychology (Farías, 2021).

The model is characterized by a high level of self-acceptance based on the ability to

validating the positive and negative aspects of oneself. In this way, the aim is to achieve and maintain positive and deep relationships with the environment in order to influence it, "to choose independently and make one's own decisions based on one's own beliefs, the possibility of growing and developing personally" (Castillero-Mimenza, 2018)

Camargo et al. (2021) point out that Ryff herself concludes in her research that these abstract dimensions are related both to greater life satisfaction and subjective well-being and to indicators of better physical health: "lower cortisol levels (less stress), lower nicotine levels (an indicator of chronic inflammation processes), lower cardiovascular risk and longer REM sleep (better sleep pattern)".

Figure 3: Multidimensional model of Psychological Well-being proposed by Ryff (1989).



Source: Rodríguez and Quiñones Berrios (2012). Psychological well-being in the process of helping university students.

From the perspective of psychoanalysis, Chevalier (2021) defines the psychic symptom as "subjective manifestations of a conflict and its attempts at resolution, related by the patient, (where) the causes are not observable, nor can they be recorded through clinical examinations." It refers to the manifestation of an unconscious conflict and the possibility of expressing what is repressed between two opposing forces: desire and defense. The desire for conflict - which was repressed during childhood in an event known as trauma - returns in the form of a symptom. This trauma or psychic wound must be treated and healed like a physical wound.

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When chronic work-related stress was discussed in the previous chapter, the possible appearance of physical symptoms in the area of cardiac health, immune system deficiency, exhaustion, and an increase in workplace injuries was generally mentioned, with some signs such as frequent headaches stomach, and gastrointestinal discomfort, difficulty sleeping or resting and back pain. Now, we can add manifestations such as depression, problems in interpersonal relationships, feelings of discontent at work, frequent feelings of anger, and explosive outbursts (A.D.A.M. Medical Encyclopedia, 2020).

Stress, Burn-In, and Burn-Out

It has been said that stress corresponds to the body's set of responses to environmental pressures and depends on the person's perception insofar as it is subjective, with different meanings for each person in each situation.

Figure 4: Phases of evolution of stress response.

Source: PilejeLaboratoire (2022). Stress, performance and health.

To recap, the alarm phase is an alert of the senses with rapid mobilization of resources and corresponds to the immediate survival response. A great deal of energy is mobilized for a physical fight-or-flight response. The resistance phase appears if the perception of threat is prolonged and the need to maintain high levels of energy production and availability will install a "hypercortisolemia (which) can produce alterations in immunity, the metabolism of sugars and fats, sleep and mood disorders, and even an alteration of brain neurons." At this point, the phase of psychological exhaustion or burn-in is introduced, where the individual tries to continue adapting, but the loss of serotonin and dopamine - combined with the aforementioned hypercortisolemia - installs "the harmful signs of stress": fatigue, anxiety, loss of pleasure and immunodeficiency. The mental and physical exhaustion phase - or occupational burnout syndrome - is characterized by intense fatigue accompanied by a "disconnection of the professional and

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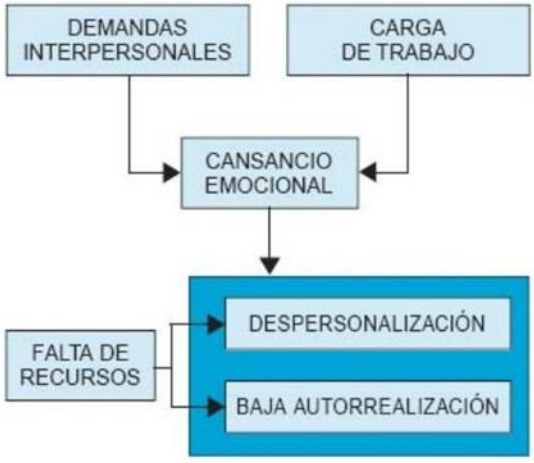
personal activities of the subject who suffers from it... it is a more or less long process (it can insidiously establish itself over the years) in which people in a situation of chronic stress sink". The systems of psychic and physical response are entirely exhausted. The treatment will include the detected symptom and "act on the socio-professional context, which is the origin of the syndrome." These professionals will express feelings of depression, lack of interest or motivation, and tiredness, exhaustion, or lack of energy (Pileje-Laboratoire, 2022).

According to Joffre-Velázquez et al. (2008), the symptoms show these professionals to have a progressive increase in irritability and a more remarkable inability to concentrate, think logically, and make decisions. They enjoy their work less and less, and behavioral changes appear "as a consequence of a defensive type of coping that avoids stressful tasks and seeks personal detachment, so there is a tendency to treat patients in a distant, routine and mechanical way, putting the gratification of one's own needs before the professional and work service provided." In addition to a lack of interest in working, there are various non-specific physical pains, sleep disorders, and psychosomatic illnesses. Interaction with others is conflictive, and "the subject begins with feelings of persecution or that everyone is against them, absenteeism at work increases, as do changes in work areas or work shifts." In extreme situations, there is a tendency towards self-medication, alcoholism, and drug dependency. There may be suicide attempts, accidents, and definitive abandonment of work.

Figure 5: Explanatory model of the dynamics of Burn-out



Source: Fidalgo Vega, M. (2001). NTP (Good Practice Guide) 704: Burnout (I): definition and process of generation.

The Maslach Burnout Inventory (MBI) has become a good standard for measuring burnout and has been validated in several cultural and work contexts. The original MBI consists of 22 items to evaluate the three dimensions of the syndrome and has two specific versions for measuring health professionals (Human Service Survey or MBI-HSS) (Pérez, C. et al., 2012).

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Joffre-Velázquez et al. (2008) state that the items are proposed as statements about the professional's feelings and attitudes about their work to measure three aspects of Burnout syndrome: a subscale or domain of exhaustion or emotional fatigue, a subscale or domain of depersonalization, and a subscale or domain of personal fulfillment.

Finally, these three chapters of the theoretical framework allowed us to position stress as a physiological response phenomenon that can become a serious problem if it persists over time. Its pathophysiology and the clinical impact of the physical symptomatology were presented. Subsequently, from an integral concept of mental health, stress was approached as a mobilizer of subconscious conflicts that emerge as a symptom that affects people's quality of life. To conclude this stage of the work, the psychological symptoms were addressed from the perspective of a well-known syndrome - Burnout - which provided the theoretical basis for determining three areas of exploration compatible with the dimensions of assessment of the syndrome.

Psychosocial risk factors

A classic concept expresses that "risk is a measure that reflects the probability of an event or damage to health (illness, accident or death) occurring." A risk factor is an observable characteristic, condition, or circumstance of a person or group of people that is known to be associated with the probability of developing or suffering a specific type of damage to health. Sometimes, the same factor can be linked to the probability of more than one type of damage occurring, while at other times, the factors are associated with or potentiate each other to produce it (Dumoy, 1999).

However, workers - and health professionals as such - are individuals exposed to personal and collective factors shared within their work environment.

Neffa (2015) states that "work is the result of voluntary human activity carried out under stress." Although work involves people integrally, it can be recognized that the first impact is physical and perceived - in the first place - by the body. There is a subjective investment of the worker when the resistance offered by reality compromises his or her know-how, violates his or her individuality, and threatens to destabilize him or her. In principle, we will distinguish two main dimensions from which the risk factors originate: environmental risks - prolonged exposure to chemical and biological agents, environmental agents, inadequate lighting, loud noises, etc. - and situations related to the work process - working days that exceed the socially acceptable limit, being on call to interrupt rest time according to institutional needs, overtime, night work, rotating shift work, among others.

Having reached this point of theoretical progress, it is necessary to recognize the differences between work-related and chronic work-related stress with Burnout Syndrome. Exposure to short-term work-related stress can have positive effects when it increases motivation and work performance. However, it becomes chronic in a group of workers - not excluding particular situations - when exposure to the factors is no longer limited to specific moments and has become the institutional rule. Established as a chronic situation, it gives rise to various pathologies - even aggravating pre-existing morbid processes - with

detrimental effects on the physical and mental health of the worker. Burnout is an extreme response to chronic work-related stress. It appears, above all, "in professions that involve interacting with people, when the worker cannot bear the pressure and responsibility of the job and perform it according to the expected parameters." The European Agency for Safety and Health at Work (EU-OSHA) states that work-related stress is experienced "when the demands of the work environment exceed the ability of workers to cope with them (or control them)"; that is, stress is compatible with a "state of physical and psychological tension that arises when there is an imbalance between the high demands of the work environment and the worker's possibilities of responding adequately to them." The external burdens or demands that provoke a stress reaction are called stressors. Subsequently, stressors have evolved and become known as psychosocial risk factors. The Spanish National Institute for Occupational Safety and Health (INSST) defines them as "those conditions present in a work situation directly related to the organization of work and its social environment, to the content of the work and the performance of the task, and which can affect the performance of the work and the health (physical, mental or social) of the worker." In this way, adverse psychosocial conditions give rise to inappropriate behaviors and attitudes in the development of work and the health and well-being of the worker. The type of psychosocial risk factors the worker is exposed to will depend on the type of organization, personality characteristics, and capacity to react to the same stressful situation (Observatorio de Riesgos Psicosociales, 2022).

To the aforementioned risks of the environment and of situations related to the work process (Neffa, 2015), the Psychosocial Risk Observatory of the Spanish Ministry of Labor adds (2022) - already as psychosocial risk factors - the design of tasks (jobs that require low skills and are repetitive, the workload (both quantitatively and qualitatively), and the pace of work and working hours.

Psychosocial risk factors and health in nursing

The review of scientific evidence by Orozco-Vásquez et al. (2019) addressed the psychosocial risk factors affecting nurses. They found that the literature recognizes factors originating in quantitative work demands, such as the intensification of the work pace, work overload due to the assignment of a large number of patients, and the performance of functions unrelated to the exercise of the profession. Emotional demands were linked to the permanent confrontation with suffering, pain, and death. The authors concluded that

work overload is a prevalent psychosocial factor when combining paid and domestic work, two jobs, and shift work. These prevalent factors "can negatively affect their physical and mental health and the quality of care provided."

From a gender perspective on inequalities about psychosocial risks, Ceballos Vásquez et al. (2014) highlight some labor inequalities between men and women. Gender, referring to "the social concepts of the roles, behaviors, activities, and attributes that each society considers appropriate for men and women" (World Health Organization, 2014), constitutes a specific psychosocial factor due to the labor inequity raised by the authors. According to them, it has been proven that women "have more unfavorable

contractual relationships and greater exposure to risks, as well as suffering to a greater extent from specific stressors, such as discrimination, stereotypes, social isolation or family-work conflicts." They also understand that nurses are not trained to make visible, study, and intervene in these factors. They introduce the concept of mental workload, which consists of the activity and capacity necessary to process and solve problems of varying degrees of complexity. This burden is not considered among the tasks of professionals, nor can it be accurately measured. Finally, they point out that the prevalent psychosocial factors for nurses are work overload, long working hours, rotating shifts, night work, frequent changes of tasks in different services, and the psychological burden of dealing with problems that include resolving crises. Regarding the construct that nurses are one of the groups most affected by work-related stress, Aldrete Rodríguez et al. (2016) analyzed in Mexico the relationship between psychosocial work factors and stress in nursing staff out of 162 respondents where half of the women participants perceived negative psychosocial factors, mainly high work demands. 36.4% of the staff presented symptoms of stress, the most frequent being difficulty falling asleep or waking up during the night, headaches, and heartburn or stomach ache.

In addition to the factors mentioned, Joffre-Velázquez (2008) adds tasks that demand intense physical work, and Rojas-López et al. (2015) also emphasize the content of the task to be performed, an item that becomes more important as the complexity of the patients being cared for increases.

Altamirano and Amante (2020) describe the relationship between moonlighting and the deterioration of the quality of life of 40 care nurses in Salta, Argentina.

They found that more than 70% of the nurses interviewed did not get the recommended daily food intake, did not have recreational activities, nor did they get 6 hours of sleep and rest. Beyond affecting the quality of life of professionals, Chambi Pérez and Tito Serrano (2019) - Arequipa, Bolivia - found a statistically significant correlation between psychosocial risk factors and job performance in 128 nurses, showing that the higher the psychosocial risk, the lower the job performance.

Staffing: Three main types of staffing studies are used to predict the number, level, and type or category of personnel required for staffing. The nursing care required by patient classification systems can be predicted by assigning these categories according to diagnosis, intensity of care, or amount of autonomy. Time standards for nursing procedures can be determined by listing and analyzing the procedures required for each patient. The time required for each patient and the sum for all patients in a unit can be calculated. Statistical data analysis formulas are used to determine the number of nursing care hours and negotiate staffing increases. It is necessary to take into account the care needs of the patient, as well as the supply and demand of nursing care and the context in which it is provided, leaving a methodology for personnel calculation. (Tomey, 2009).

Staffing is a process carried out to establish in quantitative terms the number of people needed to fill specific posts and to determine the staffing levels: 1) the average number of patients per service, 2) the average rate of direct care proposed or defined for each service and 3) the working day established by

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the institution for each member of staff. It then suggests applying a mathematical formula to determine the number of staff needed daily.

To recap, nurses are a professional group exposed to psychosocial factors affecting their quality of life and professional performance. Work overload is a prominent issue, sometimes due to long working hours - moonlighting or the usual addition of overtime and extra shifts - and other times due to the assignment of many patients or the intensification of the work pace due to emergencies. The association of family responsibilities as an associated and unrecognized or invisible workload has been raised. The fact that the profession is predominantly female adds components specific to the gender perspective and the perception of inequalities and inequity in labor treatment. It has also made it possible to address this problem from the stage of professional training.

The introduction of the concept of mental and psychological burden has made it possible to recognize the emotional demands that link nurses to the suffering, pain, and death of others. This idea moves away from the traditional approaches of exclusively physical effort in nursing. It allows for the first attempts to quantify the demand that the capacity to process and resolve problems of different degrees of complexity implies facing critical contexts to adapt to rotating shifts, night work, and frequent task changes in different services.

CONCLUSIONS

Work-related stress in nursing is a multifactorial phenomenon that affects professionals' physical and mental health, negatively impacting their quality of life and work performance. Throughout the analysis, various psychosocial risk factors were identified that contribute to the development of this stress, including long working hours, moonlighting, rotating shifts, night work conditions, and the emotional overload derived from constant contact with suffering, pain, and death.

The conceptual framework proposed, from the physiopathology of stress to the psychological and social dimensions, allowed for an in-depth study of the consequences of this phenomenon. From a physical perspective, prolonged stress generates hormonal, immunological, and cardiovascular alterations that can trigger chronic diseases. In the psychological sphere, the relationship between chronic stress and Burnout syndrome was highlighted, characterized by emotional exhaustion, depersonalization, and decreased personal fulfillment, which affects the quality of care provided and the well-being of the professional.

The introduction of the concept of mental load, associated with the resolution of complex problems and the emotional demands of the profession, made it possible to highlight aspects that are traditionally underestimated in the analysis of stress in nursing. In addition, the gender perspective revealed inequalities that mainly affect women in this profession, including unfavorable contractual relationships and greater exposure to psychosocial risk factors.

Faced with this situation, it is essential to implement strategies to prevent and mitigate work-related stress. Healthcare institutions must prioritize occupational health through policies that include adequate

staffing, shift reorganization, and the promotion of a healthy work environment. Professionals must also receive specific training in stress management and emotional support, as well as ongoing psychological support.

In conclusion, occupational stress in nursing is an individual health issue and a structural challenge that requires a comprehensive approach. Promoting the well-being of nurses is an investment in the quality of patient care and the sustainability of health systems. A holistic approach, which considers both personal and organizational factors, is key to ensuring a healthy balance between work demands and professionals' quality of life.

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