

## Nursing Risks from the Hospital Working Environment

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It is generally accepted that both public and private hospitals are governed by laws relating to their organization and operation, aiming both at ensuring a quality of health services to citizens and at protecting their staff from any risks that may arise.

Protecting health and safety at work is an employers' obligation. The employer (hospitals/organizations) is mainly responsible for supervising the proper implementation of occupational health and safety measures, informing health workers the occupational risk of their work and constructing a program of preventive action (training) and improvement of working conditions in the company [1]. On the other hand, workers have an obligation to apply the hygiene and safety rules at the workplace, to handle properly the equipment and hazardous substances and to use the personal protective equipment correctly [2].

Workers in hospitals are exposed to occupational dangers in a similar way to workers in any other workplace. Many dangers are obvious, while others are not known. The risk factors occurring in the hospital are divided into groups in order to study them better: physical, chemical, biological, ergonomic and psychosocial [3].

Physical (damaging) factors include the risks arising from exposure to factors such as temperature, noise, vibration, lighting, elevation and movement of patients and radiation [4]. The factors that have been studied are mainly noise and radiation. Increased workplace noise can limit the person's ability to work, causes tachycardia, hypertension, headaches, anxiety, irritation, physical fatigue, contributing to increased workplace accidents [4].

Surgeries and Intensive Care Units (ICUs) are identified as the noisiest areas, with a maximum noise level of 71.9 dB in surgery and 52.5 dB in ICU [5], when the maximum recommended noise limits are 40 dB during the day and 35 during the night [6]. Radiation may cause dermatitis, anemia, leukemias, bone marrow diseases, cataracts and malignant tumors [7].

The chemicals in the workplace can enter the human body in three different ways: with the inhalation of air, by touching the human skin and swallowing chemicals. In the hospital area, one of the main (damaging) factor is the anesthetic gases that cause fatigue, irritability, headache, dizziness, nausea, eye irritation, difficulty concentrating, balance disorders, discount in professional skills, neuropathies, hallucinations, muscle weakness, allergic eczema, hepatotoxicity, embryotoxicity and carcinogenicity [8].

Musculoskeletal problems are very widespread in Europe. One in three health workers report a problem in the back and the neck area [9]. The most frequent repetitive and at the same time more aggravating tasks for nurses are to offer help to the sick to get out of bed, to move heavy (> 15 Kgs) objects and to transport patients to stretchers [9].

The result of disruption to the human biological clock is called "jet lag" syndrome or, in this particular case, the "shift lag" syndrome that occurs to people working in shifts, because it interrupts during the night the biological day-rhythm. The syndrome is characterized by a feeling of fatigue, sleepiness, digestive problems, insomnia, and a decrease in intellectual skill and performance [10]. Although nursing staff mainly work in circular alternating hours due to the required 24-hour nursing care, surveys have shown that one-third of nurses in the National Health System of Taiwan classify it as "unwanted" [11].

Strong emotional stress and stressful situations are part of the daily routine of nurses working in hospitals. The stressed nurse provides hospitalizations to patients in a cold, uncaring and impersonal way, with apathy and disappointment. It is also likely to be negative and irritable, often absent from work, perform less effectively than in the past, and wish to abandon the work [12].

Finally, violence in the workplace is a real and very important problem. Internationally, one third of nurses have received violence in their working environment [13]. The causes that nursing staff are in greater risk of violence include working hours (night time), inadequate safety measures, interventions requiring very close physical contact, long contact time with patients, demanding workload, inadequate and untrained staff [14]. The lack of staff, as shown by the results of two surveys conducted in Hong Kong and Canada increases the risk of aggressive behavior in patients [15,16]. Greater violence is observed in psychiatric departments, emergency departments and intensive care units of patients, mainly due to the particular characteristics of patients being hospitalized [13].

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