



Opinion

Occupational stress among health care professionals specialising in acute medicine

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INTRODUCTION

For years now we have been aware of the problem of occupation stress among health care workers and the important, specific risks that are linked to it for medical professionals¹. It has an impact on job satisfaction, psychological wellbeing and physical health² but it can also have a direct influence on the patients that are being treated. Recent research shows that while 17.8% of those in general employment show signs of psychiatric illness caused by work, this figure reaches 22% to 46%^{1,3,4} among health care workers.

This phenomenon is particularly common in the most developed countries (there is information about the United States, Canada, Australia, New Zealand, the United Kingdom and Spain^{1,3,5-7}) however, it also occurs in countries with transitional economies (Turkey, Pakistan), although few studies have been published^{8,9}.

Among health care workers, it is particularly apparent in intensive care physicians, anaesthesiologists¹, emergency physicians^{3,5,6,8-12} and pre-hospital emergency physicians^{13,14}. It also seems to occur, although less frequently, among physicians working in other specialisations^{1,3,15} and has even been observed among general practitioners¹⁶ and nursing staff².

STRESS AND JOB SATISFACTION AMONG SPECIALISTS IN ACUTE MEDICINE

By "acute medicine" we understand a service that takes care of patients that require specialised health care in a period of less than 6 hours from the onset of their condition (because

of the seriousness, complexity, severity and life threatening nature of the condition). Whether we are dealing with new conditions that appear quite suddenly or severe organ decompensation, it is clear that the departments that essentially cover the spectrum of conditions are intensive care medicine, anaesthesiology and of course, emergency medicine.

Intensive care physicians find themselves particularly at risk because of their working environment which is closed, noisy, hyperactive and highly technical and because of the work itself which involves critically ill patients, disease and death. This clearly is a dangerous situation for the physicians themselves as well as for the patients that are being treated¹ given the increased chance of mistakes being made because of the effects of stress.

In British intensive care units (ICU), studies were carried out based on surveys about the doctors' quality of health (GHQ-12) and the Symptom Checklist for Depression (SCL-D). The results indicated that 28% showed 3 or more signs and 22% showed 4 or more. Furthermore, 12% were also suffering from a significant degree of depression and 3.2% were having suicidal thoughts¹. The most common experiences among those affected were ongoing tiredness, excessive worrying even about trivial issues, altered sleep patterns and changes in mood. There were no significant differences between the men's and the women's results. There was also no correlation between the symptoms and age, the total amount of hours worked per week or the number of beds in the ICU¹.

Ten point six percent of emergency physicians suffer from depression and 29% from episodes of anxiety. There is also a statistically significant link between low income and length of service, and depressive symptoms⁸.

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In some studies, job satisfaction has been suggested as something that can protect against external agents that cause stress. The following factors have been identified as stress-inducing: a lack of beds when the ICU is full, the beginning of a morning shift when you already feel overloaded, having to make decisions alone, scarce resources and letting your work problems affect your social or family life¹. However, the fact that physicians are in daily contact with patients in a critical condition or close to death must also have negative impact. Also the feeling of being underused, sleep deprivation, the difficulties involved in working with some professionals from other specialisations, the lack of recognition from superiors and too much responsibility can also contribute negatively. This forces us to outline strategies to combat these stress-inducing factors and reduce their regularity and intensity. Rest breaks at times that have been scientifically recommended and even medical treatment and psychological support could all help to combat stress¹.

According to other studies, emergency physicians show high levels of stress even though they acknowledge different levels of job satisfaction, especially if they have been in the emergency department for over 10 years. Hospital management should be trained in recognising the signs and symptoms among staff early on in order to manage them effectively¹¹.

It seems that stress is determined by the specific interaction between the demands of the organisation (ultimately the stress-inducing agents) and the personal control over one's own work. People who are very demanding of themselves when faced with the most critical patients and who also show a greater sense of responsibility in the workplace will suffer more severely from occupational stress¹⁷. For this reason, a detailed and in-depth analysis of the different positions and psychological profiles of professionals should be carried out in order to prevent the recruitment of people who are underprepared.

Among emergency specialists, 60% of those surveyed with the Maslach Burnout Inventory¹⁸ between 1992 and 1995 said they were experiencing a moderate to high level of burnout¹². In Canada it was observed that the lack of resources and the overloading of hospital departments caused the most stress⁵. At the same time, medical professionals in Australia and New Zealand, broadly speaking, enjoyed even better health than the general population, although their average score for work related stress was 5.6 ($\pm$ 2.1) on a scale of 1 to 10. The score was high (from 8 to 10 points) for 19.5% of professionals, whereas average job satisfaction stood at 6.3 ($\pm$ 2.1) also on a scale of 1 to 10.

Thirteen point three percent obtained a low score (from 1 to 3 points) in job satisfaction⁶.

In a study carried out on British emergency physicians, 25% who were working in the emergency department had come from other specialisations and 64.7% had come from surgery. It was reported that 41.4% had done this because they thought there would be more opportunities and 35.7% because it offered better prospects for the immediate future³. Of these physicians 65% were satisfied with their new specialisation: 54.9% were satisfied because the work was varied, 26.5% because of the learning opportunities and the management of innovative technologies, 25% because they had more contact with the patients and 20% because the work was exciting. Despite all of this, 44% showed signs of psychological alterations in the GHQ-12 and 18% symptoms of depression in the SCL-D. There was a statistically significant link between this and the hours worked full time in the departments³.

BIOMARKERS OF AGEING AND STRESS

Oxygen free radicals play an important role in some degenerative diseases and in ageing. Some substances such as tocopherol or vitamin E and certain enzymes like superoxide dismutase (SOD) and catalase (CAT) have been identified as elements in antioxidant defence systems. Lipid peroxidation has been suggested as a biological consequence of oxidative cellular damage and as a toxicity mechanism of oxygen free radicals¹⁹.

Unsaturated fatty acids are particularly susceptible to attack from these radicals. These oxidative modifications cause changes in the physicochemical properties of the membranes which alter their permeability and increase the risk of rupture. Malondialdehyde (MDA) is one of the end products of lipid peroxidation and high levels of this substance have been found in cardiovascular and neurological diseases, and in elderly people and this has been linked to an increase in oxidative systemic stress¹⁹.

In Spain two groundbreaking studies have been carried out on medical staff in pre-hospital emergency care (SAMUR, Madrid's emergency services unit; doctors, nurses and technicians) with different shifts, ages, marital status, alcohol, tobacco, coffee and tea intake and exercise habits. The first study showed that some of these factors were associated with high levels of lipid peroxidation (MDA) and signs of burnout according to the Maslach Inventory¹⁸. Those who worked evening or night shifts, were also older, married or had a partner and smoked and showed higher le-



vels of stress. These levels were significantly lower among nurses and technicians. In contrast, there was no link with alcohol, coffee or tea intake or exercise habits⁷.

In the second study, the authors found statistically significant differences in the SOD activity in SAMUR personnel who had changing shift patterns and in those who worked at night. This was also significantly linked to the burnout scales (Spanish version of the Maslach Inventory)¹⁸, especially among the 20-29 and 40-49 age group. The burnout levels were similar for both sexes and higher among staff with a longer length of service and higher professional status¹⁴.

Other studies that have been carried out outside of Spain have found that there is a statistically significant link between serum cortisol levels in emergency physicians and work overload and a lack of resources. These physicians are more susceptible to stress than other specialists and have higher levels of cortisol during late afternoon shifts with positive results in some stress evaluation surveys and higher values for diastolic blood pressure⁹.

CONCLUSION

It seems clear that occupational stress is common in Spain among medical personnel that specialise in acute medicine, mainly affecting emergency physicians, especially those who work in pre-hospital care. It can have very serious consequences, from the chronification of psychological alterations among professionals to adverse affects on patients as a result of potential medical errors that are caused by stress. Therefore, it is necessary to acknowledge and understand that this problem exists, as well as establish strategies to try and minimise it which might include: researching a better working model for staff, creating teams for shared decision making, trying to establish fixed shifts which are shorter for those who work evenings and nights, increasing incentivisation in order to encourage teaching and research, introducing appropriate career development strategies, promoting a rewards scheme that matches the difficulty and dangerousness of certain interventions and providing as much assistance as possible so that professionals can maintain a balance between their work life and their social/family life.

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