Research paper

Stress prevalence and stressors among anaesthesiology and intensive care unit workers: A multicentre survey study

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ABSTRACT

Background: High stress levels have been commonly reported among ICU workers. Currently, anaesthesiology is safer for the patient but more stressful for the staff working in this branch of medicine. ICU and anaesthesiology personnel are prone to stress because of the specific character of their work.

Objectives: Our objectives were to assess stress prevalence among anaesthesiology and ICU workers to compare this stress prevalence in relation to professional groups, sex, job seniority, and type of hospital and describe the importance of major stressors at work.

Methods: The ICU and anaesthesiology workers of 15 randomly selected Polish hospitals were surveyed. To assess stress prevalence, the Perceived Stress Scale (PSS-10) was used. The analysis included 544 surveys.

Results: The examined population was divided into two groups. Group N consisted of 406 nurses (74.60%) and group P of 138 physicians (25.40%). The mean result in the PSS-10 scale for the N group was 19.00 and for the P group 17.00. Both group results were related to a 6 stem score, which implied a medium level of stress. In the N group, the PSS-10 results were significantly higher than in the P group. Women showed higher levels of stress than men.

Conclusions: Stress levels among ICU and anaesthesiology personnel were of a medium range. Nurses showed significantly higher levels of stress than physicians. Female personnel showed higher levels of stress than male personnel. Age, job seniority and type of hospital did not have an influence on stress levels. The most stressful circumstances for anaesthesiology and ICU personnel included night shifts and duty overload.

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1. Introduction

1.1. Background

High levels of stress among ICU workers have been commonly reported.1 It was observed back in the 1970s that the phone ringing alone was able to trigger tachycardia on on-duty anaesthesiologists.2 The effect of the phone ringing is stronger at night. Attending urgent consultations increases the heart rate up to 121 beats per minute, whereas treating critically ill patients often causes tachycardia similar to that of an exhausting run.3 Critical care nurses show signs of critical incidental stress after having performed cardiopulmonary resuscitation.3

Currently, anaesthesiology is safer for the patient but more stressful for the professionals working in this branch of medicine. ICU and anaesthesiology personnel are prone to stress because of the specific nature of their work. The long-lasting, continuous and intensive monitoring of patients, as well as critical situations, are everyday elements of the job. Staff often work long hours in this heightened state of physiological arousal. The work is of
unpredictable duration, and breaks for eating, drinking or other physiological needs are irregular. Moreover, anaesthesiologists often work isolated from their colleagues and, in the early stages of their career, have a large spectrum of responsibilities.

The intensive care unit is a place of work with a high incidence of conflicts, which forms an additional stress factor. Among anaesthesiologists in Poland, as well as in other countries, an increased risk of burnout syndrome has been observed, which is related to the high stress levels in this branch of medicine.

ICU and anaesthesia workers themselves find their work stressful. Nurses declare that the ICU and operating theatre are the most stressful places to work. Indeed, the operating theatre and the ICU present challenges for the staff who work there, because the complex monitoring and therapy techniques quickly become part of everyday practice.

During the past few years, working in ICU and operating theatres has become increasingly complex and cognitively and physically demanding. ICU and anaesthesiology personnel have newer and more modern tools at their disposal almost every year. The work environment changes and this can influence stress prevalence. It would be interesting to know whether the modern techniques have an influence on stress levels and how they do. Although there is currently existing literature concerning stress prevalence among ICU and anaesthesiology personnel with relevant data, there is a need to repeat such studies and investigate the problem again.

2. Methods

The aim of this study was to assess the stress prevalence and stressors of ICU and anaesthesiology workers. We compared stress prevalence in relation to professional groups, sex, job seniority and type of hospital. An additional aim of the study was to describe the importance of major stressors at work.

In 2013 and 2014, the ICU and anaesthesiology personnel of 15 randomly selected Polish hospitals were surveyed. The hospitals in which interviewees worked were divided into clinical, regional, urban, small district and private. The research team, personally or via e-mail or telephone, asked the heads of chosen departments for their consent in participating in this research. To assess the prevalence of stress, the Perceived Stress Scale (PSS-10) was used. The authors surveyed the relevant sociological and demographic data, combined with details of the hospitals. The Ethics Committee of the Medical University of Lublin approved the study (KE-0254/83/2013), and all participants gave their written consent. Nineteen hundred surveys were distributed via regular mail. A research assistant distributed surveys among the personnel of the chosen hospitals. The surveys were completed anonymously. Five hundred and ninety surveys were returned to the research team by the heads of the relevant departments. The response rate was 31.05%. Consents were collected separately from the surveys, to preserve anonymity. Nevertheless, it was observed that the need for a signed consent form may have influenced on the response rate, which was lower than expected. Only 544 correctly completed surveys were included in the analysis.

PSS-10 is a simple research tool constructed to assess stress levels over the previous month. It consists of 10 statements related to personal impressions of feeling troubled and ways of having behaved in a difficult situation. Six questions in the scale are negatively constructed (1, 2, 3, 6, 9 and 10) and four are positively constructed (4, 5, 7 and 8). For positive questions, it is necessary to change the points before summing them all up (0–4, 1 = 3, 2 stays unchanged, 3 = 1, 4 = 0). The person examined marks their level of identification with the statements on a 5-degree scale. The overall result of the scale is the sum of all points (up to 40). Then, it is converted to a 10-degree standard ten score (called sten score). Results from 1 to 3 sten scores indicate low levels of stress, and between 7 and 10 sten scores high levels of stress.

The reliability of the Polish version of the scale was good: the Cronbach’s alpha was between 0.72 and 0.92. Cronbach’s alpha for PSS-10 in our study was 0.846.

The authors included questions in the survey concerning stressors at the workplace: night shifts, unpredictable character of work, duty overload, contact with dying patients, complicated therapeutic procedures. These questions were plotted on a 5-degree visual analogue scale (VAS). The interviewee had the option of marking exactly down the middle of the scale (no. 3).

The data were analysed using STATISTICA 8 [STATSOFT]. To compare quantitative data, the range of value (minimal, maximal), mean, standard deviation, median and frequency tables were used. All data were analysed for normality of distribution, using the
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