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# RISK FACTORS FOR POSTTRAUMATIC STRESS DISORDER IN POLISH PARAMEDICS: A PILOT STUDY

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☐ Abstract—Background: Working as a paramedic carries the risk of witnessing events and personal experiences associated with emergency life-threatening circumstances that may result in symptoms associated with posttraumatic stress. This problem is well known but still underestimated. Objectives: The specific study objectives were to 1) assess the influence of sociodemographic and occupational factors on posttraumatic stress disorder (PTSD) among paramedics, and 2) suggest preventive strategies in this population. Methods: This prospective, descriptive study examined a sample of 100 paramedics who agreed to complete the Author Questionnaire comprising demographic questions and the Impact of Event Scale - Revised. Results: The total prevalence of PTSD in the examined group was 40.0% (women = 64.3%, men = 36.1%). It was more frequently reported in paramedics working under an employer's contract than among those who were selfemployed. It occurred less frequently in persons with more education. Other sociodemographic factors studied showed no significant impact. A statistically significant effect of exposure to certain types of traumatic events on the incidence of PTSD was found. There was no significant correlation between the prevalence of PTSD and the occurrence of problem situations in respondents' workplaces. Conclusions: Polish paramedics who agreed to take part in the survey were shown to have a high rate of PTSD. Multi-center screening and early supportive management is recommended. © 2016 Elsevier Inc.

☐ Keywords—posttraumatic stress disorder (PTSD); paramedic; medical emergency team

#### INTRODUCTION

The paramedic profession is one of the most stressful occupations worldwide (1,2). In some countries, such as the United States and the United Kingdom, it has quite a long tradition and a strong position, but in other countries, such as in central and southeastern Europe, it is a relatively young profession. In Poland, development of emergency medical services (EMS) took place at the turn of the 21st century and has since been the subject of only a few scientific studies. The profession reached its current state as a result of the Act on State Emergency Medical Services of July 25, 2001 (3). In Poland, the EMS system is based on an Anglo-American model in which rescue medicine is an independent discipline, and people are trained to work in the EMS system. In most countries that follow the Anglo-American model (e.g., the United States of America, Great Britain, Greece), paramedics work at the prehospital level (4).

Data reported in the literature show that working in a situation of regular and frequent exposure to high levels of traumatic events can lead to posttraumatic stress

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disorder (PTSD) (5). PTSD is classified in the International Classification of Diseases, 10th Revision under code F43.1 and has been described widely in war survivors, both soldiers and civilians (5-7). There is little information about studies on the development of PTSD conducted in exposed Polish populations. Researchers have attempted to determine the relationship between PTSD and functioning as a professional, but there are few articles about paramedics, who, as a group, are particularly prone to having to make decisions during rescue operations rather than discontinuing their work (8–11). Paramedics are exposed to two basic types of stressors. The first is acute traumatic situations, for example, threats to life or physical integrity, witnessed murder, disasters, receiving information about a serious threat, and helping children. Additionally, chronic stressors are continuously present, for example, excessive workload, poor organization, conflicts at work, and the requirement to work night shifts (1,2). Various tools have been used to measure PTSD in paramedics, and we can compare results using various scales from different research (12).

Working as a paramedic carries the risk of witnessing events and personal experiences associated with helping people in emergency life-threatening circumstances; these can result in the development of symptoms associated with posttraumatic stress. The aim of this study was to determine the prevalence of PTSD and sociodemographic and occupational risk factors in Polish paramedics.

#### MATERIALS AND METHODS

Study Setting Description

After the implementation of the Act on State Emergency Medical Services of July 25, 2001, poorly trained rescuers were replaced with a new professional group, namely paramedics, who were hired for medical emergency teams (METs) and hospital emergency departments (EDs), in addition to emergency physicians and nurses. Since then, paramedics have received medical training at the university level. The Act also specifies the minimum personnel composition of METs. Ambulances in Poland must now be staffed by at least two personnel. There are two types of MET: basic and specialist. The specialist teams include at least three persons authorized to carry out medical rescue operations, always including a physician. The basic team consists of at least two persons authorized to carry out medical rescue operations, including a nurse or paramedic (4). All Polish paramedics have the same authority (13,14).

#### Subjects

In total, 135 paramedics were asked to take part in the survey, but 34 refused to sign a consent form, and one filled out the questionnaire improperly. All were informed about the anonymity of the survey. Finally, the participants included 100 paramedics who were employed in prehospital METs, transportation, or in hospital EDs. Paramedics are hired in different ways; they may work under an employer's contract, or they may be selfemployed. If they are self-employed, they may receive more money from the employer, but they have neither social security benefits nor legal protection unless they pay for these themselves. They typically pay low insurance to cover health problems, and in the event of an accident or chronic disease, they lose their income. However, some self-employed paramedics work many hours, earning more than their colleagues hired under regular contracts. Study exclusion criteria were failure to consent to participate in the project and inability to write and read in Polish.

#### Measures

As a measure of PTSD, we used the Polish version of the Impact of Event Scale-Revised (IES-R) developed by Weiss and Marmar. The IES-R was adapted by Juczynski and Oginska-Bulik, who demonstrated the high reliability and factorial validity of the Polish IES-R (15). The revised version (IES-R) includes questions about reactions to discomfort experienced during the last 7 days due to a traumatic event. It contains 22 statements and takes into account the three dimensions of PTSD: intrusive, arousal, and avoidance symptoms. "Intrusive" symptoms include recurring images, dreams, thoughts, or perceptual experience associated with the trauma. "Arousal" is characterized by increased vigilance, anxiety, impatience, and difficulty in concentrating. Efforts to avoid or escape from thoughts, emotions, or conversations associated with the trauma are called "avoidance." The Author Questionnaire was used to gather selfreported sociodemographic information (Table 1).

### Statistical Analyses

Statistical analyses were conducted using the SPSS software (ver. 10; StatSoft, Kraków, Poland). The relationships among variables were evaluated using the  $\chi^2$  test and analysis of variance methods. The Mann-Whitney U-test was used to examine differences between two independent groups. In all analyses, p-values < 0.05 were taken to indicate statistical significance.

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