Injury, Int. J. Care Injured 48 (2017) 293–296

Contents lists available at ScienceDirect

Injury

journal homepage: www.elsevier.com/locate/injury

PTSD in those who care for the injured

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ARTICLE INFO

Article history:
Accepted 1 November 2016

Keywords:
PTSD
PTSD screening
Survey

ABSTRACT

Background: Post Traumatic Stress Disorder (PTSD) has become a focus for the care of trauma victims, but the incidence of PTSD in those who care for injured patients has not been well studied. Our hypothesis was that a significant proportion of health care providers involved with trauma care are at risk of developing PTSD.
Methods: A system-wide survey was applied using a modified version of the Primary Care PTSD Screen [PC-PTSD], a validated PTSD screening tool currently being used by the VA to screen veterans for PTSD. Pre-hospital and in-hospital care providers including paramedics, nurses, trauma surgeons, emergency medicine physicians, and residents were invited to participate in the survey. The survey questionnaire was anonymously and voluntarily performed online using the *Qualtrix* system. Providers screened *positive* if they affirmatively answered any three or more of the four screening questions and *negative* if they answered less than three questions with a positive answer. Respondents were grouped by age, gender, region, and profession.
Results: 546 providers answered all of the survey questions. The screening was positive in 180 (33%) and negative in 366 (67%) of the responders. There were no differences observed in screen positivity for gender, region, or age. Pre-hospital providers were significantly more likely to screen positive for PTSD compared to the in-hospital providers (42% vs. 21%, $P < 0.001$). Only 55% of respondents had ever received any information or education about PTSD and only 13% of respondents ever sought treatment for PTSD.
Conclusion: The results of this survey are alarming, with high proportions of healthcare workers at risk for PTSD across all professional groups. PTSD is a vastly underreported entity in those who care for the injured and could potentially represent a major problem for both pre-hospital and in-hospital providers. A larger, national study is warranted to verify these regional results.

Background

Post-Traumatic Stress Disorder (PTSD) first appeared as an established diagnosis in the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) in 1980 [1]. The patient population that prompted the diagnosis' official nomenclature was the returning survivors from the Vietnam war. The first edition of the DSM (DSM-1, 1952) included a diagnosis termed "gross stress reaction" to describe the psychological status noticed in those returning from fighting in World War II [2]. The relative period of peacetime between the first and the second edition however resulted in a decline in the interest about this entity and it was left off the DSM-II in 1968. More recently, war has re-spawned the interest in PTSD in the 21st century, but severe psychological sequelae is not limited to war-related traumatic experiences. PTSD is well described outside the military realm, including civilian police officers, victims of civilian trauma, and pre-hospital providers [3,4,5]. To date, there has been no comprehensive study

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http://dx.doi.org/10.1016/j.injury.2016.11.001
0020-1383/

examining the impact of stressful events experienced by health-care providers across a spectrum of specialties and the risk of PTSD.

Traditionally, PTSD had been diagnosed with tools such as the Clinician-Administered PTSD Scale (CAPS) or the PTSD symptom checklist (PCL) [6,7,8]. Although these are very useful diagnostic tools for PTSD, a faster four-question screening tool, the Primary Care PTSD Screen (PC-PTSD) was developed to be used as an initial screening device [8]. This device has been validated against both the CAPS as well as the PCL as a reliable screening tool in primary care clinics and it is now the primary screening tool for PTSD in the United States Veterans Administration (VA) Healthcare system [8,9].

One large meta-analysis of studies examining the risk of PTSD in rescue workers demonstrated a prevalence of 10%, which is three to six times that of the general population and nearly the risk of PTSD in Vietnam and Iraq war veterans [10]. A study by Bellal et al. surveyed trauma surgeons across the country and found a incidence of PTSD symptomatology in 40% with 15% meeting diagnostic criteria based on their screening tool [11]. However, there has not been a large study using a standardized, validated screening tool to assess the PTSD risk of pre- and in-hospital providers who care for injured patients [12]. We wanted to look at our population of pre-hospital and in-hospital care-givers in our state. We developed the I–35 research consortium that included four of the state's Trauma Regional Advisory Council (RAC) systems that extend along the I–35 corridor in Texas from the Mexican to Oklahoma borders. These RACs include providers from both pre-hospital systems (ambulance systems, air ambulance systems, fire/police) as well major trauma centers in the Greater San Antonio, Austin, Temple, and Dallas areas. The RAC's also include many providers in the rural counties surrounding the major metropolitan areas. Our aim of the study was to potentially identify a population of providers at risk for PTSD, and to gain some estimate of the incidence in that population. We hypothesized that the incidence of providers at risk for PTSD was higher than 10%.

Methods

All four RAC systems participated in this web-based survey study. The study was approved by the institutional review board of the lead facility, University Medical Center Brackenridge, Austin, TX. Respondents were contacted electronically or in person through their RAC directly, during an announcement at one or more of the RAC general assemblies or through individual hospital or pre-hospital agencies represented within each RAC. The survey was located on the Austin-based RAC website and open for a total of two months. We used a web-based, anonymous, survey system (*Qualtrics*) to deliver the modified PC-PTSD screen. The PC-PTSD screen was modified by adjusting the time limit of one-month to reflect a range of time periods with which the subject may have experienced the traumatic event. In addition to the four screening questions, we also collected demographic data to include age, gender, region and area (specialty) of practice. Respondents were considered to have screened "positive" to be at risk for PTSD if they answered yes to at least three of the four questions. Statistical Analysis was performed using SAS (version 9.3) statistical software, and differences in proportions were assessed for significance using Pearson's Chi-Squared Test.

The four main screening questions were as follows: In your experience as a civilian provider have you ever had an emergency related experience that was so frightening, horrible, or upsetting that you:

- Have had nightmares about it and thought about it when you did not want to?
- Tried hard not to think about it or went out of your way to avoid situations that reminded you of it?

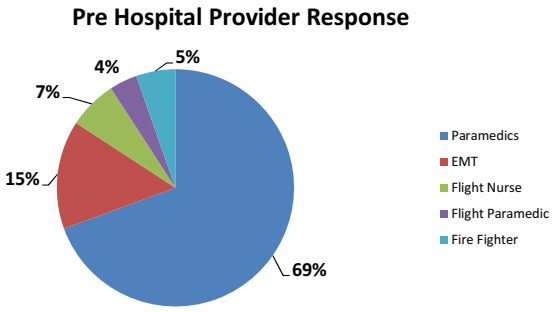

Fig. 1. Breakdown of survey responses from "Pre-Hospital Providers.".

- Were constantly on guard, watchful or easily startled?
- Felt numb or detached from others, activities, or your surroundings

Results

A total of 546 providers answered all of the questions on the survey. Of the respondents 190 (34.7%) were in-hospital providers, 318 (58.2%) were pre-hospital providers and 38 (6.7%) respondents did not disclose their particular practice specialty. Breakdown of individual specialty by provider is shown in Figs. 1 and 2. Of all respondents 414 (77%) answered yes to at least one question, 299 (55%) answered yes to two questions, 180 (33%) answered yes to three questions, and 97 (18%) answered yes to all four questions. Of pre-hospital providers surveyed 133 (42%) screened positively for being at-risk for PTSD (at least three questions) versus 40 (21%) of in-hospital providers ($P < 0.0001$). There were no differences in observed screened positivity for gender, region, or age. Screening positivity figures by particular practice specialty are listed in Figs. 3 and 4. Of all the major contributors surveyed, only Trauma Surgeons did not have any respondents screen positive. Only 55% of respondents had ever received any information or education about PTSD. Seventy one (13%) of respondents had previously sought treatment for PTSD.

Discussion

Initially, when the VA started using the PC-PTSD as a screening tool, a screen "should be considered positive if a patient answers 'yes' to any of the four items". It currently uses the now standard three question positivity as a cutoff to screen positive [8,13]. In our sample, using the initial VA screening criteria, nearly 80% of our respondents would screen positive. But applying the current, and most recently validated, VA standard screen, one third of our surveyed population screened as positive for at risk for PTSD. Even if respondents who had previously been treated for PTSD are

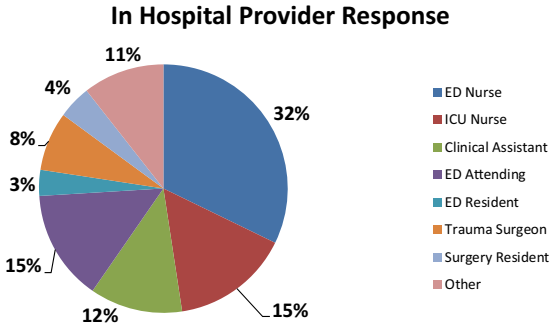

Fig. 2. Breakdown of survey responses from "In-Hospital Providers.".