

## **INTRODUCTION**

Post-Traumatic Stress Disorder (PTSD) is worldwide recognized as the most frequent mental disorder occurring in the aftermath of traumatic exposure and increasing research has been focused on its detection in general population samples exposed to both natural and human made disasters, particularly in Italy (Kessler et al., 1995; Kessler, 2000; Faravelli et al., 2004; Dell'Osso et al., 2011; 2013; Carmassi et al., 2013; 2014 a,b).

The number of clinical and epidemiological studies developed since the first inclusion of PTSD within psychiatric nosographic system in 1980 (Diagnostic and Statistical Manual of Mental Disorders 3rd edition, DSM-III, American Psychiatric Association, 1980), led to the important changes acknowledged for this disorder in the DSM-5 (American Psychiatric Association, 2013). Primarily, for the first time it was included in a new chapter specifically devoted to



computed.

The rates of endorsement of DSM-5 symptoms and their

Overall, the addition of three new criteria (D3, D4 and E2) for PTSD in DSM-5, results to be essential in 4 (10.5%) of the diagnoses (Table 6).

## **DISCUSSION**

The present study reports, for the first time, data on PTSD prevalence rates among survivors of the massive accident of the Viareggio train station of 2009, explored 7 to 8 months after trauma exposure. Further, our results add information on PTSD prevalence and symptoms structure according to new DSM-5 criteria with respect to the former DSM-IV-TR ones. The introduction of the new DSM-5 criteria for PTSD raised the question of whether these changes may account for a different detection of the disorder among patients survived to trauma (Dell'Osso & Dalle Luche, 2015). In this regard, survivors to mass trauma represent an important population.

The two diagnostic algorithms performed similarly in terms of PTSD prevalence rates that were reported to be high as more than

half of the survivors enrolled, 50.4% according to DSM-5 criteria and 54.7% according to DSM-IV-TR ones, reported symptomatological PTSD. These rates are comparable, despite higher, to those reported by some of us, by means of a comparable methodology, in a sample of Italian residents from the town of L'Aquila survived to the 2009 earthquake (Dell'Osso et al., 2011; Carmassi et al., 2013; 2014a,b). Despite scant data are available on PTSD prevalence rates in US or

residents, passers-by, and resident or from Eschede rescue workers reported strong disaster-related intrusion and avoidance reactions.

Further, our data confirm previous studies comparing DSM-IV-TR versus DSM-5 PTSD prevalence estimates that suggest only modest and inconsistent effects (Calhoun et al., 2013; Elhai et al., 2012; Carmassi et al., 2013; 2014a; Miller et al., 2014). Consistent with literature data, our results also show significantly higher DSM-5, as well as DSM-IV-TR, PTSD females with respect to males, with an approximate 2:1 ratio.

Our results seem to suggest a slightly more restrictive approach of the DSM-5 with respect to the DSM-IV-TR criteria for PTSD, apparently not in line with data from a previous study on earthquake survivors where, adopting the same methodology, some of us reported an increase in DSM-5 with respect to DSM-IV-TR diagnoses (Carmassi et al., 2013). At a deeper evaluation, we noticed a different pattern of endorsement of some of the new DSM-5 criteria that resulted to be determinant for the fulfillment of the diagnostic threshold. In this regard, the DSM-5 criterion E2, investigating reckless or self-destructive behaviors, seem to play a major role. Criterion E2 was in fact endorsed by 27.6% of PTSD survivors in the present sample, but by 36.8% of the young adults of the previous one. Further, the endorsement of this criterion was never found to be essential for the diagnosis in this study sample while it resulted to be crucial in 14.2% of the previous one. In this regard, the present results are consistent with some of the initial DSM-5 studies that included analyses of the patterns of item endorsement and the factor structure of the new instrument (Calhoun et al., 2013; Miller et al., 2014). We may argue a possible role of age in these results. There is evidence in fact, of high rates of reckless/self-destructive behaviors in younger populations corroborating the possibility of an age drive.

A high overall consistency emerged in this sample, close to 90%, as well as a Cohen's K above 0.800 in the total sample and within genders. Exploring the correlations of each DSM-5 symptom criterion with its corresponding cluster, we confirmed previous findings (Carmassi et al., 2013) showing a moderate to weak correlations for symptoms D3 (*distorted blame of self or others*) and E2 (*reckless or self-destructive behavior*) with their respective cluster (criterion D and E). The item E2 ('Reckless or Self-Destructive Behavior'), showed a high DSM-5 item-cluster correlation of 0.370. Even if we did not investigate in a systematic manner the potential implications of such correlations from a clinical standpoint, we believe that the importance of PTSD symptoms as risk factors for suicidal ideation and mortality is crucial, as noted in a recent review on suicide risk among veterans (Pompili et al., 2013). However, this could be an interesting topic to consider in a prospective follow-up.

Among the 41 patients fulfilling a DSM-IV-TR PTSD diagnosis, 4 did not meet all the required criteria according to DSM-5. In

particular, these subjects did not meet DSM-5 criterion C (avoidance), assessing active avoidance. Conversely, only 1 of the 38 subjects fulfilling all DSM-5 criteria did not meet all DSM-IV-TR criteria, in particular criterion C explor7 0 0 5EMC /Span <</MCA(particular )16Cymp

report of PTSD symptoms may in fact be considered less accurate. Nevertheless, the use of TALS-SR allowed us to accurately compare the possible DSM-IV-TR and DSM-5 criteria reported by the survivors. Fourth, as already mentioned in our first study (Dell'Osso et al., 2011), the lack of information on the presence of other psychiatric comorbidities that may as well follow trauma exposure (Hardoy et al., 2005). Fifth, the lack of assessment on the functional impairment reported.

## **CONCLUSIONS**

Despite the above-mentioned limitations, this study reports for the first time data on PTSD prevalence in subjects exposed to the devastating railway accident of Viareggio (Italy) of June 2009. Moreover, the present study offers an important glimpse at the empirical performance of the DSM-5 PTSD criteria as compared to the DSM-IV-TR ones, suggesting the need for further studies in epidemiological samples to evaluate the change in prevalence rates of PTSD that may result from the adoption of DSM-5 criteria.

## **REFERENCES**

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