To record the prevalence of post-traumatic stress disorder in earthquake survivors, all influencing factors should be included in the evaluation

Josef Finsterer[1] and Joao Gama Marques[2,3]

[1]Neurology Department, Neurology and Neurophysiology Center, Vienna, Austria (Correspondence to Josef Finsterer: fipaps@yahoo.de). [2]Consulta de Esquizofrenia Resistente, Hospital Júlio de Matos, Unidade Local de Saúde de São José, Centro Clínico Académico de Lisboa, Lisboa, Portugal. [3]Clínica Universitária de Psiquiatria e Psicologia Médica, Faculdade de Medicina, Universidade de Lisboa, Centro Académico de Medicina de Lisboa, Lisboa, Portugal.

Keywords: earthquake, post-traumatic stress disorder, trauma, psychological resilience, survivors

Citation: Finsterer J, Marques JG. To record the prevalence of post-traumatic stress disorder in earthquake survivors, all influencing factors should be included in the evaluation. East Mediterr Health J. 2025;31(5):350–351. https://doi.org/10.26719/2025.31.5.350.

Dear Editor,

We read with interest the article by Aslan et al on a cross-sectional study of the prevalence of probable post-traumatic stress disorder (PTSD) among 1100 survivors of the June 2023 earthquake in Türkiye, assessed using the PTSD checklist and the Connor-Davidson Resilience Scale to measure psychological resilience (1). The prevalence of PTSD was 55% and the predictors of PTSD were female gender, smoking, sleep disturbance, chronic illness, being buried under the rubble, loss of a first-degree relative, housing after the earthquake in a tent, container, or someone else's house, severe fear of the earthquake, and low socioeconomic status. Survivors with high psychological resilience had a lower likely prevalence of PTSD. It was concluded that the psychological resilience of earthquake survivors needs to be improved to prevent or minimize PTSD. The study is fantastic, but some ambiguities need to be clarified.

The first point is that the prevalence of PTSD may decrease with increasing distance from the epicentre. Since the data were collected in 11 Turkish provinces, it would be interesting to know whether the prevalence of PTSD was lower among patients who experienced the earthquake at a longer distance from the epicentre than among those who were close to the epicentre.

The second point is that the severity and prevalence of PTSD is highly dependent on the severity of the trauma that triggered the PTSD. We should know whether the triggering trauma was quantified to a certain degree and whether a correlation between the 2 could be established.

The third point is that the severity and expression of PTSD may also depend strongly on the time between the trauma and data collection. We should know whether there was a correlation between the prevalence of PTSD and the time between the trigger of the PTSD and the survey.

The fourth point is that PTSD can be a complication of polytrauma in about one-fifth of patients (2). Therefore, we should know how many of the patients had polytrauma due to injuries from the earthquake and required hospitalization or surgery.

The fifth point is that PTSD can be complicated by stress cardiomyopathy, also known as Takotsubo syndrome (TTS) (3). How many of the patients had TTS as a complication of PTSD? TTS can be complicated by ventricular arrhythmias, cardioembolism, heart failure or even sudden death. How many of the patients with PTSD suffered from complications of TTS? How many had crush syndrome complicated by hyperkalaemia and concomitant ventricular arrhythmias with sudden cardiac death (4).

The sixth point is that no data were reported on the outcome of PTSD (1). Was the study repeated after a follow-up within weeks or months? It would be interesting to know the development and outcome of PTSD in order to inform the choice of interventions and therapies for this condition.

In summary, it can be said that this interesting study has limitations that relativize the results and their interpretation. Removing these limitations could strengthen the conclusions and reinforce the message of the study. All unanswered questions need to be clarified before readers can uncritically accept the conclusions of the study. Before final conclusions are drawn, all factors influencing the prevalence of PTSD in earthquake survivors should be included in the assessment.

Funding: None.

Conflict of interest: None declared.

References

1. Aslan B, Önal Ö. Prevalence of probable post-traumatic stress disorder among survivors of the 2023 earthquakes in Türkiye. East Mediterr Health J. 2024;30(9):622-631. doi: 10.26719/2024.30.9.622.

2. Kreis BE, Castano NJ, Tuinebreijer WE, Hoogenboom LC, Meylaerts SA, Rhemrev SJ. Characteristics of polytrauma patients with posttraumatic stress disorder in a level 1 trauma center. Eur J Trauma Emerg Surg. 2011;37(3):269-75. doi: 10.1007/s00068-011-0109-2.

3. Primus C, Auer J. Atypical "mid-ventricular" Tako-tsubo cardiomyopathy in a patient suffering from posttraumatic stress disorder: A case report. Wien Klin Wochenschr. 2011;123(17-18):562-5. doi: 10.1007/s00508-011-0017-9.

4. Oda J, Tanaka H, Yoshioko T, Iwai A, Yamamura H, Ishikawa K et al: Analysis of 372 patients with crush syndrome caused by the Hanshin-Awaji Earthquake. J Trauma 1997;42:470–476.

Response by the authors of the article

Dear Editor,

We would like to respond as follows to the issues raised by the authors of this letter to the editor:

First, on the impact of distance from the epicentre on PTSD prevalence. Our study focused on individuals who were directly affected by the earthquake, as they were the ones exposed to trauma during and after the event. Since our study aimed to examine the impact of trauma experienced by survivors, considering a variable like distance among individuals who relocated to different provinces was not feasible. We conducted the survey among survivors who were relocated to shelters after leaving the earthquake-affected areas. Therefore, the concept of distance is not applicable in this context, as all participants were significantly affected by the earthquake, regardless of their location.

Second, on the direct relationship between the severity of PTSD and the severity of the triggering trauma. You are correct in raising this point, but in our study, a specific measure of the severity of the triggering trauma was not included. The aim of the study was to determine the prevalence of PTSD after the earthquake and to understand the factors contributing to its development. The severity of trauma is typically explored in clinical studies or evaluations conducted with individuals seeking hospital care. Since ours was a field study, it did not delve into such details. Investigating the severity of PTSD and its treatment would require further research.

Third, on how PTSD may change over time. Indeed, PTSD symptoms may evolve as time passes after the trauma. However, this was a field study examining the immediate prevalence. Data collection was initiated immediately after the earthquake. Our study design did not focus on the changes in PTSD over time, and as such, the analysis of this factor was not included. Observing the effects of time would require a different methodology and a long-term follow-up study. Therefore, we believe this falls outside the scope of our study.

Fourth, the relationship between PTSD and polytrauma. This study was a field study that examined only the prevalence of PTSD, not the diversity of trauma. Injuries and hospital treatments resulting from the earthquake fall outside the scope of the study. Our goal was to assess the prevalence of PTSD among individuals affected by the earthquake. Such complications could be investigated through clinical studies, but it is not possible to measure them in a field study.

Fifth, stress cardiomyopathy (Takotsubo syndrome) and similar cardiac complications are indeed important; however, ours was a field study and it was not possible to assess the physical health status of participants. Our study focused solely on the psychological conditions of the participants. Specific clinical findings such as cardiac complications can only be evaluated in more controlled environments, such as hospitals or clinic settings. The collection of such data was not the aim of our study. Investigating these types of complications is more appropriate for clinic- or hospital-based studies.

Sixth, requesting an examination of the long-term effects of PTSD. Yes, collecting follow-up data is undoubtedly an important point; however, this study was a cross-sectional prevalence study conducted within a specific timeframe. As our study did not include follow-up, we are unable to comment on the progression and outcomes of PTSD over time. The long-term effects could be the focus of another study. A follow-up study conducted at this point could provide more information.

In conclusion, most of the issues raised focus on elements that fall outside the scope of our study. The purpose of our study was to examine the prevalence of PTSD among individuals affected by trauma following the earthquake. Clinical complications or long-term follow-ups were not the subject of the study. Our study design was cross-sectional, focusing solely on the psychological conditions of the participants. Given the feedback, we believe that these points should be addressed in more comprehensive studies.

In this context, one of the strengths of our study is that it was a field study conducted with a large sample of participants who were directly affected by the earthquake shortly after the event, providing robust data to understand the prevalence of PTSD. However, like any scientific study, it has its limitations, which are inherent in its design.

Banu Aslan and Özgür Önal.