Reviewer's report

Title: Psychological distress among Bam earthquake survivors in Iran: a population-based study

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Reviewer: Maria Livanou

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General
The study addresses an important topic: the psychological consequences of the earthquake and factors associated with post-earthquake psychological status. The question posed by the authors is not a new one, but contributes to the field as relatively little is known about the psychological impact of earthquakes on Iranian survivors. Nevertheless, the study presents several limitations (outlined below):

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1) Need to offer justification for the selection of GHQ for the assessments. Since the aim was to assess trauma survivors, why not use a measure of PTSD alone or together with the GHQ?

2) More detail is needed about the 'stratified multi-stage sampling' that was used. What was the sampling frame? How was it ensured that every household or camp within the city had the same probability of being sampled? The strata (groups / categories) and the stages need to be defined.

3) It is mentioned that assessments took place 5 months post-disaster. How many days did data collection last? This information is needed in order to understand why the variable 'time-since trauma', which is an important variable, was not taken into account.

4) In the discussion, the references that are quoted in order to support or discuss study findings are selected in a way that does not exhibit good knowledge of the literature. For example,

(i) to discuss the regression findings in pages 5-6 it is stated: 'female gender, lower education, lower socio-economic status were found to be related to higher post-traumatic stress disorder and depression among earthquake survivors' and one epidemiological study from Turkey is quoted. Indeed that study reported an association between PTSD and fear during the earthquake, loss of friends, female gender, and low education. However, the same study also reported that death of relatives (first and second degree) was not related to PTSD but related to depression. In addition, another four studies from Turkey (3 of which are not quoted in the present manuscript) published in the last 2 years suggest a differential predictor pattern for PTSD and depression, as they reported that although certain factors (e.g. fear during the earthquake, and female gender) related to PTSD, lower education and loss of family members tended to relate to depression and not to PTSD. The present study, basing its results on the GHQ, does not allow
examination of PTSD symptoms (the GHQ may well be sensitive to PTSD, but it does not provide detailed information about symptoms). It is thus important that the authors discuss the limitations of their findings in the context of the information provided by the existing literature on the psychological consequences of earthquakes.

(ii) Page 6, second paragraph: 'studies have shown that loss is a strong determinant of post-traumatic distress among earthquake survivors'. Again, studies that attempted to separate (using statistical methods) PTSD and depression in earthquake survivors reported that loss related to symptoms depression, whereas PTSD was linked to factors relating to exposure to threat or fear for life. This distinction has important clinical implications and should be at least mentioned (if not discussed) here.

5) Page 7, second paragraph: 'we did not investigate the relationship between psychological distress and the relative impact of the earthquake'. The justification for this is that 'the earthquake destroyed almost the whole city' and that 'the results reported here is an estimate for the overall population experiencing the earthquake'. It should be made clear that among the study's limitations an important one concerns the lack of any variable assessing degree of exposure to trauma. This does not have to be measured only by one variable (epicentre versus non-epicentre). Information could have been obtained from each participant's about extent of damage to home, experience of being buried under rubble, participation in rescue operations, witnessing grotesque sites, etc.

6) Page 7, concluding paragraph: Some attempt should be made to explain why certain factors were associated with higher GHQ scores. For example, why should women and less educated people be more vulnerable to post-earthquake psychological distress?

7) One paragraph of the discussion should be addressing the study's limitations, including

a. basing the results only on the GHQ-12 and not assessing PTSD symptoms,
b. not assessing important trauma-exposure variables (extent of fear or perceived life-threat during the earthquake, rubble experience, participation in rescue operations, extent of damage to home, disability or injury, time-lapse between earthquake and assessment-date, etc),
c. not assessing important demographic variables (e.g. past psychiatric illness, family psychiatric illness)

Minor Essential Revisions
Page 4: 'logistic regression was performed to investigate factors predicting distress'. Replace the word 'predicting', which implies causality, with the expression 'related to' or 'associated with'.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Discretionary Revisions (which the author can choose to ignore)
Although I personally had no difficulty understanding what they authors meant, there are spelling and language errors throughout the manuscript: for example, 'sever' instead of 'severe' (page 5, lines 5, 6 and 12), or in the
introduction '41% reported that have lost 3-5 members of their family' instead of '41% reported they lost 3-5 members of their family'. The authors may wish to have the manuscript proof-read.

**What next?:** Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No

**Declaration of competing interests:**

None