

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form ([see an example](#)) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below. Some articles will have been accepted based in part or entirely on reviews undertaken for other BMJ Group journals. These will be reproduced where possible.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Disaster-related injury and predictors of health complaints after exposure to a natural disaster; a long-term cohort study.
AUTHORS	Geertruid MH Marres, Luke PH Leenen, Jolanda de Vries, Paul G.H. Mulder, Eric Vermetten

VERSION 1 - REVIEW

REVIEWER	Yuval Neria, PhD Professor of Clinical Psychology & Director of Trauma and PTSD Program Department of Psychiatry & New York State Psychiatric Institute College of Physicians and Surgeons Columbia University I have no competing interests.
REVIEW RETURNED	07/08/2011

THE STUDY	While the study is interesting, its methods are somewhat flawed. Response rate is low (less than 30%); and longitudinal assessment has not been conducted in ALL subjects over time. Subjects were invited to an online survey in an open, uncommitted manner. Consequently, each subject filled instrument when he/she was available, and most subjects participated only once, which makes assessment of trajectories impossible.
RESULTS & CONCLUSIONS	Trajectories of illness were NOT assessed appropriately, but reported as if there were
GENERAL COMMENTS	While this is an interesting and important study I have a number of concerns about its methodology. 1. Of 500 survivors, less than one third were assessed. 2. 175 assessments from 144 respondents were conducted over 4 years post disaster. Consequently only 31 subjects filled questionnaires more than once. The lack of repeated assessments within subjects, make the aim of the paper, studying trajectory of illness, almost impossible to achieve. 3. Using the SCL-90, a self report scale, is not the best way to assess physical illness. 4. The IES was used for PTSD, which limits generalization to many disaster studies that commonly used the PCL for PTSD. 5. The authors claim this is most long term online survey after disasters. Roxane Silver web based study was longer, and included repeated assessments.

REVIEWER	Tom Lundin Akademiska Hospital, Uppsala Uppsala University National Center for Disaster Psychiatry, Dept of Neuroscience
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	I know this field of disaster research very well, since som of my co-workers have studied effects of the tsunami-disaster on Swedish tourists. However I have no competing interests
REVIEW RETURNED	09/09/2011

GENERAL COMMENTS	<p>I find this paper very valuble, but I recommend some revisions. But first, it is very good that the original IES has been used, since this version is more in accordance with the diagnostic criteria for PTSD. It should be clear already in the abstract which version has been used.</p> <p>This is one of the first long term studies after disasters and should be published as soon as possible. It is also interesting that the authors have used a modern method: a web portal for collecting data.</p> <p>I think it would be a good idea to condense the figure and table section. It is now somewhat too vast and a bit badly arranged.</p>
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VERSION 1 – AUTHOR RESPONSE

Comments to reviewer #1

Thank you for your positive comments and suggestions.

1. Of 500 survivors, less than one third were assessed.

* We chose in this study for a different strategy than classical mailing. We had to because not all survivors were known to us. Responses on mailings typically reach a 40% return. Of the 464 survivors, 144 respondents filled in the survey, this is 31%. For privacy reasons the victim lists were not accessible for us, and therefore participants had to be contacted indirectly for participation in this survey through media, by peer groups, and through the website itself. The site also contained a forum, information portal and provided e-consult, which extended its use beyond research alone. When we take these factors into account, together with the fact that we approached survivors on a volunteer base, and offered them a lengthy questionnaire, we were happy with the response and adherence to the site. Participants in this group represented a group that had an interest in accessing the website and participation in the survey. As Vetter et al in their review in 2008 and in their recent review in this Journal indicate there are lessons to be learned in using this approach.

2. 175 assessments from 144 respondents were conducted over 4 years post disaster. Consequently only 31 subjects filled questionnaires more than once. The lack of repeated assessments within subjects, make the aim of the paper, studying trajectory of illness, almost impossible to achieve.

* The possibilities for repeated assessments and recontraction of participants was a great concern to us as well. Technical properties of the site and the anonymisation procedure that was required by law greatly influenced the eventual research possibilities, especially for longitudinal research. This is further discussed in the revised discussion (p 22) and is contains important learning points for future initiatives. Yet, we feel that the 4 groups we identified in the 4 time domain are a good representation of the trajectory of changes across the domains we assessed and valid for the results we obtained.

3. Trajectories of illness were not assessed appropriately, but reported as if there were

* As the survey could not be used for longitudinal research in the majority of the participants, the reviewer has a very good point that differences in the 4 time periods should not be reported/defined as “trajectories of recovery”. This is reformulated throughout the entire manuscript.

4. Using the SCL-90, a self report scale, is not the best way to assess physical illness.

* We understand that self-report scales are not optimal for assessing physical illness. Yet, web-based survey necessitates the use of self- report scales and the SCL is widely used, contains questions

about mental as well as physical complaints, is reported in international studies and has norms available. A health-related quality of life score (EUROQUOL 5D+) was added but had to be removed due to copyright issues (Marres et al., 2010)

5. The IES was used for PTSD, which limits generalization to many disaster studies that commonly used the PCL for PTSD.

* Both PCL and IES are widely used instruments. PCL is a bit more frequently used. We chose the IES because the psychometric value of the Dutch version of the IES (Brom & Kleber, 1985) had been well described (van der Ploeg et al., 2004) and Prof Kleber was one of the advisors for the study.

6. The authors claim this is most long term online survey after disasters. Roxane Silver web based study was longer, and included repeated assessments.

* The survey by Silver et al. after the terrorist attack on 9/11, as well as the initiative by the Stanford group (Butler et al., 2002) were of great inspiration for the setup of this research study, as we discussed in an earlier paper (Marres et al., 2010). The survey from Silver highlights the opportunities for web based research, which they also managed to perform longitudinally and is now better acknowledged in this manuscript. (p 16 and 22, refs 24 en 42).

Comments to reviewer #2

* Thank you for your positive comments. The figure section was condensed and rearranged, as per your suggestions. We also changed the reference to the IES. We hope upon acceptance the typesetter can redirect the tables to BMJ Open format.

VERSION 2 – REVIEW

REVIEWER	Yuval Neria, PhD Professor of Clinical Psychology & Director of Trauma and PTSD Program Department of Psychiatry & New York State Psychiatric Institute College of Physicians and Surgeons Columbia University
REVIEW RETURNED	22/09/2011

THE STUDY	<p>1. Using “Long term cohort study” in the title is misleading. The time frame for many subjects is less than 4 years, and there is no way to describe this study as a cohort study as most participants were not assessed more than once.</p> <p>2. Cosmetic changes in language (e.g., eliminating the term trajectory) are not sufficient to address concerns about design of the study, its analytic approach and presentations of findings. In particular, grouping assessments in 4 time periods, is a problematic choice. Presenting this method of grouping as T1-4 is misleading, conveying the impression that the subjects were assessed 4 times. Accordingly the use of linear mixed modeling for analysis is problematic.</p> <p>3. Massive editing is needed, to improve language and accuracy of the presentation.</p> <p>4. In summary, the data collected in this study may enable reports of rates of outcomes, and bivariate and multivariate examination of the relations between demographic and exposure variables and outcomes. The authors may want to control for time since disaster, instead of using 4 time points as they did.</p>
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VERSION 2 – AUTHOR RESPONSE

In light of the comments below, and the limitations of the study, it would be worth toning down a statement such as: 'The data show that tourists that are exposed to a major natural disaster and repatriated to their unaffected home environments have elevated scores on somatic, as well as, psychological symptoms' to acknowledge that the data relates only to this particular survey, unless its generalisability can be demonstrated.

The text has been reformulated to acknowledge more explicitly that the data relate only to this particular survey (p16).

On p17 the article still refers to 'a clear trajectory of recovery'.

This has been corrected, and now emphasizes that individual trajectories of recovery cannot be studied with these data (p17).

Please confirm in the contributorship statement that all authors approved the final version (assuming this is the case).

This is confirmed (covering letter, contributorship statement).

1. Using "Long term cohort study" in the title is misleading. The time frame for many subjects is less than 4 years, and there is no way to describe this study as a cohort study as most participants were not assessed more than once.

We are aware of this critical comment from the reviewer and have addressed this in the paper and the title. We have corrected the use of the word cohort throughout the paper (p 1, 2).

2. Cosmetic changes in language (e.g., eliminating the term trajectory) are not sufficient to address concerns about design of the study, its analytic approach and presentations of findings. In particular, grouping assessments in 4 time periods, is a problematic choice. Presenting this method of grouping as T1-4 is misleading, conveying the impression that the subjects were assessed 4 times. Accordingly the use of linear mixed modeling for analysis is problematic.

In line with the first comment of the reviewer this comment has also been addressed. We made an effort to prevent that this would be misleading. E.g. on p12, at the top of the results section, this is pointed out explicitly: "175 surveys were completed, which could be anonymously linked to 144 unique respondents. Of these 144 respondents, 120 respondents completed the survey assessment once, 18 respondents filled in two assessments at different times, 5 respondents participated in three assessments and 1 respondent completed four assessments"

The presentation does address the linear mixed model, used to account for repeated as well a single measurements (p10). Linear mixed modeling analysis included all 175 surveys while not inflating the sample size, i.e., taking account of an actual sample size of 144 different and independent subjects. For the intercorrelation between repeated measurements a simple compound symmetry structure was chosen because of the scarce information in the data.

The main purpose of using linear mixed modeling here was to avoid an incorrect inflation of the sample size. The scarce longitudinal information that was available from repeated measurements within the same subject hardly plays a role in the estimated results due to its great uncertainty. The estimated effect of time-since-disaster as it is represented by the categorization into four periods. The limitations section has also been rewritten to address this critical point. The lack of repeated assessments within subjects, and impossibility of longitudinal analysis is pointed out in the limitations section of the discussion (p21-22)

3. Massive editing is needed, to improve language and accuracy of the presentation.

The paper was thoroughly edited, the reading has been improved. Language was edited by a native English speaker.

4. In summary, the data collected in this study may enable reports of rates of outcomes, and bivariate and multivariate examination of the relations between demographic and exposure variables and outcomes. The authors may want to control for time since disaster, instead of using 4 time points as they did.

Outcomes and the relationships between demographic and exposure variables and outcomes have therefore also been presented for the entire group. To account for time since disaster, we chose to also evaluate the results cross-sectionally in four time periods. Controlling for time since disaster could have been another choice.

In the setup of a webportal that we are developing for disaster victims these issues have been addressed. Study design and technical portal properties have been changed, aimed to enable true longitudinal follow-up.