Author’s response to reviews

Title: The trajectory of symptom burden in exposed and unexposed survivors of a major avalanche disaster: A 30 year long-term follow-up study

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A point-by-point response letter to BMC Psychiatry

We thank the reviewers for their valuable comments and appreciate their suggestions. We have answered all their comments one-by-one below.

Answer to Editor Comments:

1. Comments Editor:

Please clarify and detail the procedure for obtaining informed consent from the participants.

Response from the authors:

In order to clarify the procedure for obtaining the informed consent from the participants we have included the following text in the “Method” section under “Study design and procedure” section, line 8-18, page 6:
“By law, the Norwegian Armed Forced Joint Medical Services’ record has an overview of the sample in this survey. Information about the survey, and the questionnaire, with a sheet to sign for written consent was sent by postal mail to all potential participants. They were informed that answering and returning the questionnaire and the signed consent form, were considered as a consent to participate in the study. The participants were followed up by a phone call and a message via mail or postal mail thanking those who had returned the questionnaire and reminding those who had not returned the questionnaire to consider doing so. Participants needing professional psychiatric aid were offered support from the Institute of Military Psychiatry. All participants were told that they could withdraw whenever they wanted during the survey, without any further explanation and that withdrawal would not affect their contact with the Norwegian Armed Forced Joint Medical Services in the future.”

2. Comments Editor:

Please remove figure titles and legends from the figure and place these in a separate section following the references.

Response from the authors:

Done as recommended. All tables and the figure are placed in a separate section following the references.

Answers to Reviewers (1 and 2) comments:

Reviewer 1:

1. Comments from Reviewer 1:

Other element not sufficiently stressed in the discussion is that the control group (unexposed) was composed of those "standing outside the avalanche area". Which could explain the similarities in some of the follow up measures.

Response from the authors:

The unexposed (control group) were from the same platoon, which could explain the similarities in some of the follow up measures. We agree with the reviewer that this may not have been sufficiently stressed in the discussion section. Therefore, we have included the following text in the “Discussion” section, line 39-46, page 14:

“A possible explanation for the non-significant differences in PTSD-symptoms (measured by PTSS-10 and IES-15) between the two groups in our study, may be related to the fact that the
soldiers in the exposed and unexposed group served in the same platoon and that they knew each other very well. Therefore, the exposed and unexposed soldiers were affected with the trauma directly or indirectly. Thus the unexposed soldiers could by be considered as victims (although indirectly). A previous study, May and Wisco [57] supports an assumption that level of direct and indirect exposure to trauma may affect individuals regardless of exposure impact.”

Reviewer 2:

1. Comments from Reviewer 2:

It is to be expected that due to the very small sample size, distribution and estimation problems occur. I strongly suggest using non-parametric statistical tests (e.g., the Wilcoxon-Mann-Whitney instead of T-test).

Response from the authors:

We agree with the reviewer that our sample is of a very limited size and it does not allow us to use very advanced statistical modeling. However, we had complete data and a very long follow up. The aim of our study was to estimate possible differences between the groups over time therefore we used a very flexible methodology and fitted linear mixed models. To account for uneven time intervals between measurements and a small sample size, we used unstructured covariance matrix, thus a non-parametric structure. For all outcome measures that were categorical and dichotomized, the odds for scoring over a given cut-off value were modeled using binary logistic regression models for repeated measures. The models were fitted with group and time. See “Statistical analyses” section, line 6-7 and 14-16, page 9.

2. Comments from Reviewer 2:

It is possible that with a larger sample, the differences between the exposed and unexposed groups regarding adjusted PTSS-10, IES-15 or STAI-12 mean scores would become significant. It is very important to provide evidence that the study has sufficient power to detect effects of substantive interest. Therefore, please perform a power analysis for each statistical test.

Response from the authors:

We completely agree with the reviewer that power calculation is an important part of any quantitative study. We also agree that given the differences in our estimated means it is likely some of the differences would be statistically significant if the sample size was larger. However, we had only this sample to our disposal and given the nature of our study, we were not able to recruit more individuals as we have already included all the surviving individuals. Keeping the limited sample size in mind as a limitation, we have used statistical models that explore the data
in depth. In addition, these data were analyzed also as a part of our ethical obligation to provide results to the included participants as they used they time and efforts to answer our questions. To acknowledge the limited sample size, we have included paragraphs about this issue in the Limitation section, see “Strengths and Limitations” section, line 4-6 and 10-15, page 19-20.

3. Comments from Reviewer 2:

Were the exposed and the unexposed soldiers part of the same unit or team? Did they know each other before the avalanche disaster? If yes, this may explain why there are no differences: unexposed soldiers could be considered victims (although indirect) too.

Response from the authors:

The exposed and the unexposed soldiers served in the same platoon (unit/team) and they knew each other very well before the avalanche. This is clarified, maybe not sufficiently, in the manuscript. e.g., in the “Method” section under “Participants” section, line 6-9, page 5, please see underscored text below:

“All survivors (exposed) (n=15), and the remaining members (unexposed) (n=15) of the platoon who were stand-by outside the avalanche area, were enrolled in the study immediately following the disaster. The unexposed soldiers were included in the study as a comparison group.”

Further, that they served in same platoon is also emphasized in the “Discussion” section, line 27-30, page 13:

“It may be a result of serving in the same platoon, being the same age and gender, undergoing the same selection procedures and, of course, both groups were closely related to the disaster, directly or indirectly.”

However, we agree with the reviewer that this may not have been sufficiently stressed in the manuscript. Therefore, following revision is done in the manuscript to emphasize that the unexposed and exposed soldiers served in the same platoon, and that they knew each other very well, see “Discussion” section, line 39-46, page 14:

“A possible explanation for the non-significant differences in PTSD-symptoms (measured by PTSS-10 and IES-15) between the two groups in our study, may be related to the fact that the soldiers in the exposed and unexposed group served in the same platoon and that they knew each other very well. Therefore, the exposed and unexposed soldiers were affected with the trauma directly or indirectly. Thus the unexposed soldiers could by be considered as victims (although indirectly). A previous study, May and Wisco [57] supports an assumption that level of direct and indirect exposure to trauma may affect individuals regardless of exposure impact.”