Author's response to reviews

Title: Use of mental health services among disaster survivors: predisposing factors

Authors:

Dirk-Jan Den Ouden (dirkdenouden@gmail.com)
Peter G Van der Velden (peter.vdvelden@ivp.nl)
Linda Grievink (linda.grievink@rivm.nl)
Mattijn Morren (mattijn.morren@nivel.nl)
Anja JE Dirkzwager (anja.dirkzwager@nivel.nl)
C. Joris Yzermans (joris.yzermans@nivel.nl)

Version: 2 Date: 13 February 2007

Author's response to reviews: see over
Dear Editor,
Thank you very much for giving us an opportunity to revise our manuscript entitled “Use of mental health services among disaster survivors: predisposing factors”, which was previously submitted to BMC Public Health. Also, we could like to thank the reviewer (Hayden Bosworth) for his insightful comments and helpful suggestions.

We have revised the manuscript taking into account the comments of the reviewer. All revisions and changes have been underlined. Also, we have detailed the revisions on a point-by-point basis as listed below. We believe the present manuscript has been improved. We look forward to hearing from you on the final decision regarding publication of our manuscript.

Yours sincerely,

Dirk-Jan den Ouden
Major Compulsory Revisions

1. **It is unclear what the concept disaster related intrusions and avoidance reactions mean.**

   We added some extra information regarding disaster-related intrusions and avoidance reactions. We have revised as follow: (page 4, line 7-16)

   "PTSD is the most common psychiatric disorder after a traumatic event and is characterised by having three categories of symptoms: intrusion, avoidance and hyperarousal (APA) Intrusions are manifested in a preoccupation with the disaster, repeated thoughts about the event, vivid memories accompanied by painful emotions or nightmares. Avoidance reactions, such as emotional numbness, refusal to talk about it and avoidance of locations reminding of the traumatic event, are considered as attempts to block out the intrusions by. Hyperarousal is characterised by a state of nervousness, accelerated heart beat, difficulty sleeping.

2. **The authors imply that combining data obtained from electronic records and supplemented by post-disaster self-reports is beneficial and unique, yet why the combination is important is not made clear.**

   We have revised as follow: (page 18, line 19-25)

   "After the disaster we had a unique opportunity to combine survey data with medical records from general practitioners, allowing the collection of both subjective as objective information respectively. Besides, actual pre-disaster information on health status was available from the medical records. Having these pre-disaster data is rather unique in disaster research as most studies lack these data or are measured retrospectively which is more prone to recall bias".
3. Further details on why only 339 individuals out of 1008 had both electronic medical record and survey data available. In addition, the implications of approximately two-thirds of the individuals lacking complete data needs to be addressed.

For 339 out of 1008 survivors (MHS-patients) data from both surveys and the electronic medical records of their GP were available. Although demographic and disaster-related variables of the present MHS-patients did not differ from MHS-patients for whom no surveys and/or whose GP data were available, the possibility that selection bias occurred cannot be ruled out. However, it seems unlikely that this limits the generalizability of our results, because a recent study found that selection bias did not affect the survey results.

In the discussion section we added: (page:18; line 1-6)

"Although the study-population did not differ on demographic and disaster-related variables from MHS-patients who did not participate, it is possible that a selection has occurred, limiting the generalizability of the results. However, a study investigating selective participation in the health surveys of affected residents found that even though there was selective participation in the surveys, this did not affect the results [44].

4. Another important factor that is likely to be relevant is not only whether an individual was injured, but also whether a family member was as well.

We agree with the reviewer that the injury of a family member can be an important factor as well. In fact, the survivors were asked in the surveys not only whether they were injured themselves but also if they lost a family-member, friend or colleague as a result of the disaster. Because of the low frequencies in these cells, the two questions were combined into one variable for the analysis. Because we did not want to complicate things, we did not mention it at first.

To clarify this issue, we have added the following sentences: (page:9, line 22-24)

"Furthermore survivors were asked if they got injured as a consequence of the disaster and whether they lost a family member/friend or colleague as a result of the disaster.

And we added (page:11, line 15-16):
"Because of low cell frequencies, the latter two variables were combined into one variable (injuries) for the analysis".
5. **In addition, details on the operationalization of immigrant status is needed.**
To explain the operationalization of immigrant status, we have added some information. The text now reads: (page:8, line 21-22)

"A number of demographic variables (gender, age, immigrant status – defined as first and second generation versus Dutch natives) and information on number of contacts and date of admission was recorded in the electronic database".

6. **In terms of the analyses, consideration needs to be provided for the potential problem of multicollinearity.** This partially may explain the high OR, but lack of significance. In general, table 6 is not all the helpful and further thought about what variables are included in the model are required. With longitudinal data, it is not clear why the investigators do not assess change in health care use, etc.

We agree with the reviewer that the problem of multicollinearity is an important issue. To test the presence of multicollinearity in table 6, we reran all logistic regression models a second time to examine the effect of each independent variable on the whole model. More specifically, we alternately removed each variable from the model to establish whether the remaining ORs would change. No substantial change was observed, indicating that multicollinearity does not explain these wide confidence intervals.

We accommodated this in the text by revision of the following phrase (page 13, line 24-page 14 line 3):

"Although not statistically significant in table 6, ORs above 1.7 were observed for relocation, social functioning problems, public insurance and physician diagnosed musculoskeletal problems in P2 (ORs=1.95, 1.79, 3.03 and 1.89 respectively), which might suggest that these factors are predictors”

Furthermore, we added the following sentence (page:12, line 2)

"Multicolinearity was not a factor in the analysis".

We do believe that table 6 provides additional information because we were also interested in identifying the most important independent predictor when all variables are considered. Therefore, we entered all variables simultaneously into the model.

We were not able to assess change in health care use as most MHS-patients were registered only once at the MHS during the study-period. Because the MHS was implemented after the disaster specifically for disaster survivors, no information was available on pre-disaster MHS utilization. Therefore, we were not able to assess change in MHS use.

We agree with the reviewer that if both pre- and post disaster data on MHS-utilization were available, data could be analysed longitudinally. However, our data on MHS-use
was dichotomous (user/non user) and our group would split into four groups resulting in small numbers.

7. The discussion section does not integrate well the current findings with prior studies. Simply listing what others have found does not provide a helpful context to interpret the current findings

We rewrote the discussion section.

**Minor essential revisions:**

8. further details regarding levels for public insurance need to be discussed

We added the following paragraph: (page:9, line 12-17)

"In addition, information on forced relocation as a result of the disaster and health insurance was available. Until 2006, the Dutch insurance system was divided into public (state run) and private health insurance. Persons were publicly insured when their gross annual income was below a certain level. Therefore, type of health insurance can be used as a proxy for socioeconomic status (SES)."