

**STROBE Checklist - Disaster-related injury and predictors of health complaints after exposure to a natural disaster; a long-term cohort study.**

	<b>Item No</b>	<b>check</b>
<b>Title and abstract</b>	1	(a) Disaster-related injury and predictors of health complaints after exposure to a natural disaster; a long-term cohort study. <hr/> <i>(b) abstract p 2-3</i>
<b>Introduction</b>		
Background/rationale	2	<i>Background:</i> Introduction p4
Objectives	3	<i>Specific objectives:</i> 1. Assessment of both acute and long-term impact of exposure to natural disaster on physical and mental health in convenience sample of repatriated victims, 2. Identification of impact of disaster-related injury and predictors of health complaints in novel use of web-based survey
<b>Methods</b>		
Study design	4	<i>Key elements of study:</i> methods p 6
Setting	5	<i>Setting and datacollection:</i> Open, online survey on webservice for victims of large scale disaster (i.e. 2004 tsunami).  <i>Relevant dates and periods of recruitment:</i> 4 year time span, between January 2005 and January 2009. Assessments in 4 time periods (0-3 months, 4-6 months, 7-30 months and 31-48 months post disaster).
Participants	6	<i>Eligibility criteria:</i> (anonymous) online registration, exposed to 2004 tsunami, minimum age 18 years, informed consent
Variables	7	<i>Exposure, variables and predictors:</i> Demographics (gender, age-category, educational level, employment, marital status) and disaster related factors (injury, medical care, loss of loved ones, duration of danger to life)  <i>Outcomes:</i> SCL-90 and subscales, BDI-II, IES.
Data sources/ measurement	8*	Data through validated questionnaires designed for self-completion filled in the online survey by the participants. Scores calculated

according to the manuals (SCL90, BDI-II and IES).

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Bias	9	<p>Online survey was open and participation was anonymous. It was offered through webservice that also contained an information portal, community and e-consultation. The study sample is a sample of convenience. We had hardly any influence on which subject would respond and how often that subject would respond. We checked if participants with missing values were different in exposure of demographic characteristics from participants with completed questionnaires. This was not the case.</p> <p>The majority of subjects (120 out of 144) filled in only one interview list, varying substantially in time-since-disaster. Therefore, statistical inference on the evolution of outcome variables in the course of time-since-disaster was mainly based on between-subjects data and only partly on purely longitudinal (within-subjects) data. Although this may have caused loss of efficiency, we have no reason to suppose that this has seriously biased the results.</p>
Study size	10	<p>We collected 175 survey lists from 144 respondents through an open online survey. The study sample is a sample of convenience. The registered total number of Dutch victims of this disaster was 500 persons.</p>
Quantitative variables	11	<p>Continuous outcome variables SCL-90 and subscales, BDI-II and IES were parametrically analyzed using linear mixed modelling, assuming normally distributed residuals and taking account of correlation between repeated measurements (144 respondents having filled-in 175 survey lists). For descriptive purposes these outcome variables were categorized in a relevant way and their relative frequencies presented (Table 5)</p>

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Continuous outcome variables SCL-90 and subscales, BDI-II and IES were analyzed using linear mixed modelling. First, a simple model was used containing time period (considered categorical as well as trend), gender and their interaction. Second, we extended the model with additional demographic and outcome and disease related explanatory factors, in order to test the effect of the outcome and disease related factors on the outcome variables and to test the interaction of these factors with time period. A restricted maximum likelihood method (REML) was used for estimating the effects. (paragraph “statistical analysis” p 9 and 10)

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Missing values were not imputed. It is assumed that the REML method used in the mixed model analysis yields the proper estimates for the effect of time period on the outcome variables. No sensitivity analyses were done.

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**Results**

Participants	13*	(a) <i>Number of participants at each stage of study</i> 0-3 months: 59; 4-6 months 28; 7-30 months 51 and 31-48 months 37 participants.
Descriptive data	14*	(a) <i>characteristics of study participants and exposure</i> table 1 and 2 (b) <i>missing values</i> ; sociodemographic details: educational level 4 (table1); disaster related factors: danger to life 11 (table 2); SCL-90 12; IES 5; BDI-II 12 (table 5) (c) Summarise follow-up time (eg, average and total amount) Time since onset when filling-in the interview list was categorized into 4 time periods (0-3 months, 4-6 months, 7-30 months and 31-48 months after the disaster)
Outcome data	15	Raw summary statistics of outcome variables are presented in tables 3 (continuous scores) and 5 (categorized scores) per time period. Estimated means with 95 % CI's per time period and gender using linear mixed modeling are presented in table 4.
Main results	16	Table 4 presents the estimated means with 95 % CI's of the outcome variables (SCL-90 and subscales, BDI-II and IES) by

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		time period and gender using linear mixed modeling. Figures 1 to 4 present their gender-adjusted means with 95 % CI's per time period. Section Results describes a.o. the significant estimated effects (with SE's) of the outcome and disease related explanatory factors on the outcome variables, adjusted for each other, for time period and for demographic characteristics. The interaction between time period and each of four outcome and disease related explanatory factors separately was additionally entered in the model and tested.
Other analyses	17	Internal consistency of the SCL-DEP and BDI-II scores (both measuring depressive symptoms) was analyzed using the partial correlation coefficient, adjusted for time period and gender.
<b>Discussion</b>		
Key results	18	<i>Key results</i> Despite a clear trend to recovery over 4 years the 2004 tsunami had significant short and long-term impact on health complaints in a selected group of tsunami victims. Physical injury or loss of loved ones did not necessarily result in worse outcomes. Duration of danger to life and female sex were associated with more physical and mental health complaints.
Limitations	19	Only post-disaster data available. No overall longitudinal follow up.
Interpretation	20	Hardly any other studies exist that enable identification of predictors of health outcome as well as description of trajectories of recovery. Novel use of webservice in post disaster population.
Generalisability	21	<i>External validity</i> results could be applied to other groups of (repatriated) victims of natural disaster. No validity for tsunami victims that reside in the devastated area. Of the total estimated exposed Dutch population of 500 victims a substantial amount of 144 participated in the survey.
<b>Other information</b>		
Funding	22	The study has core support from Major Incident Hospital, Arq Foundation and Institute of Psychotrauma. A variety of medical research charities and commercial companies have supported the project, by providing free services (HP, Intel). Researchers are

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independent from funders.

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