

Posttraumatic Morbidity Six Years after the Major Disaster Experience during the 2004 Tsunami

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Abstract

With the help of personal face-to-face interviews, a study was made of a group of Swedish tsunami survivors (n=21) who were non-bereaved and extremely exposed during the 2004 tsunami disaster in Southeast Asia. They all scored high on IES-22R and GHQ-12 three years post-disaster. The morbidity was very low: one survivor met criteria for PTSD and one for major depression.

Keywords: PTSD; Major depression; Morbidity

Background

The prevalence of post-traumatic stress disorder, PTSD, after a natural disaster is generally lower than that documented in studies of man-made or technological disasters [1]. However, in natural disasters it is more difficult to explicitly identify an obvious group of direct victims in that large areas are usually affected. As suggested by Galea et al. [1], this fact could possibly explain the lower figures of PTSD. Closeness to the disaster, female gender, low social support, and a weak social network seem to increase the probability of an adverse mental health outcome [2,3]. Measuring morbidity after major disasters by help of personal face-to-face interviews has earlier been used in very few Scandinavian studies [4-6]. Telephone interviews have been used for long-term follow-up studies [7,8]. The motivation for this study is the fact that the best (maybe only) way to diagnose a psychiatric disorder is by personal face-to-face interviews.

Method

Traumatic event and background

During the tsunami flood disaster of December 26, 2004 in South-East Asia more than 2,27,000 persons were killed. This region is from a North European perspective a very popular tourist area. At the time of the tsunami more than 19,000 Swedish tourists were estimated by the Swedish National Police to have travelled to Southeast Asia to celebrate holidays. Around 7000 of this group were rated to have been staying in the most affected areas on the western coast of Thailand, according to estimations made by domestic major traveling agencies. These Swedish citizens included large groups of families, including toddlers, and single travellers. Public awareness and knowledge about tsunamis were more or less completely lacking in this population. In the end, 543 Swedish citizens perished, including 140 children, making Sweden one of the most affected countries in Europe.

The psychological and mental health effects on survivors and bereaved relatives after the tsunami disaster have been studied by help of questionnaires in Denmark [9], Norway [10-14] and Sweden [8,15-19]. Personal, face-to-face, interviews have earlier been used only in three tsunami studies [20-22].

The group of Swedish survivors, which has been followed up consisted of 10 116 persons, coming from 10 health care regions, including the three big cities in Sweden (Stockholm, Gothenburg, and Malmö) and also rural areas. The first follow-up questionnaire (14 months post disaster) was returned by 4 932 persons (48.8%). It was comprehensive and included validated self-rating scales: GHQ-12, IES-R and PGI-21.

The second follow-up questionnaire (3 years) was sent to 4 910 (of the responders to the 14-months study) and returned by 3 457 survivors (70.0%). Structured telephone interviews have been used in a six-year follow-up of Swedish survivors [6]. The inclusion criteria for this study were if they had been caught in or chased by the tsunami or experienced one or more of the following: bereavement of family/relatives, physical injuries to themselves or others, and witnessing distressing consequences of the disaster (dead bodies, other suffering, or forlorn children). In all, 1 684 out of 4 932 (34.1%) individuals fulfilled the exposure criteria and agreed to a telephone interview. Of the randomly approached 200 persons 142 were interviewed via telephone. The authors found that the 6-year prevalence of PTSD was 11.3% and the current prevalence was 4.2%. Other psychiatric disorders were not higher than the general population.

Participants, study design and psychometric assessment

For the actual study 21 persons were selected from the Swedish tsunami cohort for semi-structured interviews. The selection process was the following. From the original cohort (n=4932) a group was extracted and defined as follows:

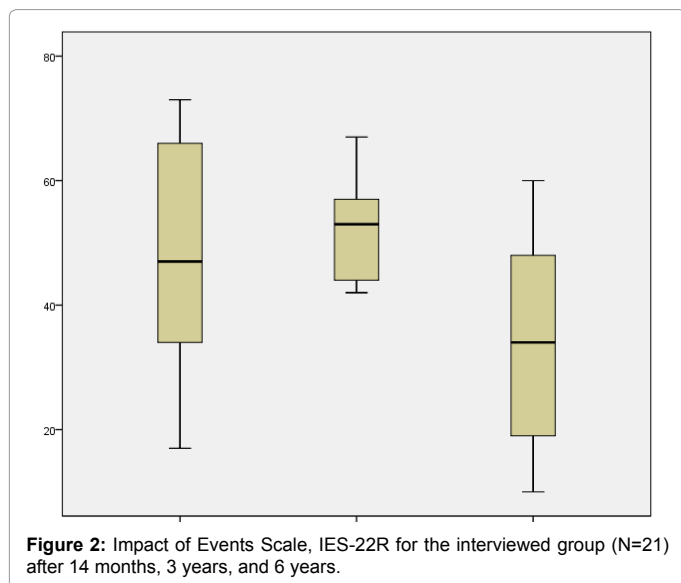
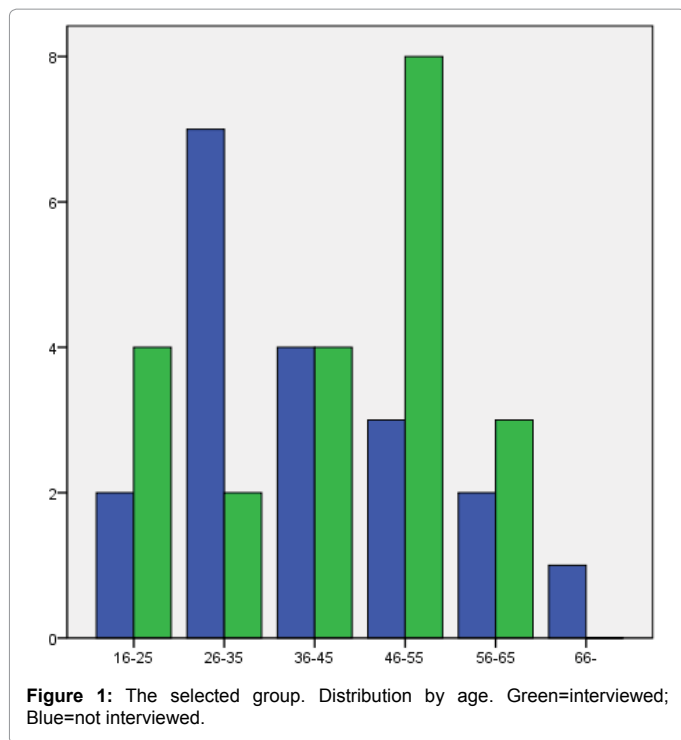
Extremely exposed for life threat, non-bereaved, accepting personal interviews in the 3-year follow-up questionnaire, with an IES-sum >41.7 at 3-year, and living in the Uppsala-Stockholm area (in order to make it possible for personal interviews by the same interviewer). These criteria were met by 41 survivors, who were asked to participate in the interview study. The IES-22R scale is the most relevant indicator for posttraumatic stress and therefore the core measure for probable PTSD. Two persons refused: two men, age 64 and 49 years respectively. The rest of the group were men and women between 24 and 70. A group of 21 were selected (every second in the age distribution, (Figure 1). They were personally interviewed: in-depth and semi-structured interviews with SCID-technique. The interviews were completed between January and March 2011 – six years post-disaster. The interviews were made by

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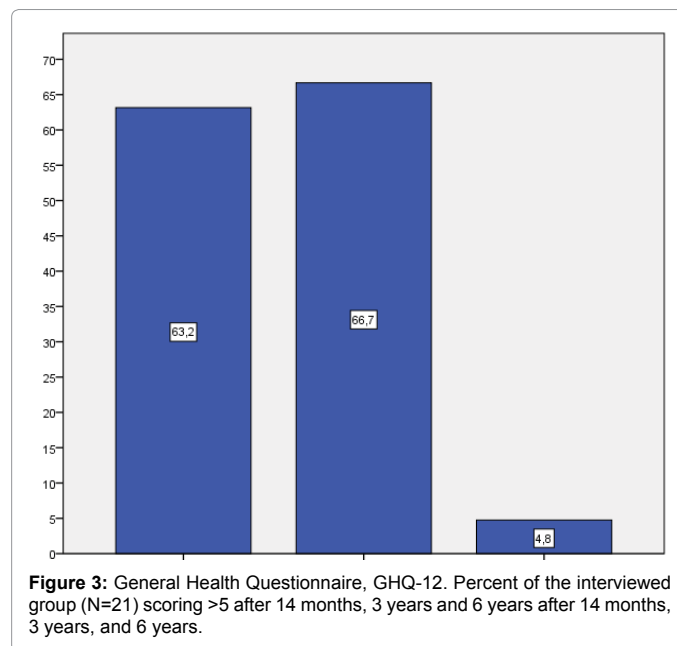
psychiatrist with more than 30 years' experience in general psychiatry and disaster medicine (T.L.). The interviews lasted around one hour and a half and were made in the survivors' homes, tape-recorded and completed with three self-rating scales: Impact of Event Scale-Revised, IES-22-R [23], General Health Questionnaire-12, GHQ-12 [24], and Posttraumatic Growth Inventory, PGI-21 [25].

Results

None of the interviewed survivors fulfilled criteria for any personality disorder. The Posttraumatic Growth Inventory, PGI-21 has five subscales: 1. relationships to others, 2. new possibilities, 3. personal strength, 4. spiritual change, and 5. appreciation of life. The interviewed persons did not report any change over years. There was a significant decrease

of posttraumatic stress symptoms for the interviewed group (N=21) as measured by IES-22R 6 years after the tsunami, compared with 14 months and 3 years (Figure 2). The group reported a much better general health 6 years post-disaster as measured by GHQ-12 (Figure 3).

The most interesting finding is however the very low prevalence of full PTSD, only one person. One survivor had developed a major depression. Two persons had a well-compensated PTSD; one had a partial PTSD, and one person reported full PTSD in the acute phase, during the first years after the disaster (Table 1).



Age	Sex	Occupation	Earlier Psychosocial problems	Somatic injuries	Psychiatric diagnoses
71	m	graphic art.	-	+++	partial PTSD
69	m	house painter	??	-	depression
64	f	speech therapist	-	+	-
61	f	nurse	-	-	-
57	f	police	++	+++	-
57	m	technician	-	-	-
56	f	college teacher	-	-	-
54	m	fire officer	-	(+)	-
53	m	buisness leader	-	++	compensated PTSD
53	f	dentist	-	-	-
52	m	journalist	(+)	+	-
48	m	teacher/plumber	++	-	-
47	f	negotiator	-	+	-
46	m	mental healthnurse	-	-	-
43	f	estate agent	-	-	compensated PTSD
36	f	bachelor of economy	-	(+)	Earlier PTSD (acute phase)
35	m	buisenss sleader	-	(+)	-
31	m	economy director	-	-	-
29	f	college teacher	+	-	PTSD
27	f	theatre producer	-	-	-
24	f	shop assistant	++	+++	-

Table 1: The interviewed group (N=21): some background variables and psychiatric morbidity reported in face-to-face interviews 6 years post-disaster.

Discussion

The methodology used, face-to-face interviews, has very seldom been used in disaster follow-up studies or in other psycho-traumatology research. To compare with other studies will therefore be difficult or impossible. It is postulated that face-to-face interviews with SCID-based method is the only way to guarantee a psychiatric diagnosis. The Uppsala-Stockholm area is to satisfactory extent representative for the country since it includes the metropolitan area, smaller cities and rural districts. The most important reason for the selection criteria in this study was also to exclude all bereavement reactions, since it is a known fact that traumatic bereavement often results in psychiatric morbidity. It might therefore be assumed that reported prevalence of morbidity in this study is a direct effect of exposure.

It must however to be taken in account that the Swedish tourist group as a whole was very well socio-economically established and had a very low pre-trauma morbidity. The prevalence of PTSD or other trauma-related disorders would be much higher in a traumatized group, which is representative for the whole population.

Compared to the results of the telephone based interview study of tsunami survivors, also six years post-disaster [8], this study based on personal interviews had much more "narrow" inclusion criteria (see above). This, together with the method used (personal interviews) could explain the difference in psychiatric morbidity. Telephone interviews might also be over-inclusive to some extent and therefore report higher prevalence of morbidity.

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