

## **Voluntary and Professional Disaster-Workers: Similarities and Differences in Reactions**

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*Forty-three rescuers responding to a bus crash that killed 12 children and 4 adults and injured many more answered questionnaires at 1 and 13 months following the crash. This study compared the responses of the voluntary and professional helpers, using the Impact of Event Scale (IES) and the General Health Questionnaire (GHQ). For all helpers taken together, the decline in IES-intrusion and IES-total scores was significant from 1 to 13 months. The voluntary helpers reported significantly more intrusion and avoidance on the IES at 1 month than professional helpers, and for avoidance the voluntary helpers still evidenced a significantly higher score than professional helpers at 13 months. The GHQ scores at 13 months reflected that the long-term negative impact of the event was low.*

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**KEY WORDS:** rescuer's reactions; professional and voluntary helpers; Impact of Event Scale; debriefing.

From being an unrecognized group of "hidden" victims, rescuers as well as medical and support personnel involved in disasters have received increasing attention. Recent research has shown that emergency personnel responding to disasters are exposed to a variety of stressors that produce an array of psychological, social and physical reactions (Duckworth, 1986; Ersland, Weisaeth, & Sund, 1989; McFarlane, 1988; Taylor & Frazer, 1981, 1982; Wilkinson, 1983). When children are the victims of accident and disaster situations, more intense emotional responses can be expected from the helpers (Dyregrov & Mitchell, 1992; Hershisser & Quarantelli, 1976; Jones, 1985; Rayner, 1958). Less is known about how disaster work is experienced by different subgroups of helpers. Ersland, Weisaeth, and Sund

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(1989) have shown that professional rescuers report stress reactions less frequently than nonprofessionals. They speculated that this may be due to their training and experience or to self-selection among professional rescuers in their career as regards personality traits. This article will focus on the similarities and differences in reactions of voluntary and professional helpers working at a disaster-site.

### The Disaster

The disaster occurred in a steep, remote valley in Norway in August 1988. A tour bus with 34 people on board, 23 of them children, crashed into the wall of a tunnel after the brakes failed as it was descending the steep road. Twelve Swedish children and four adults were killed, all seated on the right-hand side of the bus. Many children and several adults sustained serious injuries. Rescuers and health personnel from the nearby villages responded, and carried out the rescue work. It took more than 6 hr to extricate all injured and dead from the wreckage. Cutting tools had to be used to cut through thick metal to free both injured and dead people.

### Method

#### *Subjects*

A total of 85 on-scene responders were sent a questionnaire 1 and 13 months following the crash. The group included all on-scene responders, except those who were assigned to helicopters and the private citizens who volunteered to help. Voluntary helpers consisted of Red Cross workers and a voluntary fire brigade, while professional helpers included police, fire rescue personnel and health personnel. Of these, 57 returned their questionnaires (a response rate of 67%) at 1 month, and 50 at 13 months (7 for the first time, a response rate of 59%). Forty three subjects answered at both time points (a 55% response rate). One questionnaire was excluded.

Of the 24 voluntary helpers (VH) who returned the questionnaire, 87% were men, and among the 32 professional helpers (PH), 77% were men. The VH group ranged in age from 24 to 56 years ( $M = 37.3$ ,  $SD = 8.2$ ), and the PH group from 23 to 61 years ( $M = 37.1$ ,  $SD = 8.3$ ). The total group had a range of experience from less than a year to 28 years. The professional helpers had a mean of 10.8 years of experience, while the voluntary helpers had a mean experience of 7.1 years ( $F = 4.29$ ,  $df = 52$ ,  $p < .05$ ). While 62% of the PH had experience from large-scale accident

situations or disasters before, only 33% in the VH group had such experience ( $\chi^2 = 4.67, p < .05$ ). No one knew personally those who were killed or injured. Twenty two percent of the professionals served in a leadership role, compared to 9% of the voluntary workers.

Many helpers served in several roles. The voluntary helpers were significantly more involved in transportation of the dead (67%) than the professional helpers (31%), as the Red Cross personnel carried out much of this work ( $\chi^2 = 6.92, df = 1, p < .02$ ). Most helpers were involved in extrication and transportation of injured and in keeping bystanders at a distance and searching for possible missing persons. The work lasted between 2 1/2 and 21 hr ( $M = 8$  hr) for the total group (no difference between VH and PH).

### *Procedure*

On the invitation of the local police superintendent we were invited to provide psychological debriefing to the on-scene personnel involved, in the week following the accident. Follow-up debriefings were also provided 3 weeks after the event. At the end of the debriefing sessions we asked for permission to send a questionnaire to those involved. The stated purpose was to learn more about rescuers' and helpers' reactions to such an event. All personnel were sent a questionnaire about 1 month following the accident. Three Red Cross workers not present at the debriefing were also sent a questionnaire. Thirteen months following the disaster a follow-up questionnaire was sent to the same personnel. No names were requested in the questionnaire, but each questionnaire was identified by a number, and a separately kept list of names made it possible to identify questionnaires from those who responded at the two time points.

### *Questionnaire*

The questionnaire contained demographic questions, questions concerning prior experience and work performed during the disaster, and questions concerning the immediate reactions and reactions during the first weeks following the disaster-work. The questionnaire also contained the Impact of Event Scale (Horowitz, Wilner, & Alvarez, 1979). This scale summarizes the impact of trauma on two dimensions, intrusion and avoidance. Intrusion is characterized by distressing thoughts, feelings, and nightmares, whereas avoidance is characterized by avoidant thinking and behavior, as well as psychic numbing. The 4-point, Likert-type scale (0 = not at all, 1 = rarely, 3 = sometimes and 5 = often) scoring method was used (Zilberg,

Weiss, & Horowitz, 1982). A list of items including common posttraumatic symptoms with four categories of responses, "not at all," "a little," "somewhat," "to a large extent," were also part of the first questionnaire.

After 1 year the personnel were asked to evaluate the help they had received after the event. In addition, questions concerning the length of time before returning to normal, about problems that had made it difficult for them to perform their usual duties, and questions about how they viewed life following the event were included. A list of coping statements developed on the basis of the responses to the first questionnaire were included (results reported in Dyregrov & Mitchell [1992]), as were the Impact of Event scale and the General Health Questionnaire (Goldberg, 1978).

## Results

Fifty percent of the VH and 28% of the PH thought they were not fully prepared for the task they had to undertake. While 50% of the voluntary personnel had some doubt as to what to do during the work, only 25% of the professionals had such doubt. However, almost no persons in the two groups felt they had not coped with their tasks. Only a few of them (three of the VH and one PH) asked to be relieved from their tasks for shorter or longer periods.

Regarding the stressful nature of the event, 81% of the voluntary helpers said that the disaster-work involved greater strain than they ever had experienced in previous work, compared to 56% of the professional workers.

Regarding their need to talk about their impressions and reactions, and how much they actually had talked with colleagues, friends and family, the two groups did not differ much. However, the voluntary personnel had greater difficulties talking about their experiences and reactions following the disaster than the professional helpers. Seventy five percent of the voluntary helpers compared to 43% of the professional helpers had experienced such difficulty ( $\chi^2 = 5.47, p < .02$ ). Sixty percent of the helpers said it had been somewhat or very useful to talk with others about their impressions and reactions.

The groups were equally positive in their perception of psychological debriefing following the event. All but one person felt that this had been of help for them. More than one third (37%) of the helpers said that the disaster had caused complaints that to some degree made it difficult for them to do their ordinary work. None of the helpers had taken any sedatives following the work, a few had contacted professionals for the com-

plaints that they developed, and a few took sleep-medication as a result of the event. Regarding the time it took before they felt fully recovered from their work, 54% of the voluntary helpers, compared to 90% of the professionals said this was achieved within a week ( $\chi^2 = 8.91, p < .01$ ). Almost all helpers (98%), voluntary and professionals alike, felt that the follow-up they received had been adequate.

In Table 1 the percentages of different on-scene reactions are listed for voluntary and professional helpers, as they acknowledged them one month following the event. The two groups were very similar in their response pattern, and none of the observed differences reach statistical significance. Almost all helpers of both groups reported good cooperation, while irritation at the media, helplessness and hopelessness were the negative reactions experienced by more than 50% of both groups. More than a third of both groups experienced unreality at the disaster scene, and almost as many experienced frustration caused by waiting. If any, the tendency was for VH to report more reactions than PH.

After 13 months the helpers were asked to indicate to what degree they had used different coping mechanisms to perform their duties at the scene. Table 2 outlines the two groups' responses. Keeping their thoughts on the practical tasks at hand was the most common coping mechanism for both groups, along with the social contact among the workers involved. Helpers tried to shut out feelings and thoughts while working. Mental escape was not a common reaction, neither was humor. Humor was, in addition to trying to prepare oneself mentally and trying to shield oneself

**Table 1.** Voluntary (VH) and Professional Helpers' (PH) Reactions During the Work (%<sup>a</sup>)

	VH (n = 24) (%)	PH (n = 32) (%)
Good cooperation	96	94
Irritation at the media	71	68
Helplessness	67	65
Hopelessness	54	54
Frustration caused by waiting	43	32
Unreality	38	35
Restlessness (worry)	37	13
Tired and exhausted	21	16
Difficult to make decisions	13	10
Concentration-difficulties	21	17
Fear/anxiety	21	4

<sup>a</sup>% denotes those who answered affirmatively in the categories "much" and "very much."

Table 2. Coping Responses in Voluntary and Professional Helpers (%<sup>a</sup>)

	VH <i>n</i> = 19 (%)	PH <i>n</i> = 31 (%)
That you tried to prepare yourself mentally	44	71
Unreality experience while working	79	52
Tried to shut out feelings and thoughts while working	84	70
Used humor to do the work	11	20
Tried to shield oneself from unnecessary impressions	32	33
Tried to concentrate on tasks and not think of the magnitude of the event	68	64
Tried to think of what practical things needed to be done	100	90
Thought that you did the work for somebody (i.e. bereaved)	39	10
Did my job to prevent other's exposure	37	20
Tried to think of other things to create distance	11	10
Told myself that I was trained for this, that I could manage this	38	37
The contact between us while working was important	100	83

<sup>a</sup>% denotes those who answered affirmatively in the categories "much" and "very much."

from unnecessary impressions, the only reaction more common among PH than among VH. Generally VH indicated more use of these mechanisms than PH, but no differences reach statistical significance.

Table 3 shows the two groups' reactions following the disaster. Only "general worry" was significantly higher in VH compared to PH. But for all reactions the percentages were higher in voluntary helpers than in professional helpers. The only reaction evidenced by more than 50% of both groups was the need to be close to loved ones. Many worried about their family as well. Note that many of the helpers had discovered "strengths" in themselves following the disaster work. Many reactions such as crying, sadness, general worry, sleep disturbances, fear of bus travelling, expectations of a new disaster, jumpiness and others, were experienced by more than one fifth of the voluntary helpers, while less than 10% of the professional helpers evidenced most of these reactions.

Helpers were asked to indicate to what degree life had changed its meaning following their work involvement. At one month 48% of the voluntary helpers compared to 22% of the professional helpers scored in the "much" and "very much" categories (22 vs 16% in the "very much" category). At 13 months, the percentages were 66% (61% "much" and 5%

**Table 3.** Voluntary (VH) and Professional Helpers' (PH) Reactions following the Work

	VH ( <i>n</i> = 24) % <sup>a</sup>	PH ( <i>n</i> = 32) % <sup>a</sup>
Need to be close to loved ones	54	52
Discovered strengths in oneself	52	40
Worry about family	51	41
Increased need to be in the company of others	33	6
General worry	33	6 <sup>b</sup>
Sadness	25	12
Afraid of family or oneself travelling by bus	25	10
Crying/wanting to cry	25	9
Difficult to stop talking about event	21	9
Expectations of a new disaster	21	9
Many reactions have not been expressed	21	9
Sleep-disturbances	21	6
More jumpy than usual	21	6
Concentration difficulties	17	16
Family does not understand	16	9

<sup>a</sup>% denotes those who answered affirmatively in the categories "much" and "very much."

<sup>b</sup>A  $\chi^2$  analysis based on all four response categories ("not at all," "a little," "much," and "very much") showed significant differences between the groups:  $\chi^2 = 8.01$ , *df* = 3, *p* < .05.

"very much") and 28% (all in the "much" category) for voluntary and professional helpers respectively ( $\chi^2 = 6.34$ , *p* < .02).

Table 4 depicts the IES mean scores (IES-I, IES-A, and IES-total) for all voluntary and professional helpers who filled in the IES at 1 and 13 months following the disaster, as well as tests of significance between the two groups. At one month the voluntary helpers scored significantly higher than professional helpers on intrusion, avoidance and total score (for *t*-tests see Table 4). At 13 months, however, only the difference in avoidance score was significantly higher in the voluntary group.

To assess the decline in scores from 1 to 13 months, *t*-tests for related samples were conducted on all the 43 subjects who filled in the Impact of Event Scale at both time points. The IES-Intrusion showed a significant decline from 1 to 13 months (*M* 1 month = 9.65, *SD* = 6.58, *M* 13 months = 5.44, *SD* = 5.06, *t* = 3.77, *df* = 42, *p* < .001), as did the IES-Total (*M* 1 month = 15.07, *SD* = 9.39, *M* 13 months = 9.47, *SD* = 7.15, *t* = 3.59, *df* = 42, *p* < .001). The decline in avoidance was nonsignificant.

Using Horowitz' (1982) criteria for low ( $\leq 9$ ), medium ( $>9$ ) and high ( $\geq 19$ ) distress, it was found that 25% of the voluntary helpers fell into the

Table 4. Mean Impact of Event Scale Scores for Voluntary and Professional Helpers.  
*t*-Tests Between Groups

	VH <sup>a</sup>		PH <sup>b</sup>		<i>t</i> <sup>c</sup>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
IES-Intrusion 1 month	12.4	(6.3)	8.3	(6.7)	2.32*
IES-Avoidance 1 month	7.3	(5.2)	4.6	(4.5)	2.08*
IES Total (I+A)	19.7	(9.7)	12.9	(9.8)	2.59**
IES-Intrusion 13 months	5.5	(4.7)	5.2	(5.0)	NS
IES-Avoidance 13 months	5.5	(4.9)	3.0	(3.0)	2.24*
IES Total (I+A)	11.0	(6.3)	8.2	(7.3)	NS

<sup>a</sup>*n* at 1 month = 24, *n* at 13 months = 19.

<sup>b</sup>*n* at 1 month = 32, *n* at 13 months = 31.

<sup>c</sup>*t*-test for independent samples.

\**p* < .05. \*\**p* < .02.

high distress group for intrusion at one month, compared to 13% of the professional helpers. As many as 67% of the voluntary helpers belonged to either the medium or high distress groups, while 44% of the professional helpers did so.

Regarding avoidance, none of the professional helpers and only 8% of the voluntary helpers scored in the high avoidance group at one month, while the great majority of both groups were in the low avoidance category (79% and 72% for voluntary and professional helpers respectively). At 13 months the great majority of both groups scored in the low distress category for intrusion (84% of the VH and 77% of the PH) and for avoidance (79% of the VH and 90% of the PH).

The mean scores on the 20 item version of the General Health Questionnaire showed very low mean scores for both groups, but with professional helpers evidencing significantly higher mean scores than voluntary helpers (*M* = 1.03, *SD* = 3.03 and *M* = 0.53, *SD* = 1.71 respectively, *t* = 2.12, *df* = 49, *p* < .05).

A multiple regression was performed to predict the dependent variables GHQ and IES (Intrusion and Avoidance). The independent variables were: professional status (volunteer or professional), exposure to death, years of experience, experience with major disaster work, and six double interaction variables. To keep the model as simple as possible, triple and larger interactions were not included. The dependent variables were GHQ and IES (intrusion and avoidance).

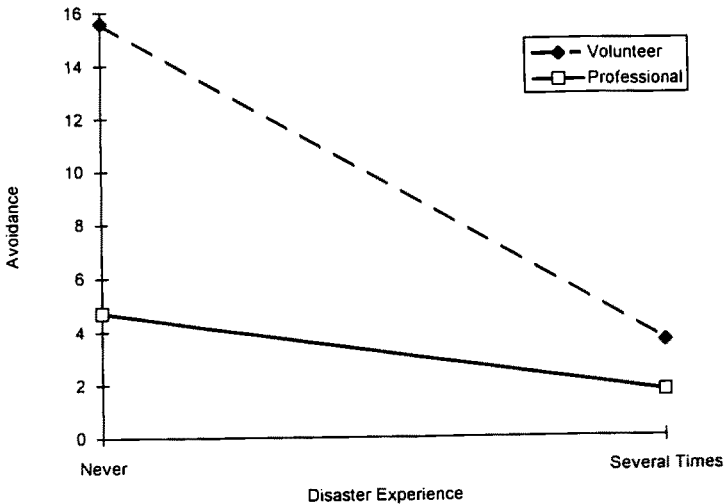


The order of testing was backward stepwise with professional status of the worker as the primary variable. Analysis of covariance was used in testing the contribution of several variables simultaneously.

The results showed no significant contribution on IES-Intrusion and GHQ. The reestimated model for IES-avoidance showed three significant contributions: disaster experience, professional status of the worker, and the interaction between these two variables. The squared multiple correlation was  $R^2 = .32$  ( $p < .001$ ). The beta-weight,  $t$ -values and  $p$ -values were: disaster experience (BETA =  $-1.94$ ,  $t = 2.84$ ,  $p < .01$ ), professional status (BETA =  $-1.66$ ,  $t = 3.00$ ,  $p < .01$ ), and interaction (BETA =  $1.64$ ,  $t = 2.28$ ,  $p < .05$ ).

Based on this model, predicted  $y$ -values were estimated. These values are illustrated in Figure 1. The figure shows that the relation between disaster experience and avoidance was stronger for volunteers than for professionals. Volunteers with little disaster experience had the highest avoidance scores while the professional helpers who had experienced disaster work several times had the lowest score.

It is important to note that the multiple regression is based on a limited distribution on the variable disaster experience for the volunteers. None of the volunteers scored 1 on this variable. This implies that the predicted score for this group is based on data from the scores 2, 3, and 4.

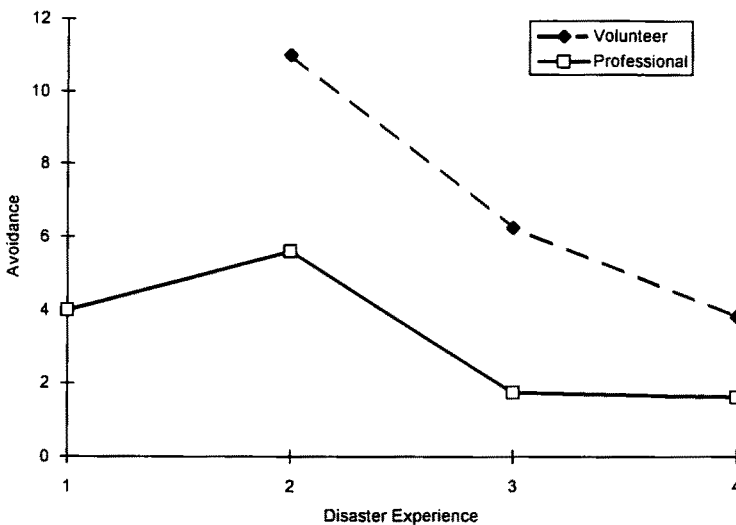


**Figure 1.** The relation between estimated IES-Avoidance scores, professional status, disaster experience, and the interaction between status and experience.

This may have made the conclusions from the regression uncertain, and to uncover this, we used analysis of variance with planned comparison. The mean values for the disaster group at the four points were: for professionals (4.0, 5.6, 1.8, and 1.6) and for volunteers (missing, 11.0, 6.3, and 3.8). The plot of means is shown in Figure 2. The main effect of disaster experience ( $F = 4.75, p < .01$ ) and professional status ( $F = 9.84, p < .01$ ) was significant. Analysis showed significant difference between the two groups at disaster experience = 2 ( $F = 4.35, p < .05$ ), but not at the point = 3 ( $F = 3.22, p > .05$ ) and point = 4 ( $F = 2.44, p > .05$ ). No interaction showed significance in this model when planned comparison was used.

### Discussion

The results of this study show that voluntary and professional helpers experience the same kind of reactions during and after the involvement in disaster work. The magnitude of reactions was somewhat higher among voluntary than professional workers, but both groups agreed on the most frequent reactions to such work. The voluntary helpers reported significantly more intrusion and avoidance at 1 month, and for avoidance the voluntary helpers still evidenced a significantly higher score at 13 months.



**Figure 2.** The relation between IES-Avoidance scores, professional status and disaster experience.

For all helpers taken together, the decline in IES-intrusion and IES-total scores was significant from 1 to 13 months. Many helpers in both groups scored in the medium or high distress categories on intrusion at 1 month, according to Horowitz' (1982) criteria, while the majority of both groups of helpers scored in the low avoidance category. The great majority of both groups scored in the low distress categories for both intrusion and avoidance at 13 months. The GHQ scores at 13 months reflected that the long-term negative impact of the event was low. However, professional helpers reported significantly higher GHQ scores than voluntary helpers.

Although the differences in reactions between voluntary and professional helpers were most obvious concerning the IES scores, there was a clear trend toward more reactions in voluntary helpers in both on-scene and after-reactions. The voluntary helpers had used more of the different coping strategies to regulate their reactions. The differences in reacting could not be attributed to performing different tasks during the disaster involvement, although voluntary helpers had been more involved in transporting the dead than the professional helpers. However, although the helper groups were equal in age, the professional helpers had longer experience as helpers, as well as more previous experience from large-scale accidents and disaster. The present results are in line with Erslund et al. (1989), who also reported more stress reactions in nonprofessional than professional rescuers involved in rescue at sea. The professional helpers seem to benefit from their day to day experience with a multitude of crisis situations, as well as their more rigorous training.

Significantly more VH experienced difficulty talking about their experiences and reactions following the disaster than PH. PH are among colleagues during their daily work, while VH carry out work alongside people not involved in such work. PH spend their working time with colleagues who took part in the disaster work, understand the impact such an event may have on one's life, and who may be more open for discussion and understanding of various aspects of the experience, than the work colleagues of voluntary helpers who did not participate in the disaster work. The opportunity to discuss facts and reactions with one's work colleagues may represent a source of social support that favor professional helpers and account for the group differences. Social support has been found beneficial for disaster workers following disaster situations (McCarroll, Ursano, Wright, & Fullerton, 1993).

From the answers to the coping statements there is little indication that the professional helpers used more heavy denial or more active cognitive or behavioral measures to sustain their tasks. On the contrary, voluntary helpers indicated more use of these measures than professional

helpers. This may be expected as the distress level in voluntary helpers were higher than in professionals.

It is evident that a disaster with many children involved, what many helpers view as the "worst case scenario," led to feelings of helplessness and hopelessness among a majority of all helpers, reactions often evidenced in other studies (Fullerton, McCarroll, Ursano, & Wright, 1992; Raphael, Singh, Bradbury, & Lambert, 1983-84). Voluntary helpers were somewhat more in doubt about what to do during the work than professional helpers. Role confusion can be a significant stressor in helpers, especially when they have to deal with survivors and bereaved (Bartone, Ursano, Wright, & Ingraham, 1989; Raphael et al., 1983-84).

Many rescuers reacted negatively toward the press, and found media people at the scene very intrusive with a lack of respect for the victims involved, as well as interfering with the rescuer's tasks. Media personnel have been reported to interfere with the disaster work in previous disasters (Lammens & Hodgkinson, 1990), and this is clearly an area in need of more attention.

The groups used similar coping mechanisms to handle the event. Besides concentrating and thinking about rescue activities to promote emotional distancing, they used deliberate cognitive efforts to keep from thinking about the human consequences of the event. Typical self-protective strategies were self-enhancing comments, active suppression of thoughts, and refraining from exposure to upsetting impressions. Although insignificant, there was a tendency for voluntary helpers to report more frequent use of these reactions than professional helpers. Humor was used somewhat more among professional helpers, but was surprisingly infrequent in both groups. In other studies (Alexander & Wells, 1990; Hetherington & Guppy, 1990) humor was reported as a common strategy. The presence of children may inhibit or suppress the use of this otherwise normal and helpful method.

The after-reactions reflecting increased vulnerability were common in both groups. The need to be close to loved ones, the worry about one's family, the general worry, and being afraid when someone close or oneself is travelling by bus, indicated that the illusion of invulnerability (Janoff-Bulman, 1992) was lost, and life for a period became more uncertain and unpredictable. Interestingly, this vulnerability was paralleled by the discovery of strong aspects in oneself. This was most evident in voluntary helpers, as were most of the "vulnerability" reactions. One might speculate whether this reflected an increased sensitivity to both the outer and inner world.

It is interesting to note that it was predominantly the voluntary helpers who indicated that life had changed its meaning following the disaster. Two thirds of the voluntary helpers still acknowledged this more than a year

following the disaster work, although the intensity was reduced (evidenced by fewer scores in the "very much" category and more in the "much" category). The helpers' comments on the questionnaire and during the debriefing sessions indicated that many helpers had come to a greater sense of appreciation and care for their loved ones, they appreciated life itself more, felt that life was more intense, and they felt awe at people's strength. Several authors have noted that survivors/victims change their outlook on life following trauma (Joseph, Williams, & Yule, 1993; Lyons, 1991). Our results indicate that helpers experience a similar positive change, as other studies have shown (Andersen, Christensen, & Petersen, 1991; Raphael et al., 1983-84).

The IES scores were significantly higher among the voluntary helpers than the professional helpers 1 month following the disaster, and avoidance scores continued to be significantly higher among voluntary helpers at 13 months. It is tempting to ascribe the differences between the groups to the difference in both general experience and experience from disaster situations. The regression analysis showed that the relation between disaster experience and avoidance was stronger for volunteers than professionals. Voluntary helpers with little experience evidenced the highest avoidance scores. Different recruitment history in the two groups, and factors such as hardiness, a personality factor found to discriminate those who cope well from those who cope less well in disaster work (Bartone et al., 1989) may also explain the observed differences. Unfortunately, measures on the helper's personality were not used in this study.

It is difficult to compare the IES scores obtained in this study with previous studies, as the time elapsed between data collection and event varies greatly in the different studies. However, a crude comparison indicates that scores among the professional helpers were comparable to scores from other groups of helpers in studies where the IES has been used (see Alexander & Wells, 1991; Andersen et al., 1991; McFarlane, 1989; Thompson & Solomon, 1991). In general, the mean scores do not indicate high levels of intrusion either at 1 or 13 months, with the exception of voluntary helpers' mean score for intrusion at 1 month. This score reflected medium levels of distress.

Although both professional and voluntary helpers evidenced low scores on the General Health Questionnaire (recommended cut off score is between 3 and 4, for the GHQ 20 item version), the professional helpers' score was significantly higher than the voluntary helper's score. The scale concerns itself with the inability to continue to carry out one's normal "healthy" functions, and the appearance of new phenomena of a distressing nature (Goldberg, 1978). The higher GHQ scores in professional helpers compared to voluntary helpers may reflect the general stressful nature of

the work situation of professional helpers, where they have to deal with a variety of day to day stressors involved in caring for others (Grigsby & McKnew, 1988; Violanti & Aron, 1993), more than it reflects reactions to acute traumatic stressors.

Good cooperation among the helpers, the utilization of various coping measures, as well as good debriefing routines are viable explanations for the low levels of distress, as the event itself was indeed a highly stressful one. Most helpers held the follow-up routines instigated following the disaster in high regard, and felt that their needs had been addressed appropriately.

Both groups of helpers had performed their tasks successfully, seemed to have recovered fairly soon, and many had been able to gain from their experience. There was little evidence to indicate that the distress experienced following the disaster has led to any increase in psychiatric morbidity.

There were some noticeable limitations to the study. The response rate was not optimal with a decline in responders over time. Sparse information about the nonresponders made it impossible to determine whether they were more affected than the responders. Unfortunately, the number of professional and voluntary helpers was too low to allow looking at subgroups within the two main groups.

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