

Secondary Disaster Victims: The Emotional Effects of Recovering and Identifying Human Remains

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The author conducted a questionnaire survey of the 592 U.S. Air Force personnel involved in transporting and identifying the bodies of the almost 1,000 persons who died in Jonestown, Guyana; 225 (38%) of the personnel involved returned the questionnaire, as well as 76 (22%) of 352 individuals who were not involved in the operation. The Guyana respondents reported significantly more short-term dysphoria, which was more pronounced in those younger than 25 years of age, those who were black, those who were enlisted men rather than officers, and those with more exposure to the bodies. The author discusses the implications of these findings in planning future disaster relief programs.

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A tragic series of events began when a U.S. Congressman was killed at an airport in Guyana by a group of religious cult members in November 1978. Shortly after the shooting came the shocking news of mass suicide by members of the People's Temple at Jonestown. Military men and women worked to recover and identify the bodies of these people; their activities varied greatly in duration and in degree of exposure to the human remains. Some workers helped remove the bodies from Jonestown, placing them in waterproof canvas bags. (It is difficult to convey to someone who has not had first-hand experience what a week in a tropical climate can do human remains. The changes in color and size, the infestation by

various insects, and above all the overpowering and unforgettable odor of just *one* body are beyond imagination.) Helicopter crews flew the bodies to the airfield, where they were placed in casket-like metal containers. Airport workers helped the aircraft loadmasters place the containers on transport aircraft, which carried them to Dover Air Force Base, Delaware, where they were stored in morgue facilities while awaiting identification, a process performed by medical and dental officers and technicians. The body containers were washed and prepared for reuse.

In general, aircrew members who transported the remains were not volunteers; neither were some of the ancillary personnel. The work of moving the remains, cleaning the containers, and performing the identification processes was performed by volunteers, who were allowed to stop whenever they felt that they had had enough. The recovery phase took about 5 days; the identification process continued for about a month. Some people involved had worked with human remains under other circumstances; a great many had not. Thus the group of subjects varied in its composition, not only in the usual demographic characteristics but also in the duration and intensity of their exposure to the remains, in previous training and experience, and in volunteer status. The condition of the bodies has already been mentioned; the emotional impact was heightened by the fact that several hundred children were involved. Exact numbers are not available to me, but the mix of male and female bodies appears to have been approximately even; the majority of the victims were black.

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BACKGROUND

Both civil and military agencies may become involved in recovering, stabilizing, and evacuating victims of natural and man-made disasters. Police, firefighters, medical and paramedical personnel, investigators, crews of ambulances and helicopters, and others may respond to earthquakes, tornadoes, hurricanes, floods, aircraft accidents, terrorist activities, or situations of frank combat, both to rescue living victims and to recover the remains of those who have perished. An extensive review of the medical literature on disaster response, as well as a summary review of the more extensive sociological literature on this subject, yielded

little information concerning the emotional effects seen in rescuers of live victims and almost nothing about the effects of recovering and identifying the dead. What data were available generally touched on one of three topics:

1. When local organizations respond to a disaster, an immediate conflict may arise between responsibility to duty and loyalty to home and family. This conflict may be especially marked in members of the helping professions (1-4).

2. The psychological attitude of rescuers and medical personnel can have a direct effect on the subsequent mental attitudes of the survivors (5-8).

3. Rescuers or other helping professionals may experience subsequent emotional effects, although this is not usually mentioned. Davidson (7) reported that 30 of some 150 police officers involved in the aftermath of an airliner crash received psychological treatment for their posttraumatic stress symptoms. Lifton (8) wrote that, even at a temporal distance from the bombing of Hiroshima, his work with the survivors left him emotionally drained and spent.

In another sense, he commented on the

selective form of numbing, of the kind that surgeons and rescuers always have when they confront disaster. That is, you cannot permit yourself to feel every experience of pain around you because you must perform a constructive function that is professional and professionalized, except that you're not overwhelmed by the numbing itself and incapacitated. (2, p. 68)

Wallace (9), in reviewing 10,000 references to disaster in the literature up to 1956, concluded that rescuers can be effectively swamped and thus may choose an overintellectualized approach to maintain their emotional defenses. In Laube's study (3), a nurse commented, "I wouldn't let the patients see that I was frightened" and said that she therefore was able to keep herself calmer than she would have in other circumstances.

This reaction can also include an overwhelming sense of urgency, with a concurrent tendency to regress to an ineffective means of treatment, exemplified by physicians who unwisely suture minor wounds under unsterile conditions (10). Rayner (11) wrote of acting on a "reflexive" level, leading to "intensification of only one task and, hence, narrowing of awareness, which results in blocks to information required for organization and logical functioning."

Few follow-up emotional data have been gathered on rescuers and helpers. Laube (3) and Rayner (11) both commented that the nurses whom they interviewed seemed to welcome the opportunity to discuss their experiences, and Rayner mentioned that the nurses interviewed soon after a disaster seemed more verbal than those interviewed later. Perhaps the interviews themselves were therapeutic, offering a chance for ventilation and even abreaction of the emotionally charged experience, hitherto denied and intellectualized, before it was further repressed.

METHOD

This paper reports information from a questionnaire sent to U.S. Air Force personnel who had been involved with recovering, transporting, handling, and identifying the bodies of men, women, and children who died at Jonestown, Guyana, on November 18, 1978. The questionnaire (available on request) was designed to provide a self-assessment of the emotional effects this experience had on them at the time, as well as their emotional status some 8 months later, during the summer of 1979, when the subjects received the questionnaire. Physicians at the bases involved distributed and collected the questionnaires. We obtained demographic data on age, sex, ethnic background, military rank, marital status, education, and service career field. Inquiry was made into whether the subject was "living with a partner" in November 1978 and at the time of the survey; this term was chosen to cover a variety of living arrangements. Respondents rated themselves on their emotional status as of October 1978, the month before the Guyana deaths. Concerning work with Guyana victims, subjects were asked if they worked at their usual Air Force job on the Guyana assignment, if they volunteered for this work, and the location at which the work was done. They were asked to estimate the amount of their contact with the remains, based on a range of exposure from "saw body containers—no odor" through "handled body bags" or "handled bodies directly," with additional estimates of the number of bodies and the duration of contact.

The next questions dealt with any previous experience with human bodies or living accident victims and with any formal training or work in related fields. These were followed by a request for self-assessment of emotions as of December 15, 1978. This date was picked as the end of the identification phase of the assignment. The same format was used as for October 1978.

Respondents were asked if they had sought any emotional support since their Guyana experience and, if so, from what source. They were asked to rate emotional or moral support received from official U.S. Air Force sources and from their co-workers, and to rate the adequacy of the total support available.

Finally, subjects assessed their emotional status as of the day they filled out the questionnaire, again using the scale used for the October and December 1978 estimates. This was followed by three essay questions asking for comments on any self-perceived personal changes, whether these changes were due to the Guyana experience or some other factor, and if the subject had any other comments or ideas on the emotional support for people doing this sort of work in the future.

A control questionnaire (available on request) was designed for use with Air Force personnel who were matched by rank and Air Force occupation but who did not participate in the recovery and identification of

the Guyana victims. It was almost identical to the first questionnaire, except that instead of inquiring about the Guyana project, the control questionnaire asked about any experience with human remains during the period in question. These two questionnaires will be referred to as the Guyana questionnaire and the control questionnaire.

Comparisons between respondents to the two questionnaires were tested for statistical significance by using the chi-square test ($df=1$ unless indicated otherwise).

RESULTS

Usable questionnaires were returned by 225 (38%) of 592 Guyana participants and by 76 (22%) of 352 control subjects. As is common in such surveys, we do not know what bias is involved in any differences between those who returned their questionnaires and those who chose not to. Twelve of the respondents to the Guyana questionnaire and four to the control questionnaire were women, and seven male respondents to the Guyana questionnaire and four to the control questionnaire were of races other than black and white. We eliminated these small samples, thus limiting the statistical analysis only to black and white men: 206 respondents to the Guyana questionnaire and 68 to the control questionnaire. Throughout this analysis, the total counts will usually be somewhat short of these numbers because of missing data for various responses on some questionnaires.

To measure the emotional effect of the Guyana experience on each respondent, we used the three emotional self-assessment questions. In essence, these questions asked, respectively, How did you feel before the Guyana experience? How did you feel 1 month after (when the work with the remains was finished)? How do you feel now (8–12 months later)? For each of these questions, the respondent rated himself from 1 (low) to 5 (high) on physical health, happiness, quality of sleep, appetite, energy level, social relations, and job performance. We computed a global score for each respondent in these time frames by summing the answers; the lowest possible score was 7 and the highest was 35. We then computed global short-term score differences (“after” minus “before”) to represent the short-term emotional effects. We repeated the process for long-term effects (“now” minus “before”). We defined any algebraically negative difference as “dysphoria,” representing a negative change in emotional status following the Guyana experience. No difference represented no change, and a positive difference represented an improvement.

Overall, 32% (63 of 200) of the Guyana respondents experienced short-term dysphoria, compared with only 9% (6 of 67) of the control respondents. These results differ statistically ($p<.001$). On a long-term basis, 21% (43 of 201) of the Guyana respondents and 17% (11 of 66) of the control respondents

reported dysphoria, results not significantly different at the .05 level. Assuming that our samples were not a biased portion of the populations (recall the high percentage of nonresponders), we concluded that the Guyana experience had a short-term dysphoric effect on a significant number of participants, but we found no statistical evidence that this effect was sustained.

We compared rates of short-term dysphoria for each age group, for each race, for officers and enlisted men, for each educational level, for married and unmarried men, and for various levels of training and experience. In each instance the Guyana respondents had a higher rate of dysphoria than the equivalent control respondents, although not always at significant levels. No demographic subgroup of control respondents exceeded a short-term dysphoric rate of 12%.

Was this short-term dysphoric effect among the Guyana respondents seen regardless of external factors, or was it greater in some subgroup? We identified 10 factors we felt most likely to be pertinent: age, race, living with a partner (marital or other), rank, education, training or experience, volunteer versus nonvolunteer status, exposure to remains, emotional support (Air Force or other channels), and the perceived adequacy of that support. We tested each of these factors independently for its relationship to dysphoria as we had previously defined it. Significantly higher rates of short-term dysphoria were found among respondents younger than 25 years of age than among those older (45% versus 24%, $p<.005$, $df=2$), black respondents compared with white (50% versus 28%, $p<.025$), enlisted respondents compared with officers (36% versus 21%, $p<.05$), those with greater exposure to remains (36% versus 7%, $p<.005$, $df=2$), those who perceived (or sought) much emotional support (47% versus 25%, $p<.01$, $df=2$), and those who perceived their emotional support to be inadequate (54% versus 28%, $p<.005$). The first three factors associated with dysphoria are demographic; the last three are subjective and experiential. For the sake of comparison, we reviewed the same factors in the long-term respondents and found higher rates only among those reporting greater exposure to remains (25% versus 3%, $p<.025$, $df=2$) and those perceiving their emotional support to have been inadequate (35% versus 19%, $p<.05$).

Since the dysphoria might have been associated with factors interacting with each other or with all factors, we tested each possible pair by an analysis of categorical data using log linear models. This analysis changed two findings:

1. The greater rate of dysphoria seen in enlisted personnel appears to be due to two external factors. First, the enlisted men were younger: 45% (64 of 142) of the enlisted men were 25 or younger, compared with 19% (11 of 58) of the officers. Second, 92% (130 of 142) of the enlisted men were exposed directly to the remains, compared with 69% (40 of 58) of the officers. Many of the officers on flight crews reported that they never went back in their aircraft to look at the body containers. When corrected for the two

factors of age and exposure to remains, the statistically significant differences in dysphoria between officers and enlisted men disappear.

2. Although we had supposed that training and/or previous experience would protect individuals from the dysphoric effects of dealing with human remains, there was only a nonsignificant difference in the rates of dysphoria in those with no training or experience, those with either training or experience, or those with both (36%, 33%, and 15%, respectively, $p < .10$, $df = 2$). Adjusting for other factors showed that this difference became significant only in the case of those who worked with many remains over a protracted period. Interestingly, there was also no significant difference in the dysphoria rates in nonvolunteers and volunteers, even when adjusted for exposure (24% versus 38%, $p < .10$).

DISCUSSION

Using a retrospective questionnaire to assess emotional status has distinct disadvantages. There may have been inherent inaccuracies of self-assessment, selection factors in those who chose to respond and not to respond, and vagaries of memory. Unfortunately, limitations of staff and budget prevented face-to-face interviews or the administration of standardized psychological tests of stress response and emotional status. Nevertheless, valuable information has been obtained concerning a little-studied aspect of human stress.

Some of the results were as one might predict, and some were surprising. Youth, inexperience, lower rank, and degree of exposure all were associated with more emotional stress and tended to interrelate. The increased dysphoria in the black personnel involved may have been a cultural manifestation having to do with a greater awareness (less denial) of the emotional impact, or it may have been due to a greater identification with the predominantly black victims. Leonard Johnson (personal communication) suggested that these personnel may also have been feeling anger at their perception of the betrayal of the black victims by their white leader. The lack of difference in emotional effects on volunteer and nonvolunteer personnel was somewhat surprising; this held true regardless of correction for other factors. Similarly, there was no significant difference in the emotional effects reported by those who were living with a spouse or partner during the Guyana experience and by those who were not. The group support experienced during the stressful period apparently substituted for marital support.

The subjective comments made by respondents did not lend themselves to grouping or to statistical analysis. Many comments reflected anger, some directed at the victims: "You can't look at the people in Jonestown as people who didn't want to die. It was their choice." "At first the magnitude of the operation prohibited me from realizing they were really humans

instead of, frankly, just slabs." "I can understand a humanitarian effort, but not for a bunch of fanatics who denounced their own country to be there in the first place."

Others directed their anger at the Air Force: "I think the mission was repulsive and nonmilitary. If the USA intends to accomplish such a mission in the future, compensate military members accordingly." Still others attacked the organization of the effort and the rewards for it: "I feel that Maint[enance] personnel should not be expected or required to pull Grave Registration duties" (from a volunteer who handled body containers). "I was appalled by the politics of trying to get those bodies buried—they were looked on as so much trash." "All of us worked very hard but when it was all over with they did not treat everyone equal." "I felt a certain comradeship [sic] with other members of my shift. We worked hard together—but were not recognized in full—only a certain percentage were *allowed* to be given decorations."

Many referred to the bodies of the children as evoking the strongest emotional response: "Yes, seeing the decomposed bodies of the *children* put an extreme emotional stress on me, for about 3–4 days, after which I was OK!" "It was quite a shock to see three or four babies in a bag." "The bodies of the children were of innocent victims and it shouldn't have been that way." "I think what touched me most was the sight of the infants; they never had any say-so in the matter." "Can't sleep. Cannot get the small children out of my mind."

Some spoke of the entire experience as leading to personal growth, one that was beneficial and might be repeated if necessary: "Long-lasting friends have sprung from this incident." "I have tried . . . to improve my life and enjoy it. Seeing all those people dead makes you realize your mortality." "I got the feeling I was contributing." "This experience has given me a more adult look on life." "I matured a great deal." "I feel and felt then that I was a kind of hero." "I take life more serious." "I've devoted my future to living life better. . . . You've got to give a damn." "I had never experienced death before this incident. It made me aware of how beautiful life is. And, how ugly death can be."

Group support and humor were both mentioned as valuable in supporting each other through the stress: "At one time about 15 of us got together prior to going home and discussed how we felt and many seemed relieved to find out others were having trouble sleeping, etc." "The Air Force members seemed to work more as a group of friends toward a common goal." "To tell the truth, the only way me and my friends found to keep one sane was to joke around so much and to keep laughing, even if it meant making fun of bodies." "Perhaps it's like tension in the O.R. [operating room]; a joke, good or bad, breaks the tension, and takes people's minds off of what they are doing. During the Jonestown detail the grosser the joke, the better. . . . I think the chaplains did a good job in

lending their support, but beyond that we received our emotional and morale support from each other.” “[We] require a great deal of moral support from Supervisors, Commanders, and Family. Personnel working with the remains tend to make what would normally be distasteful jokes . . . about the remains.” “These people went above and beyond their duty, and I am proud to have worked with them.”

RECOMMENDATIONS

Rescuers usually work only briefly with living victims. The rescuers' work in this situation, as in previous mass deaths from aircraft disasters, was prolonged. When similar situations arise again, those responsible for furnishing and assigning personnel should use older, experienced people whenever possible. Younger people should be paired with older ones. Rotation of jobs may be desirable. Careful attention should be paid to day-by-day emotional support, perhaps in a group discussion setting, by mental health professionals. There is real value, especially for young men, in understanding that others feel the same strong emotions under such circumstances, that each is not alone in the strength of his shock, grief, and anger. The use of humor as a coping mechanism in situations of extreme stress (combat, surgery, disasters) is well known. Similarly, a feeling of group participation in a worthy cause can give meaning to otherwise intolerable situations. Altruism, working for a greater good, is a strong and mature coping skill (12).

Certainly, such a project should have a formal termination for individuals or for the whole group. Recognition by valued authority is a powerful antidote for perceived suffering, as we are now learning from our Vietnam veterans. Judicious, equitable distribution of awards, decorations, and certificates is important. A sensitive debriefing for those involved in such an undertaking may defuse future emotional effects. Necessary follow-up care may be given, using the crisis intervention model (13, 14). I strongly suggest that

operational plans for dealing with future mass casualty situations include specific provisions for mental health professionals to monitor those involved as rescuers as well as the victims and to provide nonthreatening group opportunities for emotional support.

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