

January 1987

Psychosocial impact of disaster

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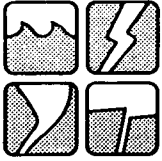
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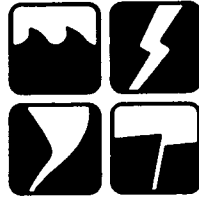
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PSYCHOSOCIAL IMPACT OF DISASTER:
THE BALDWIN HILLS FIRE

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1987

Quick Response Research Report #08



This publication is part of the Natural Hazards
Research & Applications Information Center's ongoing
Quick Response Research Report Series.
<http://www.colorado.edu/hazards>

This study was supported by a grant from the
National Science Foundation and the Natural Hazards
Research Center.

The authors gratefully acknowledge the assistance of
The Public Health Foundation of Los Angeles County, Inc.
and these City of Los Angeles leaders whose cooperation
made this study possible:

Tom Bradley, Mayor, City of Los Angeles

Pat Russell, President of the City Council, City of Los Angeles

1. THE EVENT

On July 18, 1985, the City of Los Angeles was declared a Federal Disaster Area as a result of the fires in Baldwin Hills in which approximately 50 homes were totally destroyed. At the time the Federal Emergency Declaration was made, the threat of more widespread damage was still very great. The population of Baldwin Hills is predominantly middle to upper income Black families. The targeted sample population for this study included those whose homes were totally destroyed and those whose homes were left intact with perhaps some fire or smoke damage. According to Federal Emergency Management Agency reports, 147 families registered for assistance at the Disaster Assistance Center. The Center closed after two weeks of field operations.

Follow up interviews were conducted with the Red Cross and with other emergency agencies prior to the inception of the study. Red Cross spokespersons provided these statistics: 50 homes were destroyed; 2 shelters were opened; 38 people were provided overnight shelter; 200 received assistance on the first day alone; 1960 individual victims received mass care during a 2-week period; 108 families received help from the Red Cross, 101 of whom were homeowners; 975 inquiries for information were received; 4 received rental assistance; 49 children were reported at the Red Cross shelters.

2. METHODOLOGY

A. Instruments:

The major instrument used in this study is the Disaster Supplement to the National Institute of Mental Health Diagnostic Interview Schedule (DIS/DS). It was modified for use in this project to

specifically document reactions by our respondents to the Baldwin Hills fire. This instrument includes several diagnostic sections of the Diagnostic Interview Schedule (Robins, Helyer, et al, 1981), including post-traumatic stress disorder, dysthymic disorder, sexual dysfunction, obsessive-compulsive disorder, somatization disorder, and major depressive disorder, as well as questions relating to previous life events, health, mental health and social service utilization, coping, social networks, and social support resources. There are also a variety of other questions relating to opinions about the media coverage of the event, responsibility for the event, and personal and community harm caused by the event. After each interview, the DIS/DS form was checked by the interviewer for completeness. A detailed description of the respondent's location at the time of the fire, what was witnessed, and the losses sustained was recorded for each case. Interviews took place in a variety of settings. For those whose homes were destroyed, the interview was conducted at their temporary residences, including the homes of friends or relatives, hotels and rented apartments. In addition, the Impact of Event Scale (Horowitz et al, 1979; Zilberg et al, 1982), a 15 item self-report scale for measuring subjective stress due to a catastrophic event, was also completed by each respondent. For those items experienced, ratings are made for frequency (rarely, sometimes, often). The scale yields a total subjective stress score and two subscores relating to intrusion and avoidance.

B. Interviewers and Interviewer Training:

Two interviewers, both Black research associates at UCLA, who had been fully trained by the Los Angeles Epidemiologic Catchment Area Project (Hough Karno et al, 1983) and experienced in the administration of the DIS conducted all field interviews. Special training was provided for administering the Disaster Supplement to the DIS. The training included mock interviews and practice sessions to make the interviewers familiar with this instrument.

C. Recruitment of Subjects:

A list of victims of the Baldwin Hills fire was compiled from public agencies and newspaper reports. The initial contact was made by mail describing the project. Mail to individuals who had lost their homes in the fire was forwarded by the Post Office. The letter explained the purposes of the study. It included a form to be returned, or phone number to be called, if an individual wished to volunteer to participate. Those who responded were contacted by phone to arrange for an interview. Before each interview, the informed consent form was discussed, and consent was obtained. All interviews were conducted between two and four months after the fire.

3. RESULTS

A. Sociodemographic Characteristics

The study population consisted of 25 individuals, most of whom responded to the mailing. Others were contacted by referral by those interviewed. All of the respondents were Black homeowners,

with a mean age of 57 years. We interviewed 14 women and 11 men. The educational level of this group averaged 15.6 years with 48% having completed 17 years of education; households averaged 2.7 members; the employment status of the sample consisted of employed persons (56%), retirees (12%), homemakers (8%), part-time employed persons (20%), and others (4%). The sample represents a residentially stable population with a mean length of residence of 15 years.

B. Post Traumatic Stress Symptoms

Table I presents a rank ordering of the frequency of post-traumatic stress symptoms for the sample as measured by the DIS/DS. These symptoms were reported as occurring within the four months following the fire.

TABLE I

Rank Ordering of Post-Traumatic Stress Symptoms
For the Total Sample (N = 25)

<u>Symptoms</u>	<u>Percent</u>
Trouble Sleeping	32
Jumpiness, Easily Startled	24
Avoidance of Reminders	16
Trouble Concentrating	12
Nightmares, Dreams, Remembering	12
Re-Experiencing Event	8
Interpersonal Distance	4
Ashamed of Being Alive	0

C. Depressive Symptoms

Table II presents a rank ordering of depressive symptoms, as measured by the DIS/DS. These symptoms were reported as having occurred within the 4 months since the fire.

TABLE II

Rank Ordering of Depressive Symptoms
For the Total Sample (N = 25)

<u>Symptoms</u>	<u>Percent</u>
Trouble Sleeping	40
Trouble Concentrating	20
Loss of Appetite	20
Feeling Tired All the Time	20
Feeling Restless	16
Thoughts Coming More Slowly	16
Moving All the Time	12
Gaining Weight	12
Talking of Moving More Slowly	12
Feeling Depressed	8
Loss of Weight	8
Sleeping Too Much	4
Loss of Interest in Sex	0
Feeling Worthless, Sinful, Guilty	0
Thoughts About Death	0
Wanting to Die	0
Thoughts of Suicide	0
Attempted Suicide	0

D. The Impact of Event Scale

Table III presents a rank ordering of mean scores for the Impact of Event Scale for the subjects. The instrument is scored on a Likert Scale with "rarely" weighted 1, and "often" weighted 4.

TABLE III

Rank Ordering of Mean Scores for Impact of
Event Scale Items (N = 25)

<u>Item</u>	
Other things kept making me think about it.	2.72
I thought about it when I didn't mean to.	2.52
I had waves of strong feelings about it.	2.48
Pictures about it popped into my mind.	2.48
Any reminder brought back feelings about it.	2.38
I avoided letting myself get upset even when	
I thought about it or was reminded of it.	2.36
I tried to remove it from memory.	2.32
I had trouble falling asleep or staying asleep.	2.32

I tried not to think about it.	2.24
My feelings about it were kind of numb.	2.20
I was aware that I still had a lot of feelings about it, but didn't deal with them.	1.96
I felt as if it hadn't happened or it wasn't real.	1.87
I stayed away from reminders about it.	1.76
I had dreams about it.	1.72
I tried not to talk about it.	1.68

The mean score on the Impact of Events Scale for this sample was 33.04, with a range of 15-54.

E. Selected Psychosocial Responses

Additional findings pertaining to selected items that were included from the DIS/DS were:

1) Media Coverage:

In response to the question "What did you think of the news coverage of the event?", 16% of the sample felt that there had not been enough publicity about the fire as compared with 76% who felt there had been the right amount. Four percent felt there had been too much coverage. In regard to how the media reported the event, 52% felt the media was sympathetic to the victims and 48% had no opinion or were mixed in their feelings.

2) Blame:

In regard to the questions about who was to blame for the fire, 76% of the sample attributed blame to a local university which owned the adjacent land where the fire started. In addition, 56% felt that the city was also responsible. Eight percent felt that the Fire Department was

to blame for the fire. In contrast, only 12% blamed the arsonist alone.

3) Effects of the Community:

Ninety-two percent of the sample felt that their community had sustained a great deal of harm and 100% felt that the community was not back to normal up to 4 months after the fire when they were interviewed.

4) Financial Help:

Questions were asked about help received from public and private agencies. Thirty-six of the sample felt that needing financial help or help with clothing was embarrassing to people in their community.

Fifty-two percent had received financial help from private insurance and 12% from the Small Business Administration. Sixty-four had received some financial compensation for their losses. Seventy-two percent of the sampling reported receiving help from Red Cross, 16% received assistance from other public agencies.

In terms of financial compensation, 48% felt that the victims of the fire were not receiving as much financial compensation as they deserved, 24% felt they were receiving the right amount. The remaining 28% were equivocal. No one expressed the view that too much financial assistance was given.

5) Medication:

Forty percent of the sample reported taking medication because of being upset by the fire. No one reported the use of alcohol for this purpose. Forty-four percent said that they sought help from a doctor, other health professional, or a counselor because of being upset by the fire. Fifty-two percent sought help from family or friends.

6) Personal and Household Harm

Sixty-four percent rated their household as having sustained a great deal of harm from the fire. Sixty percent felt that their household had not recovered from the effects of the fire. In regard to the questions of personal health problems caused by the fire, 36% of the sample reported experiencing stress as a result of the fire, 12% suffered a fall, 12% reported fire related physical injuries including burns and smoke inhalation, and 8% reported gaining weight.

7) Comparison of Subjects by Exposure to the Event

Two groups were formed from our sample on the basis of exposure to the event, i.e., those who were in the area when the fire occurred and who witnessed the fire (40%), and those who were out of the area (60%). These two groups do not differ significantly in sociodemographic makeup. We compared these groups in relation to the mean number of post-traumatic symptoms reported. Table IV presents the results of this comparison.

TABLE IV

Mean Number of Post-Traumatic
Stress Symptoms by Exposure to Event (N = 24)

<u>Group</u>		<u>Mean</u>	<u>SD</u>
In Area	(N= 9)	2.6	2.4
Not in Area	(N=15)	0.2	0.7

(t=3.55, df=22, p<.01)

Those individuals who witnessed the fire reported significantly more post-traumatic stress symptoms than those who did not. A similar comparison of these groups regarding mean number of depressive symptoms did not reveal any statistically significant differences. Thus, exposure was found to be strongly related to post-traumatic stress symptoms and not to depressive symptoms.

Table V shows the percentages of the sample reporting specific post traumatic stress symptoms according to their exposure to the event, i.e., individuals in the area and those not present in the area during the fire.

TABLE V

Post Traumatic Stress Symptoms
Related to Presence in Area (N = 24)

	<u>In Area</u> (9)	Not <u>In Area</u> (15)
Trouble Sleeping	66.7	6.7
Jumpiness, Easily Startled	55.6	6.7
Avoidance of Reminders	44.4	0.0
Nightmares, Dreams, Remembering	33.3	0.0
Re-Experiencing Event	25.0	0.0
Trouble Concentrating	22.2	6.7
Distant	11.0	0.0
Ashamed of Being Alive	0.0	0.0

8. Comparison of Subjects by Extent of Loss of Residence

We also divided the sample on the basis of extent of loss of residence. The first group was comprised of 12 individuals whose homes were totally destroyed by the fire, the second group did not have total loss of their home, but rather had roof damage or smoke damage. Table VI indicates that there was a significant difference between these groups in relation to mean number of depressive symptoms.

TABLE VI

Mean Number of Depressive Symptoms by Loss

<u>Group</u>		<u>Mean</u>	<u>SD</u>
Total Loss	(N=12)	2.9	3.1
Damage	(N=13)	0.8	1.8

($t=2.09$, $df=23$, $p<.05$)

Those whose homes were destroyed reported a significantly greater number of depressive symptoms than the comparison group. There were no significant differences between these groups in relation to post-traumatic stress symptoms. Thus, loss was strongly related to depressive symptoms, but not to post-traumatic stress symptoms.

Table VIII displays the proportions of depressive symptoms reported by those whose homes were destroyed compared to the group who sustained only property damage.

TABLE VII

Frequency of Depressive Symptoms by Extent of Loss

Depressive Symptoms

Trouble Sleeping	58.3	23.1
Feeling Tired all the Time	33.3	7.7
Loss of Appetite	33.3	7.7
Weight Gain	25.0	0.0
Talking or Moving More Slowly	25.0	0.0
Moving all the Time	25.0	0.0
Feeling Restless	25.0	7.7
Trouble Concentrating	25.0	15.4
Thought Coming More Slowly	16.6	15.4
Feeling Depressed	8.3	7.7
Loss of Weight	8.3	7.7
Sleeping Too Much	8.3	0.1
Loss of Interest in Sex	0.0	0.0
Feeling Worthless, Sinful, Guilty	0.0	0.0
Thoughts About Death	0.0	0.0
Wanting to Die	0.0	0.0
Thoughts About Suicide	0.0	0.0
Attempted Suicide	0.0	0.0

4. DISCUSSION

This study presents self-reported psychological symptoms and other responses to a fire that caused widespread property damage. Consistent with prior studies of natural disasters, our sample reported an array of emotional, psychosomatic and physical health problems. This was true of the sample as a whole, which included individuals who lost their homes and those whose homes were threatened.

Psychosomatic and physical health problems are reported after many disasters. Sleep disturbances are a common psychosomatic reaction (Price, 1978; Flynn and Chalmers, 1980; Bolin, 1982). The data from this study supports these findings. The predominant symptom, reported

by the sample as a whole, was trouble sleeping. Related sleep disorders, including nightmares and dreams about the fire, were also reported by the total sample. In making the comparison between those who lost their home and those whose homes were not destroyed, this remained the predominant symptom. This held true as well when a comparison was made between those who witnessed the fire and those who were not in the area. These findings on this older population are consistent with one of the author's (NG) study of children after the 1971 Sylmar earthquake in Southern California (Howard & Gordon, 1972) and with a report by Pynoos et al (1985) of children after a sniper attack at their school.

A wide range of emotional reactions to disaster have been discussed in the literature (Richard, 1974; Milne, 1977; Bolin, 1982). In this sample, at least 20% of the population reported sleep disturbances, jumpiness, trouble concentrating, loss of appetite, and general lethargy. There were also specific emotional reactions that the subjects reported in response to the Impact of Event Scale. Approximately one-third reported having experienced intrusive thoughts, feelings and imagery regarding the event. Several other items were endorsed by approximately 25 percent of the sample, including those concerned with suppression of thoughts and sleep disturbances.

We are particularly interested in the effect of loss on subjects' reports of psychological functioning. It has also been indicated in the literature that loss of home is significantly associated with increased anxiety and depression. All of the literature dealing with residential loss and its mental health consequences, however, is found

in the field of forced relocation and urban renewal (Fried, 1963; Gleser et al, 1981). This study is unique in that it compares residents of the same community, socio-demographically matched, on loss and non-loss of home. We found a significant difference between these two groups in relation to the mean number of depressive symptoms reported on the DIS/DS. There were no significant differences, however, between these two groups in relation to post-traumatic stress reactions. Additionally, there was a tendency for those whose homes were destroyed by the fire to report a greater number of adverse health effects, to use medications, and to seek help from doctors or mental health professionals to a greater extent than those whose homes sustained only limited damage.

We also analyzed our data according to the presence of subjects in the area when the fire occurred. The Three Mile Island Study also documented different levels of stress depending on degree of exposure. Our study shows a significant difference between the two groups in relation to the mean number of post-traumatic stress symptoms reported on the DIS/DS. The exposed group reported trouble sleeping (67%), jumpiness (56%), avoidance of reminders (44%), and nightmares, dreams and remembering (33%). There were no significant differences, however, between these two groups regarding the mean number of reported depressive symptoms. Additionally, sixty-seven percent of those in the area during the fire sought help from a physician or mental health professional in the months following the event, as compared with thirty-six percent of those not present. Fifty-six percent of those exposed used medication after the event, as compared with twenty-nine percent of those who did not witness the fire. Sixty-seven percent of

those in the area sought help from friends and relatives as compared with forty-three percent of those not in the area.

CASE HISTORIES

One couple who lost their home also suffered injury with the wife being burned over 60% of her body. At the time of the interview, about four months after the fire, they had not returned to the sight, and eventually decided to move into another community.

In interviewing the wife of a young couple, it was reported that the husband, who had been at home during the fire, experienced a more severe stress reaction than his wife who had been at work that day. She noticed the helplessness she felt at being unable to do more to prevent the devastation caused by the fire. A similar reaction was described by a woman who also had been present during the fire. She arrived while the fire was in progress to see the home on one side of hers explode (after a gas main was ignited) sending burning debris over the house to the one on the other side, setting it on fire. She watched her neighborhood burn down around her while she could do nothing.

Exposure to the aftermath often compounded the stress reactions of the victims. The bodies of two deceased neighbors and some pets were in the street near one woman's home. Only charred lots with chimneys left standing were all that could be seen when looking up the hill. One woman was self-conscious about the nice clothes she was wearing on the day after the fire while her neighbors had only the clothes on their backs. The feeling was so

strong that she changed into something more like what the others were wearing.

Because of the degree of destruction on her block, ten weeks passed before street lighting was restored. This woman was confronted daily with this and other reminders, and because of this, decided to move out of the neighborhood. Her home had been her dream house, the home she had worked towards earning for many years. After only one year there, the experience was too much for her and she was leaving.

The block where this woman lived was one of the worst struck. One of the interviewers (GG) reported a startled reaction upon seeing it for the first time. She described driving through a residential area, then arriving at a point where all that could be seen were blackened brick chimneys against the night sky. It was like entering a war zone. That sight lead to a sleepless night.

In contrast to the situation where helplessness generated stress and depression, those who were at home watering down their roof, working to extinguish small fires on their properties and those of immediate neighbors, reported feeling good about what they had done. Exercising some means of control and contributing in a helpful manner produces some positive feelings.

As noted in the body of this report, depression symptoms were wide-spread and correlated with the extent of loss. Other important factors mediating the response included: support systems and degree of ability to replace losses. Three single women were affected in different ways for different

reasons, but with similar effects. One did not lose her home; however, hers was the lone house on the street at the time of the fire that was not destroyed but she experienced severe stress about not knowing due to not being able to get to her house for several hours. The streets were closed to incoming traffic, forcing residents to wait for hours before knowing the status of their homes and/or loved ones. One woman reported that the stress was so great that she felt she might have a heart attack unless she got some information. After the fire was out, a fireman checked for her and reported that her home was, in fact, destroyed. She was not satisfied and demanded to see for herself. Because her husband had been an official in the fire department, she was flown by helicopter over the site. Although the house was razed, she reported feeling better knowing for sure. Another woman whose home was destroyed had lost her husband earlier that year. She was extremely distraught over the loss of sentimental reminders of him and the life they had shared together. The woman also felt the burden of having to replace important documents related to the family business and other assets which she was only just assuming responsibility for and becoming familiar with. Another man who was adamant about getting to his home was turned away by the police at gun point. Still determined to see his house, he snuck back into the area through back alleys.

Having a good social support system and financial assets made the loss much more manageable as demonstrated by a couple who had maximum fire insurance coverage and each other. Although disturbed by the loss, they seemed to be okay, and saw this as an opportunity to build their dream house.

The analysis of our data suggests that exposure to the event, in this instance, operationalized as presence in the area at the time of the fire,

has a distinct psychological effect, namely post-traumatic stress symptoms. Witnessing a traumatic event results in persistent, invasive thoughts. The longer-term effects of this trend would require further follow-up of the subjects. The loss of residence and possessions, on the other hand, appears to result in depressive reactions and symptomology. At the time of the investigation, all of the subjects who had lost their homes were residing in temporary housing and were very much involved in preparing for the reconstruction phase. The age of the sample population is clearly a factor in relation to our findings with regard to residential loss. Having resided in the same community for a mean length of 15 years, the prospect of rebuilding presents many problems to this group due to, among other consequences, the effects of inflation on replacement costs.

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