

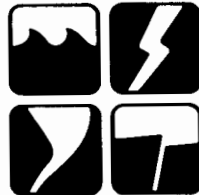
Natural Hazard Research

PUBLIC PERCEPTION OF DISASTER PREPAREDNESS PRESENTATIONS USING DISASTER DAMAGE IMAGES

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PREFACE

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SUMMARY

This paper discusses the level of preparedness of 4,739 persons who attended disaster education presentations intended to heighten awareness and cause individuals to take action to prepare for disasters. The results of this nationwide study on the use of disaster damage images about tornadoes, floods, and earthquakes are presented herein. It is argued that the use of disaster damage images diminishes the purpose of these presentations; the data presented here demonstrate significant lack of action among members of the public after attending presentations using such images.

TABLE OF CONTENTS

The Study	1
Level of Preparedness Before Presentation	3
Supplies Preparedness	3
Family Contact	4
Discussed Plans With Household Members	5
Practiced Disaster Plan	5
Knew Community Warning System	6
Evacuation Planning	7
Utility Service Shut Off Knowledge	8
American Red Cross First Aid Certification	8
Disaster Readiness	8
Belief That a Disaster Could Happen	9
Follow-up	10
Recall of the Presentation	11
Why Use Disaster Damage Images?	12
Level of Preparedness After Presentation	12
Supplies Preparedness	12
Family Contact	14
Discussed Plans With Household Members	15
Practiced Disaster Plan	15
Knew Community Warning System	17
Evacuation Planning	17
Utility Service Shut Off Knowledge	
American Red Cross First Aid Certification	17
Disaster Readiness	18
Belief That a Disaster Could Happen	19
Why?	20
Summary	21
Bibliography	22
Appendix I	25
Appendix II	27

LIST OF TABLES

1	Presentations and Number of Subsequent Contacts	3
2	Supplies Preparedness Prior to Presentation	3
3	Outside Contact Established Prior to Presentation	5
4	Discussed Plans with Household Members Prior to Presentation	5
5	Practiced Disaster Plan Prior to Presentation	6
6	Knew Community Warning System Prior to Presentation	6
7	Knew How Warning Would Be Conveyed	7
8	Evacuation Planning Prior to Presentation	7
9	Knew How to Shut Off Utilities Prior to Presentation	8
10	First Aid Training Prior to Presentation	9
11	Perceived Preparedness for Disaster Prior to Presentation	9
12	Believed Disaster Could Happen	10
13	Subsequent Contacts and Recall of Presentations	11
14	Supplies Preparedness After Presentation	13
15	Change in Supplies Preparedness Based on Type of Images Seen	13
16	Change in Supplies Preparedness Based on Images Seen and Recall of Presentation	14
17	Change in Designation of Outside Contact Based on Images Seen and Recall of Presentation	15
18	Change in Discussion of Disaster Plans Based on Images Seen and Recall of Presentation	16
19	Change in Practice of Disaster Plans Based on Images Seen and Recall of Presentation	16
20	Change in Knowledge of Community Warning System Based on Images Seen and Recall of Presentation	17
21	Change in Knowledge of Where to Go Following Disaster Based on Images Seen and Recall of Presentation	18
22	Change in Perceived Preparedness for Disaster Based on Images Seen and Recall of Presentation	19
23	Change in Belief that Disaster Could Happen Based on Images Seen and Recall of Presentation	20

PUBLIC PERCEPTION OF DISASTER PREPAREDNESS PRESENTATIONS USING DISASTER DAMAGE IMAGES

Many presentations for the public made by representatives from state and local emergency management, the American Red Cross, the National Weather Service, and others, use disaster damage images to illustrate certain points or to emphasize the drama of disasters. The use of disaster damage images has been shown to heighten interest and capture attention (Scanlon, 1978) of general audiences.

THE STUDY

Talking points (suggested remarks or concepts to stress during community presentations about disasters; see, American Red Cross, 1991) on tornadoes, floods, and earthquakes were selected for use in this study. Sixty slides, including 15 (25%) illustrating disaster-caused damage, were selected for use with each of the three talking points. An alternate set of 60 slides that did not include any images of disaster damage were also prepared for each set of talking points. Slides showing the correct action (“the right thing to do”) were substituted for the damage images in this alternate slide set.

The slides were provided by the Prince George’s County Maryland Office of Emergency Preparedness, the audiovisual library of the National Weather Service, the California State Office of Emergency Services, the University of Maryland, and the American Red Cross national headquarters. Some slides that could not be obtained from these sources illustrating specific points (correct things to do) were staged.

Forty people were recruited to assist in this study from 16 Red Cross chapters, four universities, and five local emergency management offices in 18 states across the continental United States (see Appendix I). These people were carefully selected; criteria included having the desire to make presentations to the public, but not extensive experience. Such experience could influence the outcome of the study if the presenter interjected anecdotes based on personal knowledge (Drabek, 1986).

Twelve presenters were in tornado risk states, 14 were in areas known to be at risk

for significant floods, and 14 were in earthquake risk areas in California and the Midwest. Each presenter was provided the talking points for his or her assigned topic and two slide sets for each topic. One slide set included disaster damage images, and one set did not. A set of instructions on making presentations to the public was also included, emphasizing the importance of using only the slides provided and adhering to the script suggested in the talking points.

Each presenter was given four months to make presentations to the public about his or her topic. The presenters were instructed to alternate the presentations they made between those that included disaster damage images in the slides used and those that did not include disaster damage images. Each person attending the presentations was asked to register—providing name, address, and telephone number—and was asked to agree to be telephoned for follow-up six months after attending the presentation. In addition, each person was asked to complete a short questionnaire that was kept anonymous but was coded for each presentation for later correlation. The questionnaire asked background information about each person's personal level of preparedness for the specific disaster. A sample questionnaire is included as Appendix II.

The talking points encouraged personal and family disaster preparedness. After making the presentations, volunteers distributed Red Cross brochures containing recommendations on how to prepare for the disaster.

After each presentation, the presenter returned the individual questionnaires and a summary sheet to the research team giving information on the nature of the group, date of presentation, and the type of questions asked by attendees after the presentation.

Six months after each presentation, the University of Maryland at College Park Survey Research Center tried to reach each attendee. Data collected from successful contacts were correlated with the data collected from the initial questionnaires. The data on the number of presentations made and the number of successful follow-up contacts are presented in Table 1.

Table 1
Presentations and Number of Subsequent Contacts

Topic	Number of presentations	Attendees	Number reached after six months
Tornado	45 (damage)	586	460 (78.5%)
Tornado	40 (no damage)	490	345 (70.4%)
Flood	59 (damage)	1,125	886 (78.8%)
Flood	49 (no damage)	1,227	956 (77.9%)
Earthquake	33 (damage)	660	555 (84.1%)
Earthquake	28 (no damage)	651	544 (83.6%)

LEVEL OF PREPAREDNESS BEFORE PRESENTATION

Supplies Preparedness

The first section of the pre-presentation questionnaire and six-month post-presentation follow-up focused on personal acquisition and storage of essential disaster preparedness supplies. The data in Table 2 show what attendees stated about their level of supplies preparedness before they attended the presentation.

Table 2
Supplies Preparedness Prior to Presentation

Topic	Attendees	Supplies in one place?	Have supplies, not in one place	Include food?	Include water?
Tornado	1,076	132 (12.3%)	214 (19.9%)	39 (3.6%)	29 (2.7%)
Flood	2,352	162 (6.9%)	407 (17.3%)	50 (2.1%)	40 (1.7%)
Earthquake	1,311	278 (21.2%)	343 (26.2%)	278 (21.2%)	272 (20.7%)
TOTAL	4,739	572 (12.1%)	964 (20.3%)	367 (7.7%)	341 (7.2%)

These data indicate that 17.3% to 26.2% of attendees answered before the presentation that they had a flashlight, battery-powered radio, and extra batteries, but not stored

together in one place. Those attendees who live in earthquake risk areas were more likely to state before the presentation that they had these essential supplies all together in one place compared with attendees who live in tornado risk areas or flood risk areas.

The number of attendees who indicated before the presentation that they had stored nonperishable food and stocked a supply of water for each family member in case of disaster was very small (from 1.7% to 3.6%) in tornado risk and flood risk areas. Storage of food and water was much higher in earthquake risk areas (21.2% stored food, 20.7% stored water). This may indicate the effect of long-term earthquake education efforts in earthquake risk areas.

A question about “other things” one had on hand in case of disaster produced a wide range of results. Answers included items such as complete tool sets, wrenches, and shovels, to sanitary supplies, such as latex gloves, plastic garbage bags, and personal hygiene items. One participant even indicated he or she had a complete “trauma crash kit” used to perform emergency field surgery.

The “other things” most often mentioned included:

- Tools: crescent wrench, hammer, pliers, screwdrivers, knife;
- Can opener;
- Games for children;
- Blankets, sleeping bags, and changes of clothing.

Family Contact

Attendees were asked before the presentation if they had asked someone who does not live with them to be their contact in case of disaster. The results are presented in Table 3.

These data reflect a level of preparedness similar to that shown by the supplies question; that is, attendees of the tornado and flood presentations were much less likely to have asked someone to serve as an outside contact than people who attended earthquake presentations. Again, this may indicate the effect of long-term earthquake education efforts in earthquake risk areas.

Table 3
Outside Contact Established Prior to Presentation

<u>Topic</u>	<u>Attendees</u>	<u>Have outside contact?</u>	
Tornado	1,076	24	(2.2%)
Flood	2,352	44	(1.9%)
Earthquake	1,311	190	(14.5%)

Discussed Plans With Household Members

Attendees were asked before the presentation if they had discussed with each person living in their household what they would do in case of disaster. The results are presented in Table 4.

Table 4
Discussed Plans with Household Members Prior to Presentation

<u>Topic</u>	<u>Attendees</u>	<u>Discussed plans?</u>	
Tornado	1,076	544	(50.6%)
Flood	2,352	621	(26.4%)
Earthquake	1,311	843	(64.3%)

These data show a significantly higher number of attendees in tornado risk areas who had discussed plans, as well as a high level of discussion among attendees in earthquake risk areas. The lower level of discussion among people in flood risk areas may result from the longer warning time associated with most riverine flooding, compared with disaster events such as tornadoes and earthquakes that happen with little or no warning.

Practiced Disaster Plan

Attendees at each presentation were asked if they had practiced with each member of their household what they would do in case of disaster. A significant number of people left this question blank or wrote in alternate answers to the question. The results in Table 5 show

that attendees in flood risk areas practiced least. People who live in tornado risk areas practiced more, but not significantly more. People who live in earthquake risk areas practiced more than anyone else. Several attendees in tornado and earthquake risk areas, but no one in flood risk areas, indicated that their children asked them to practice their plans.

Table 5
Practiced Disaster Plan Prior to Presentation

Topic	Attendees	Practiced within last 6 months	Practiced more than 6 months ago	Have not practiced*
Tornado	1,076	54 (5.0%)	92 (8.6%)	804 (74.7%)
Flood	2,352	64 (2.7%)	88 (3.7%)	1,871 (79.5%)
Earthquake	1,311	122 (9.3%)	273 (20.8%)	829 (63.2%)

*Because some people left this question blank, the numbers do not add up to 100%.

Knew Community Warning System

Each attendee was asked whether he or she knew how they would be warned if a disaster were going to happen where he or she lives. This question was not asked of people attending earthquake presentations or in the follow-up for earthquake presentation attendees. Table 6 presents the data about warning knowledge.

Table 6
Knew Community Warning System Prior to Presentation

Topic	Attendees	Know how would be warned?	Not sure
Tornado	1,076	753 (70.0%)	287 (26.7%)
Flood	2,352	1,397 (59.4%)	837 (35.6%)

In addition to being asked if they knew how they would be warned, attendees were asked to describe how they would be warned. The results are shown in Table 7. No correlation has been made between the answers and the actual warning systems in the communities where the presentations took place.

Table 7
Knew How Warning Would Be Conveyed

Topic	Attendees	Warnings Mentioned			
		TV	Radio	Sirens	Other*
Tornado	1,076	642 (59.7%)	541 (50.3%)	267 (24.8%)	24 (2.2%)
Flood	2,352	1,350 (57.4%)	1,211 (51.5%)	340 (14.5%)	56 (2.4%)

*The other method most often described was door-to-door notification by local officials (police, fire department).

Evacuation Planning

Attendees were asked if they had planned where they would go if they were advised to evacuate by community officials. The results in Table 8 are not surprising to the emergency management community.

Table 8
Evacuation Planning Prior to Presentation

Topic	Attendees	Planned where to go in advance	Not planned where to go
Tornado	1,076	26 (2.4%)	1,018 (94.6%)
Flood	2,352	53 (2.3%)	2,149 (91.4%)
Earthquake	1,311	168 (12.8%)	1,098 (83.8%)

Utility Service Shut Off Knowledge

Attendees at each presentation were asked if they knew how to turn off electrical power, gas service, and water, and when to turn off utilities. The results are shown in Table 9.

Table 9
Knew How to Shut Off Utilities Prior to Presentation

Topic	Attendees	Know how to turn off electricity	Know how to turn off gas*	Know how to turn off water
Tornado	1,076	294 (27.3%)	130 (12.1%)	95 (8.8%)
Flood	2,352	668 (28.4%)	341 (14.5%)	197 (8.4%)
Earthquake	1,311	464 (35.4%)	484 (36.9%)	571 (43.6%)

*Numbers are lower because approximately 15% of all attendees indicated they had no gas service in their homes.

The data indicate relatively poor knowledge of how to turn off utilities, except in earthquake risk areas. This may indicate the effect of long-term earthquake education efforts in earthquake risk areas.

American Red Cross First Aid Certification

Attendees were asked if they had taken American Red Cross first aid training or if someone in their household was currently certified. The results in Table 10 correlate almost one to one with data provided by the American Red Cross in national statistical reports for the areas where presentations were made (American Red Cross, 1990).

Disaster Readiness

One question on the questionnaire completed by all presentation attendees asked “Do you feel you and the members of your household would know what to do in case a disaster happened right now?” Most of the public denies that a disaster could happen to them, but if it were to happen, they believe they would be able to respond appropriately (Palm, 1981). The data shown in Table 11 reinforce this concept. Most people believe they would know

Table 10
First Aid Training Prior to Presentation

Topic	Attendees	Trained within last 3 years	Trained more than 3 years ago	Someone else in home trained	No current Training
Tornado	1,076	63 (5.8%)	92 (8.6%)	69 (6.4%)	730 (67.8%)
Flood	2,352	138 (5.9%)	201 (8.5%)	157 (6.7%)	1,634 (69.5%)
Earthquake	1,311	77 (5.9%)	118 (9.0%)	96 (7.3%)	909 (69.3%)

what to do, or would “probably” know what to do, in case of a disaster. In tornado and flood risk areas, 83% of attendees indicated they knew what to do or “probably” knew what to do. In earthquake risk areas, this level increased to 92%. Approximately 9% of participants in tornado and flood risk areas admitted that they would not know what to do, and less than 6% of those in earthquake risk areas admitted to not knowing what to do.

Table 11
Perceived Preparedness for Disaster Prior to Presentation

Topic	Attendees	Would know what to do	“Probably” would know what to do	Do not know what to do
Tornado	1,076	700 (65.1%)	236 (21.9%)	99 (9.2%)
Flood	2,352	1,493 (63.5%)	463 (19.7%)	216 (9.2%)
Earthquake	1,311	897 (68.4%)	309 (23.6%)	77 (5.9%)

Belief That a Disaster Could Happen

The final question asked of all attendees was “Do you really think a disaster could happen to you where you live?” Again, the responses were in agreement with previously published research (Drabek, 1986). Most people deny that a disaster could happen to them, or could happen where they are. Only those people who had actually experienced a flood, tornado, or earthquake where they lived were likely to admit that they thought a disaster could happen to them where they lived. Table 12 shows the results of this question.

Table 12
Believed Disaster Could Happen

<u>Topic</u>	<u>Attendees</u>	<u>I think a disaster could happen where I live</u>	<u>I do not think a disaster could happen where I live</u>
Tornado	1,076	263 (24.4%)	787 (73.1%)
Flood	2,352	369 (15.7%)	1,886 (80.1%)
Earthquake— California	704	343 (48.7%)	323 (45.9%)
Earthquake— Midwest	607	68 (11.2%)	510 (84.0%)

It was particularly interesting to note the following information derived from these data:

- More than 80% of people who live in flood risk areas generally do not think a flood could happen to them;
- People who live in California have a much greater belief that an earthquake could happen to them than people who live in the Midwest. A number of attendees at the earthquake education presentations in the Midwest indicated a great disbelief that an earthquake could happen after December 3, 1989—the date that Iben Browning “projected” a 50% chance of a major Midwest earthquake.

FOLLOW-UP

The University of Maryland Survey Research Center staff made three attempts to reach each person who registered his or her attendance at each presentation. Eighty-four people who were reached for follow-up (1.8%) refused to participate in the follow-up survey. Nine hundred and nine (19.2%) people had moved, had disconnected or nonworking telephones, or were otherwise not reachable. The data shown in this report are from successful follow-up contacts only.

Recall of the Presentation

Each person who was reached and agreed to participate in the follow-up survey was asked if he or she remembered seeing a presentation about the disaster in question “about six months ago.” The results are presented in Table 13.

Table 13
Subsequent Contacts and Recall of Presentations

Topic	Damage or no damage shown	Attendees	Number reached after six months	Of those reached, number who remembered presentation
Tornado	Damage	586	460	372 (80.9%)
Tornado	No damage	490	345	166 (48.1%)
Flood	Damage	1,125	886	657 (74.2%)
Flood	No damage	1,227	956	385 (40.3%)
Earthquake	Damage	660	555	475 (85.6%)
Earthquake	No damage	651	544	321 (59.0%)
TOTAL		4,739	3,746	2,376
			79.0%	63.4%

When asked why they remembered the presentation, most people responded with one or more of the following reasons:

- It was an atypical event;
- They had an interest in the topic;
- They knew the presenter;
- They had past experience with the disaster covered by the presentation;
- They remembered the images in the slides shown.

Since all of these reasons except the last were stated in relatively equal proportion by attendees of presentations with and without disaster damage images, one can infer that including damage images caused the presentation to be more memorable.

Why Use Disaster Damage Images?

There are a variety of reasons for using disaster damage images for presentations. The following reasons have been cited by emergency management and Red Cross officials:

- The public needs to see what could happen after a disaster;
- The drama of a good photo holds attention;
- People will remember these images long after they see them;
- Disaster damage images are interesting for presenters to use.

Indirect reasons for using disaster damage images, as related by Red Cross and emergency management officials, include the following:

- Making an indirect statement, “Don’t let this happen to you.”
- Appealing to guilt—if one had done something to prepare ahead of time, damage would be reduced.

Certainly it could be argued, and these data support, that using disaster damage images for presentations results in significantly higher recollection of presentations.

LEVEL OF PREPAREDNESS AFTER PRESENTATION

The data show that there is a significant difference in what people did who saw a presentation that included disaster damage images, compared with what people did who did not see disaster damage images.

Supplies Preparedness

The data in Table 14 show what attendees stated about their level of supplies preparedness after the presentation they attended. The reader should note the differences between the presentations that included disaster damage images (“damage”) and the presentations that did not (“no damage”).

These data indicate that significantly more people took the time after the presentation that did *not* include disaster damage images to put essential disaster supplies together in one place, or at least to purchase them and have them on hand (but not in one place), compared with people who saw presentations that included disaster damage images.

Table 14
Supplies Preparedness After Presentation

Topic	Damage or no damage	n*	Supplies in one place	Have supplies, not all in one place	Include food	Include water
Tornado	Damage	372	58 (15.6%)	82 (22.0%)	25 (6.7%)	20 (5.4%)
	No damage	166	91 (54.8%)	42 (25.3%)	60 (36.1%)	58 (34.9%)
Flood	Damage	657	62 (9.4%)	97 (14.8%)	38 (5.8%)	25 (3.8%)
	No damage	385	184 (47.8%)	117 (30.4%)	109 (28.3%)	94 (24.4%)
Earthquake	Damage	475	135 (28.4%)	145 (30.5%)	113 (23.8%)	110(23.2%)
	No damage	321	152 (47.4%)	105 (32.7%)	107 (33.3%)	102(31.8%)

*n = number of people reached for telephone follow-up who remembered the specific disaster education presentation.

Table 15 illustrates this difference more dramatically.

Table 15
Change in Supplies Preparedness
Based on Type of Images Seen

Topic	Damage or No damage	Percent of attendees who had supplies in one place or on hand <i>before</i> presentation	Percent of attendees who had supplies in one place or on hand <i>after</i> presentation	Percentage difference
Tornado	Damage	33.0%	37.6%	4.6%
	No damage	31.6%	80.1%	48.5%
Flood	Damage	24.2%	24.2%	0.0%
	No damage	24.0%	78.2%	54.2%
Earthquake	Damage	48.5%	58.9%	10.4%
	No damage	45.4%	80.1%	34.7%

Readers will remember that there is a significant “recall factor” at work here. Table 13 presents data that demonstrate that significantly more people remembered attending the presentations that included disaster damage images. People who did not recall the presentations were not likely to have followed through on the presentation’s recommendations to gather disaster supplies and put them together in one place. Therefore, on that basis, one could argue that disaster damage images should be used to enhance recall of the presentation.

However, when one factors in the “recall factor” into these data, the results show that significantly more people who remembered the presentation six months later, but did *not* see disaster images, followed through on the presentation recommendations. Table 16 illustrates the influence of the “recall factor.”

Table 16
Change in Supplies Preparedness
Based on Images Seen and Recall of Presentation

Topic	Damage or No damage shown	Recall factor	Percentage difference of people who assembled disaster supplies
Tornado	Damage	80.9%	3.7%
	No damage	48.1%	23.3%
Flood	Damage	74.2%	0.0%
	No damage	40.3%	21.8%
Earthquake	Damage	85.6%	8.9%
	No damage	59.0%	20.5%

Family Contact

Table 17 presents data on whether the attendee designated someone outside the home to serve as a contact in case of disaster.

Table 17
Change in Designation of Outside Contact
Based on Images Seen and Recall of Presentation

<u>Topic</u>	<u>Damage or no damage</u>	<u>Recall factor</u>	<u>Real percentage difference of people who said they designated an outside person to be a contact in case of disaster</u>
Tornado	Damage	80.9%	3.5%
	No damage	48.1%	11.0%
Flood	Damage	74.2%	2.2%
	No damage	40.3%	12.0%
Earthquake	Damage	85.6%	10.1%
	No damage	59.0%	16.8%

Discussed Plans With Household Members

The percentage of people who were contacted and recalled the presentation also provided interesting results regarding discussion of plans with household members. Approximately equal numbers of people who attended presentations said they discussed disaster plans with their families. Table 18 summarizes the recall factor data for the “discussed plans” element of the follow-up survey.

Unfortunately, no additional follow-up questions were asked about this element to determine why the numbers are so close. It would have been interesting to ask a question that would have distinguished discussing disaster “plans” versus discussing the “presentation” on disaster preparedness.

Practiced Disaster Plan

The data in Table 19 show that people who did not see disaster damage images in the presentation they attended were more likely to practice what they would do in case of disaster compared with people who saw presentations that included disaster damage images.

Table 18
Change in Discussion of Disaster Plans
Based on Images Seen and Recall of Presentation

<u>Topic</u>	<u>Damage or No Damage</u>	<u>Recall Factor</u>	<u>Real percentage difference of people who said they discussed disaster plans with household members</u>
Tornado	Damage	80.9%	6.4%
	No Damage	48.1%	6.8%
Flood	Damage	74.2%	9.8%
	No Damage	40.3%	9.8%
Earthquake	Damage	85.6%	0.9%
	No Damage	59.0%	2.2%

Table 19
Change in Practice of Disaster Plans
Based on Images Seen and Recall of Presentation

<u>Topic</u>	<u>Damage or No damage</u>	<u>Recall factor</u>	<u>Real percentage difference of people who said they practiced what to do in case of disaster</u>
Tornado	Damage	80.9%	2.1%
	No damage	48.1%	14.1%
Flood	Damage	74.2%	1.4%
	No damage	40.3%	11.3%
Earthquake	Damage	85.6%	2.4%
	No damage	59.0%	14.2%

Knew Community Warning System

The data are again similar when comparing the “before” and “after” data on whether the attendee said he or she knew how he or she would be warned about a disaster (Table 20). Again, the data for earthquake risk area presentation attendees is dismissed, because there are typically no warnings issued in advance of an earthquake.

Table 20
Change in Knowledge of Community Warning System
Based on Images Seen and Recall of Presentation

Topic	Damage or No damage	Recall factor	Percentage difference of people who said they knew how they would be warned about disaster
Tornado	Damage	80.9%	2.4%
	No damage	48.1%	17.1%
Flood	Damage	74.2%	1.3%
	No damage	40.3%	15.3%

Evacuation Planning

The results were similar when participants were asked after six months if they had planned where they would go if they were advised to evacuate by community officials. Table 21 summarizes the results from this question.

Utility Service Shut Off Knowledge American Red Cross First Aid Certification

When attendees were asked if they knew when and how to turn off utilities and/or had obtained certification from the Red Cross in first aid, the responses did not change more than 0.2% for either question after the presentations. The *Talking Points for Disaster Education Presentations* (American Red Cross, 1991) do not specifically address turning off utilities or obtaining Red Cross certification, so one might predict little change in these responses.

Table 21
Change in Knowledge of Where to Go Following Disaster
Based on Images Seen and Recall of Presentation

Topic	Damage or No damage	Recall factor	Percentage difference of people who said they would know where to go if advised to evacuate
Tornado	Damage	80.9%	2.4%
	No damage	48.1%	15.3%
Flood	Damage	74.2%	1.1%
	No damage	40.3%	12.3%
Earthquake	Damage	85.6%	2.2%
	No damage	59.0%	14.1%

Disaster Readiness

The follow-up question “Do you feel you and the members of your household would know what to do in case a disaster happened right now?” produced interesting results. The data are presented in Table 22.

These data show a *decrease* in people saying they would know what to do in case of a disaster among each of the groups that saw presentations about tornadoes, floods, and earthquakes that included disaster damage images. The data show a significant *increase* in people saying they know what to do among those who did not see disaster damage images in their respective presentations.

In all cases, the “probably would know what to do” category increased among those who saw disaster damage images and decreased among those who did not see disaster damage images. Also, in all cases, whether people saw disaster damage images or not, the “do not know what to do” category decreased slightly.

These data show that people who saw disaster damage images were more confused about the right things to do after the presentations. Since slides in the presentations that did

Table 22
Change in Perceived Preparedness for Disaster
Based on Images Seen and Recall of Presentation

Topic	BEFORE PRESENTATION			AFTER PRESENTATION		
	Would know what to do	Probably know what to do	Do not know what to do	Would know what to do	Probably know what to do	Do not know what to do
Tornado	65.1%	21.9%	9.2%	58.0%	28.9%	7.0%
Damage				80.0%	7.8%	5.2%
No damage						
Flood	63.5%	19.7%	9.2%	54.3%	31.9%	7.2%
Damage				81.2%	7.5%	4.5%
No damage						
Earthquake	68.4%	23.6%	5.9%	56.2%	29.9%	6.7%
Damage				83.5%	5.1%	5.1%
No damage						

not include disaster damage images portrayed people “doing the right thing,” these data indicate that visual learning was reinforced by the message they heard (Zemke, 1988). People feel they know the right thing to do when they both see the information and hear it. They become confused when they hear the right thing to do, but see damage images (what to avoid) instead. These data reinforce the finding that people need to be shown and told the right thing to do, rather than be shown what could happen if they do not do the right thing (Drabek, 1986).

Belief That a Disaster Could Happen

Follow-up survey participants were asked the same question posed at the end of their pre-presentation questionnaire: “Do you really think a disaster could happen to you where you live?” The resultant data also show interesting results, which are presented in Table 23.

These data imply the following conclusions:

- Showing disaster damage images makes little difference in the public’s belief that a disaster could happen where they live.
- Not showing disaster damage images, however, does produce a significant increase in the number of people who will state that they believe a disaster

Table 23
Change in Belief that Disaster Could Happen
Based on Images Seen and Recall of Presentation

Topic	BEFORE PRESENTATION		AFTER PRESENTATION	
	I think a disaster could happen where I live	I do not think a disaster could happen where I live	I think a disaster could happen where I live	I do not think a disaster could happen where I live
Tornado	24.4%	73.1%		
Damage			28.9%	63.9%
No damage			54.5%	38.6%
Flood	15.7%	80.1%		
Damage			17.6%	73.9%
No damage			48.5%	45.0%
Earthquake—California	48.7%	45.9%		
Damage			50.4%	42.9%
No damage			74.1%	19.4%
Earthquake—Midwest	11.2%	84.0%		
Damage			10.2%	82.9%
No damage			34.4%	58.8%

could happen where they live. It is important for people to believe a disaster can happen to them, so that they will personalize the risk and be motivated to take appropriate preparedness measures (Drabek, 1986).

WHY?

Why do people who do not see disaster damage images indicate that they would know what to do in a disaster and have a greater belief that a disaster could happen to them? To investigate this question, persons stating that they did not know what to do or stating that they did not believe a disaster could happen to them were asked a follow-up question about

these responses.

Two different sets of responses arose among those who saw disaster damage images and those who did not. Among those who did not see disaster damage images, the most often quoted responses are as follows, with the percent of respondents giving the response as noted:

- I haven't gotten around to it yet. (78.1%) *Apathy*
- I can't afford it. (11.3%) *Avoidance*
- I just don't think it can happen here. (5.2%) *Denial*
- Someone else (government, Red Cross, church groups, insurance) will take care of me. (3.4%) *Myth*
- Other (2.0%) *Mixed responses—myths, misperceptions, apathy*

Among those who saw disaster damage images, the predominant responses involved denial or avoidance factors:

- I don't want to think about it. (52.0%) *Avoidance*
- If it is that bad, there's nothing I can do about it anyway (or "if it's my time to go, there's nothing I can do about it"). (21.2%) *Denial*
- It's too horrible to talk to my family about. (11.5%) *Avoidance*
- I do not want to frighten my family. (8.1%) *Avoidance*
- Other (7.2%) *Avoidance or denial responses*

Clearly, there is a lesson here. Apathy was the prime cause for 78% of the people who did not do anything after seeing presentations that did not include disaster damage images. Avoidance and denial accounted for 100% of the lack of action among those who did see disaster damage images.

SUMMARY

It is difficult not to conclude that disaster damage images were influential in heightening individual denial and causing persons to want to avoid taking necessary disaster preparedness measures. Since the greater emergency management community believes it is important to encourage the public to prepare ahead of time for disasters, they must provide the most

persuasive argument to cause people to take action. The data in this report affirm the following:

- The public must not only be told but also be shown what to do;
- Disaster damage images enhance recall of a presentation—however, presentations that include visuals showing disaster damage have a direct negative effect on the purpose of disaster education presentations, which is to encourage the public to prepare in advance for a disaster;
- More members of the public will take appropriate preparedness steps *and* feel more able to deal with disaster when they are shown correct behaviors as opposed to images of damage that may occur as a result of a disaster happening to them;
- Disaster damage images heighten avoidance and denial.

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APPENDIX I

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Zanesville Office of Emergency
Management
Zanesville, Ohio

APPENDIX II

Sample questionnaire provided before disaster education presentations and also for six-month post-presentation follow-up.

PLEASE COMPLETE THIS QUESTIONNAIRE NOW

1. Do you have essential disaster supplies (flashlight, battery-powered radio, extra batteries, and a first aid kit) all together in one place in your home?
 Yes, I have all of these items stored in one place.
 I have all of these items, but they are not all together in one place.
 No, I do not have all of these items right now.
2. If you have put together your disaster supplies in one place, have you included nonperishable food in this kit?
 Yes No
3. Do you have at least three gallons of water per person who live in your home stored in case of emergency?
 Yes No
4. What other things do you have on hand in case of disaster?

5. Have you asked a friend or family member who does not live with you to be your contact in case of disaster?
 Yes No
6. Have you discussed what you would do in case of disaster with each person who lives in your home?
 Yes No
7. Have you and each person in your home practiced what you would do in case of disaster?
 Yes, within the last six months.
 Yes, but it has been more than six months since we (I) practiced.
 No.

PLEASE CONTINUE ANSWERING THE QUESTIONS ON THE BACK

APPENDIX II, CONTINUED

8. Do you know how you would be warned if a flood were going to happen where you live?
- ____ Yes. Describe: _____
- ____ Not sure.
9. If you were advised to evacuate your home by officials in your community, have you and the members of your household planned exactly where you would go?
- ____ Yes. ____ No.
10. Utility Service:
- a. Do you know how to turn off all the electrical power to your home?
- ____ Yes. ____ No.
- b. Do you know how to turn off gas (natural gas or propane) serving your home?
- ____ Yes. ____ No.
- ____ I do not have gas appliances in my home.
- c. Do you know how to turn off the water service to your home?
- ____ Yes. ____ No.
- d. Do you know when to turn off electricity, gas, and water in times of disaster?
- ____ Yes. ____ No.
11. Do you have current certification in First Aid from the American Red Cross?
- ____ Yes, I have taken training within the last 3 years.
- ____ I have taken first aid training in the past, but not the last 3 years.
- ____ Someone else in my household is trained, but I am not.
- ____ No, no one in my household has had first aid training recently.
12. Do you feel you and the members of your household would know what to do in case a disaster happened right now?
- ____ Yes. ____ Probably. ____ No.
13. Do you really think a disaster could happen to you where you live?
- ____ Yes. ____ No.

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