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Emergency Support Satisfaction Among 2001 Hoisington, Kansas, Tornado Victims

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SUMMARY

On April 21, 2001, a category F-4 tornado struck the small central Kansas town of Hoisington at 9:15 p.m., leaving one dead, dozens injured, and millions of dollars in damage. Based primarily on a questionnaire survey of the tornado victims of Hoisington, this study examined respondent overall satisfaction and satisfaction with each of the four major sources of support selected in this study. Respondents satisfaction with each source and overall satisfaction were investigated using a Likert Scale. Analysis of the survey data shows that the emergency assistance received was rated satisfactorily by the respondents. However, respondents offered suggestions for improvements in handling disaster aid distribution efforts.

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INTRODUCTION

Hoisington, a town of about 3,000 people in central Kansas, was struck by an F-4 level tornado at 9:15 p.m. on April 21, 2001, without any warning (Figure 1). According to statistics from the National Weather Service in Topeka, Kansas, it was the strongest of all the 101 tornadoes that occurred in Kansas in 2001 and accounted for over 91% of all property damage caused by tornadoes that year (*Associated Press* 2002). The Hoisington tornado killed one person, injured 28, and caused more than \$43 million in property damage. Information collected from the city office indicates that 569 residences sustained varying degrees of damage: 182 were totally destroyed, 52 experienced major damage, and the remaining 335 experienced minor damage. In all, about 45% of the community's 1,284 households sustained some damage. Several businesses and public buildings also suffered severe to moderate damage resulting from the tornado.

The tornado touched down just southwest of Hoisington and moved northeast, creating a path of destruction six city blocks wide and about two miles long (Hegeman 2001). The nearest weather station radar failed to detect the twister's advance and the town's emergency warning sirens did not sound until after the tornado hit. Meteorologists at the National Weather Service in Wichita, located 100 miles southeast of Hoisington, carefully followed the development of a strong thunderstorm system in Rush country – just a few miles west of Hoisington, which is located in Barton County. These specialists watched as the storm seemed to disintegrate on radar. Also observing signs of a dying system, veteran storm chasers in these two counties went to Great Bend to eat (Hegeman 2001). The Hoisington tornado developed very quickly and it went from a category F-1 to F-4 in seconds. Less than a mile from where it touched down, the tornado developed wind speeds exceeding 200 miles per hour (mph).

An estimated 50,000 volunteers and more than two dozen organizations from around Kansas and across the country flocked to the beleaguered community in the aftermath of the tornado to help cleanup and provide emergency assistance to victims (Moline 2001). Such assistance reduces victim suffering and helps to speed recovery from the destruction caused by the disaster. The objectives of this research are to examine the extent and type of support provided to Hoisington tornado victims by four major sources and to evaluate the victims' overall satisfaction as well as satisfaction with each one of these sources.

Overall satisfaction level will be analyzed by personal and household attributes of the tornado victims. Problems victims faced in obtaining disaster assistance and their opinions of how these sources can improve future emergency assistance programs will also be investigated. Although both business and residential areas were affected by the 2001 Hoisington tornado, this study focuses on victims who experienced damage to their houses.

The Federal Emergency Management Agency (FEMA) and the American Red Cross (ARC) classify public and private

sources of disaster aid into four broad groups: government agencies, private insurance companies, volunteer organizations, and business communities (Federal Emergency Management Agency and the American Red Cross 1992, 30). The U.S. Federal Government currently provides a variety of disaster relief programs through national, state, and/or local level agencies and departments (Barnett 1999, 141). FEMA has the lead responsibility for domestic emergency management, which includes providing both disaster aid and disaster insurance.

Most tornado studies in the United States and elsewhere have either examined the physical nature of the tornado and the major risk factors for human casualties or investigated victim and survivor perceptions of tornado risk and individual or household responses to the hazard (Bluestein 1999; Legates and Biddle 1999). This study will concentrate on the satisfaction with emergency aid delivered to victims of the 2001 tornado in Hoisington. This research will provide valuable information to four major external aid sources and others involved in delivering disaster relief in the aftermath of a tornado.

RESEARCH DESIGN

Selection of the Study Area

As mentioned, a total of 101 tornadoes occurred across Kansas over 22 days in 2001. This year marked the third highest number of tornadoes ever recorded in the state, where an average year brings 50 tornadoes. In 2001, tornado touchdowns were observed between April and September. The first tornado of the year struck on April 6 and the last one on September 14. April was the month with the most tornadoes when 34 touched down. Fifteen tornadoes hit on April 10 alone – the most in one day during 2001 (*Associated Press* 2002). There were at least 16 tornado touchdowns reported in April prior to the Hoisington tornado and all ranged from 0-3 on the Fujita Scale.

The violent nature of the Hoisington tornado was the primary reason for selection of this community for this study. Other reasons were its location away from large cities, the small population affected, and failure of the local government and weather stations to provide adequate tornado warning prior to the experience. Available studies (e.g., Blaikie et al. 1994; Bolin and Stanford 1998; Paul 1999) suggest that disaster victims of small communities have received little attention among hazard researchers. These studies further indicate that victims in large communities or small communities adjacent to large cities generally receive the most attention from emergency management and relief agencies during and after the occurrence of an extreme event.

Data Sources

Data for this study was collected through field observations and a mail questionnaire survey distributed to tornado victims of Hoisington. Two visits were made to the community to gain first hand knowledge about the destruction caused by the tornado and to interact with tornado victims. These visits also allowed for observation of the activities of the disaster assistance agencies involved in mitigating the effects of the tornado and for collecting relevant information from key personnel. In addition to the survey and field observations, relevant documents and reports were collected from several sources including tornado Web sites, media accounts, and U.S. Census Bureau.

The most important component of this study was the administration of the questionnaire survey among tornado victims in Hoisington. Respondent opinions regarding the nature and extent of emergency support received and satisfaction with this support were collected through the questionnaire survey. In addition to questions regarding respondents satisfaction level with the support received, the questionnaire requested information about the extent of damage incurred by the tornado and the amount of emergency assistance received from four major sources. Respondents were also asked to provide ancillary information regarding household and individual characteristics.

Respondents were randomly selected from a complete list of tornado victims supplied by the Hoisington Chamber of Commerce. This list contained the addresses of 569 households. From this list 150 households were randomly selected and a structured questionnaire was mailed to each one of them in mid-September 2001. However, due to the total destruction of houses, some residents had either temporarily or permanently relocated. This delayed the process of

collecting data from the respondents. Unexpectedly, only eight questionnaires were returned uncompleted because no one now lived at the specified addresses and no forwarding addresses were available to the postal service.

Response to the first mailing was not encouraging; only 41 questionnaires were returned with replies. Since this number was considered too low to support the intended statistical analysis, a second mailing was necessitated. A total of 117 questionnaires were sent to those respondents who did not respond to the first mailing. Eight new households were randomly selected to replace the non-deliverable questionnaires from the first mailing. Respondents were requested to complete the survey by the last week of December 2001. Combined results from the two mailings provided 63 replies representing about 42% of the total number of surveys sent. Four completed questionnaires were discarded because they were completed improperly. Thus the analysis in this study is based on 59 completed questionnaires.

Both qualitative and quantitative approaches were employed to analyze the collected data. Respondent overall satisfaction and satisfaction with the four selected sources of disaster assistance were measured using a 1-5 Likert Scale, where 1 indicates highly satisfied and 5 highly dissatisfied. A score of 3 infers that the respondent was neither particularly dissatisfied nor satisfied. Chi-square tests of association were then applied to test differences between the satisfaction score and selected household and individual characteristics of the respondents.

Characteristics of the Respondents

Table 1 presents selected socio-economic and demographic characteristics of the respondents. The table shows that the proportion of male and female respondents was almost same and 64.41% of all respondents were married at the time of the survey. The age of the respondents ranged from 28 to 87, with median age of 45. Slightly over 20% of the respondents belonged to the 30-44 age group. The age cohorts of 45-64 and over 64 accounted for 37% and 32% of all respondents, respectively. As shown in Table 1, the level of education of respondents is categorized into five classes. The age group of the respondents and their level of education seems consistent to each other.

Nearly two-thirds of the respondents were employed full-time at the time of the survey and only two respondents (3.39%) reported being only employed part-time. Nearly 31% of all respondents were retired. Surprisingly, not a single respondent was unemployed. This relatively high proportion of retired persons might be associated with the zero percent unemployment rate enjoyed by the study area. The modal gross family income was between \$40,000 and \$49,999 per year. Nearly 56% of all respondent households had a yearly income higher than \$39,999. This percentage seems high for respondents of a community like Hoisington, however, the income range of the respondents and the unemployment rate are consistent with each other.

Table 1. Selected characteristics of the respondents.

Characteristic	Number	Percentage
Gender		
Male	30	50.85
Female	29	49.15
Marital Status		
Single	10	16.95
Married	38	64.41
Divorced	3	5.08
Widowed	8	13.56
Age (in years)		

<30	4	6.78
30-44	12	20.34
45-64	22	37.29
>64	19	32.20
Education		
Grade School	2	3.39
High School	22	37.29
Undergraduate	18	30.51
Graduate	12	20.34
Post-Graduate	5	8.48
Employment		
Employed Full-time	39	66.10
Employed Part-time	2	3.39
Retired	18	30.51
Income		
<\$20,000	13	22.03
\$20,000-39,999	13	22.03
\$40,000-59,999	18	30.51
\$60,000 and above	15	25.42

RESULTS

Hoisington is a city in Barton County, Kansas located just 11 miles north of Great Bend, a much larger town and the county seat of Barton County. According to the 2000 Census, the population of Hoisington was 2,975, and it was ethnically homogenous (98% White and 2% American Indian and African American). The population was stable with 54% female and 46% male. The median age (in years) was 40.6 in 2000 and 30% of the population was over 65. The median household income was close to \$30,000. While 76% of the 1,252 occupied housing units were occupied by homeowners, the balance was occupied by renters (U.S. Census Bureau 2000). Prior to the 2001 tornado, Hoisington was last struck by a tornado 82 years ago in 1919.

As noted earlier, the analysis in this study is based on responses of the 59 tornado victims in Hoisington. Overall, respondents represent relatively more males, more elderly, and more people of higher socio-economic class. This is partly because the tornado hit one particular part of the city (Figure 1). Although the tornado struck so fast that none of the warning systems had time to go operational, the formation of severe storms was reported in the neighboring counties to the west around 9:00 p.m. There was a report of a possible funnel cloud five miles north and two miles west of Great Bend at 9:14 p.m. At 9:16 p.m., the National Weather Service inquired about cloud features in the Hoisington Area and three minutes later there was a report of a funnel cloud at Hoisington, followed shortly by a report of a wall cloud. At that time, no one knew that an F-4 tornado had just touched down and passed through the northern part of the town, because no tornado warnings had been issued (Haneke 2001).

Extent of Assistance Received

According to the damage estimates reported by the 59 survey respondents, losses incurred by the 2001 Hoisington tornado amounted to over \$12 million. This figure represents an average loss of \$207,735 per respondent household. This substantial amount provides an indication of the severity of the tornado. In addition to the four major sources considered in this study, support was also provided by individuals – such as friends, relatives, and employers. Friends and relatives of tornado victims primarily helped by providing free labor to clean damaged houses. Types of support received by victims from the four major sources included: cash, checks, low interest loans, credit utilities, food, rental assistance, and clothing. Two temporary shelters were established by the ARC for the tornado victims.

When expressed as a dollar value, support received by survey respondents from the four major sources totaled about \$8.56 million, a figure which represents about 70% of the total amount of damage reported by the respondents. This percentage is much higher than the amount of emergency assistance received by the 1998 flash flood victims in two Kansas cities – Augusta and Arkansas City (Paul 1999). Respondents of these two cities received only 26% of the total reported loss of properties. A careful examination of the collected data revealed that at least four respondents received more support than the amount they lost and seven respondents received support equivalent to the amount they lost. This implies that coordination, cooperation, and communications among the organizations involved in distributing relief and emergency assistance to Hoisington tornado victims was lacking.

Analysis of the survey data reveals that all but one respondent received support from multiple sources; most respondents received support from three of the four major sources. The largest number of respondents obtained support from private insurance companies (44) followed by volunteer organizations (41), business communities (27), and government agencies (21). In monetary terms, private insurance companies rank first with respect to the amount of support provided to survey respondents. Private insurance companies accounted for 91.23% of all support received by victims followed by government agencies (6.08%), volunteer organizations (2.02%), and business communities (0.67%). Eight respondents who reported estimated damage in monetary terms did not specify the amount of support they received by four major sources.

Ranking, in terms of the number of respondents received and the amount of assistance provided by three of the four major sources differs considerably. Government agencies provided emergency assistance to the least number of respondents but when the value of the assistance is rated, this source ranks second. However, at just over 6% of total amount, the support provided by the government agencies seems to be unexpectedly low. Government sources accounted for slightly over 64% of all support received by 1998 flash flood victims of Augusta and Arkansas City, Kansas (Paul 1999). This sharp contrast may be explained by the nature of damage caused by different types of natural phenomena.

Usually, the number of homes entirely and partially damaged by a tornado is much higher than the number damaged during a flash flood or severe flooding. Damage to homes and automobile is usually the most costliest loss wrought by tornados. As in other cities, most victims in Hoisington received homeowners and/or auto insurance payments from private insurance companies. As a result, this source ranks first for both number served, and the amount of emergency assistance provided to tornado victims. The Small Business Administration (SBA), a federal disaster agency, provided low-interest loans to several respondents, FEMA provided rent payments and helped in clean up, and the City of Hoisington distributed checks to the tornado victims.

Volunteer organizations helped through recovery with items tornado victims need immediately, such as food and water, clothing, shelter, medical aid, cash, and vouchers. Local and non-local businesses supported disaster relief efforts by donating cash, checks, and goods. Although in monetary terms, business community ranks last, it supplied assistance to a larger number of respondents than government agencies. In the past, business community involvement and participation in disaster relief distribution programs has been much less significant (Paul 1999; Witt 1997). It appears that the business community is beginning to respond to the government's request to become a full-partner in the national emergency management system (Witt 1997).

Level of Satisfaction with the Support Received

Satisfaction with support provided by volunteer organizations. Among all four sources of support considered in this study, respondents were most satisfied with the support they received from volunteer organizations. Forty (67.80%) of the 59 respondents reported that they were very satisfied with the emergency assistance supplied by the volunteer organizations involved (Table 2). Only four respondents (7.78%) indicated they were either dissatisfied or very dissatisfied, and four respondents (7.78%) were neither satisfied nor dissatisfied with emergency assistance provided by volunteer organizations (Table 2). The mean score is 1.54, which indicates that the respondents, as a group, were satisfied with the support they received from volunteer organizations.

Table 2. Respondent satisfaction level with emergency support by sources.

Source	Satisfaction Level					Mean
	1	2	3	4	5	
Government Agencies	9	14	9	10	17	3.2
Private Insurance Companies	38	13	2	4	2	1.63
Volunteer Organizations	40	11	4	3	1	1.54
Business Communities	17	14	7	7	14	2.78
Overall Satisfaction	23	19	13	3	1	1.98

Respondents were satisfied with volunteer organizations even though volunteer organizations rank second and third, respectively, for number served and amount of support provided to tornado victims. This is not an unexpected finding since earlier studies reported a similar satisfaction level with volunteer organization (Paul 1999). Volunteer organizations are often the first to respond to the needs of disaster victims and the last to leave disaster-affected areas. They quickly move to the disaster area and immediately begin helping victims recover from the disaster. Unlike other sources, many volunteer organizations such as the ARC, the Salvation Army, the Knights of Columbus, Lions Club, Adventist Community Services and other church groups, and numerous individual volunteers arrived to the tornado-affected Hoisington immediately after the disaster hit the community. These organizations provided clothes, meals, drinking water, shelter, medical emergency aid, cash, and offered to help in cleaning and transporting debris.

More than half of the respondents claim that volunteer organizations were very helpful, friendly, and caring. They were always ready to assist tornado victims with help and support. One respondent wrote that "the Red Cross was fantastic with their help both with supplies, food, water, and emotional help. The Salvation Army helped financially." Another respondent echoed the same sentiment:

I am glad our community was helped by other counties, cities, and volunteers with trucks, tractors, and loaders. ... The Salvation Army, Red Cross, Mennonite Disaster, and other church organizations were very helpful. They had a plan and were super. It is very nice to go eat a warm (free) meal and go right back to work. We had to buy very little or any thing during this time.

Satisfaction with support provided by private insurance. Respondents were asked to express their satisfaction with the support provided by private insurance companies using the five-point Likert Scale. The average score was 1.63, indicating the vast majority of respondents were satisfied with the assistance they received from the insurance companies. Three insurance companies (State Farm, American Family, and Farm Bureau) provided payment to respondents for claims involving losses to their homes and cars. Some 38 respondents (64.41%) indicated they were very satisfied with this source of support (Table 2). Immediate response was the main reason for high level of satisfaction of the respondents with this source of support. One respondent claimed that insurance companies representatives were there the next day with a check. However, not all respondents were equally satisfied with the insurance companies. One respondent wrote that "we were very satisfied with the help given other than the one insurance company."

Satisfaction with support provided by business community. Average satisfaction level with this source is less than three, indicating the respondents, as a group, were satisfied with business community efforts and support for tornado victims of Hoisington. As indicated earlier, both local and non-local business communities were involved in distributing relief goods to tornado victims. For example, Dillons grocery stores throughout Kansas raised funds through customer donations to help tornado victims. Similarly, Marmie auto dealerships of Great Bend, Kansas, donated \$20,000 to the relief effort (*Associated Press* 2001a). McDonalds and Ohse Meats each left a refrigerated semi-trailer full of food for the victims (*Associated Press* 2001b). Eight local and area banks established a joint ownership account program for disaster victims.

Satisfaction with support provided by government agencies. Likert Scale ratings show that of the 59 respondents, 23 (38.98%) were either satisfied or very satisfied, while 27 (45.76%) were either dissatisfied or very dissatisfied. Nine respondents (15.25%) were neither particularly satisfied or dissatisfied with government agency support efforts (Table 2). The average score is 3.20, which indicates that respondents as a group, were neither appreciably satisfied nor dissatisfied with the support they received from government agencies. Among the four sources of support considered in this study, government agencies received the lowest average rating. This finding is consistent with existing literature which suggests that victims of natural disasters are typically dissatisfied with official government response to extreme events, especially when compared with other sources of support (Paul 1999; Tobin and Montz 1997).

Tornado victims were dissatisfied with government source for many reasons. Fifteen respondents were very unhappy because it took more than a week to get FEMA and SBA personnel to Hoisington, and they thought faster declaration of the city as disaster area would have been helpful to the disaster victims. Both FEMA and SBA administered aid primarily to those without insurance, but many victims had both home and automobile insurance. As many as 20 respondents expressed dissatisfaction with the services provided by FEMA and SBA. Specifically, most complained that it was hard to contact FEMA personnel. They further criticized the slowness of the process required to receive payments and the incredible amount of documentation required. One respondent wrote about his experience with SBA: "SBA was a pain to deal with until the last man I am currently working with. He is the fifth person to help me with my loan."

Nearly half of the respondents expressed their dissatisfaction with the city of Hoisington. They indicated they felt that the city was not disclosing the true amount of money received as aid from various sources because they suspected that the city was making a profit from the tornado. Additionally, new zoning regulations were imposed after this tornado event, making it extremely difficult and expensive to relocate at Hoisington. According to comments of some respondents, the regulation was not uniformly implemented – the city waved the rule for the rich.

Some respondents were also not pleased with the way the Barton County Sheriff Department (BCSD) was handling emergency assistance. Several respondents mentioned that the department played politics and held up volunteer help. In fact, one of the reserve deputies of the BCSD asked contractors and farmers who arrived with heavy equipment to clear debris free of cost after the tornado hit Hoisington to shut down. As a result, the victims had to pay for work that could have been done for free by volunteers (*Associated Press* 2001c). This not only annoyed the victims, but also the emergency management authorities. Victims and disaster relief personnel usually need and welcome all the volunteers they can get. One person from the Kansas Division of Emergency Management mentioned, "I've never heard of anyone asking people not to volunteer or ordering people to shut down equipment" (*Associated Press* 2001c). Reports of other relief effort irregularities were also published in local and regional newspapers (Lefler 2001).

Overall satisfaction with support. Respondents, in general, were happy about the support they received from four major and other minor sources such as friends and relatives. Survey data shows that 23 (38.98%) of the 59 respondents were very satisfied with emergency assistance they received from various sources (Table 2). Another nineteen respondents (32.20%) reported their satisfaction with sources of emergency assistance. Thirteen respondents (22.03%) were neither satisfied nor dissatisfied. The remaining four respondents (6.78%) were dissatisfied. The average satisfaction score is 1.98 (Table 2). This score indicates that, according to survey respondents, all four major sources responded satisfactorily in meeting the emergency needs of the tornado victims.

Although a relatively large number of respondents were unhappy with government agency responses, they, in general, were thankful to all organizations and individuals involved in responding to the disaster. Many respondents wrote very

positive comments about the role played by the sources in providing assistance quickly and timely for victims who need to rebuild their homes and restore their lives. One respondent expressed his gratitude in the following way: "We have appreciated so much the help we received after the tornado. The clean up and recovery began immediately with help from so many different sources." Another respondent echoed the same sentiment: "We truly feel blessed to have received so much support following the 2001 Hoisington tornado." Yet another respondent wrote: "Overall the outpouring of help was excellent."

Overall respondent satisfaction with the support received from the four selected sources were analyzed in relation to six personal and household characteristics (gender, marital status, age, education, employment, and income) through Chi-square tests of association procedure. As noted earlier, the respondent satisfaction was measured at five levels. Irrespective of insurance status, all survey respondents received disaster assistance from one or more of the selected sources. Perhaps for this reason, an overwhelming majority of the respondents expressed satisfaction with the assistance provided. However, this situation results in a skewed distribution of respondents on the five-level Likert Scale, which restricts performing Chi-square tests. Many of the cells contained less than 5 and thus Chi-square is not a valid test in this situation.

In order to have an adequate number of respondents per cell, the respondent satisfaction level was dichotomized using "satisfied" or "not satisfied." The first two levels (1-2) of Likert Scale were merged into one level, while the last three levels (3-5) merged into another level. As noted earlier, the score 3 refers that the respondents was neither dissatisfied nor satisfied. This level is aggregated with levels 4 and 5 and referred to as not satisfied. Even with this dichotomized scale, none of the six Chi-square values were statistically significant, meaning that the personal and household attributes of the respondents played no role in victim satisfaction with support received. This, in turn, suggests that relief distribution efforts were impartial and unbiased.

Relief Problems Experienced by Respondents and Ways to Improve Future Disaster Assistance Efforts

Respondents were asked to specify problems they faced in obtaining disaster assistance from the four major sources. They were also requested to provide their opinions about how support entities can improve future emergency assistance efforts. Thirty-three (55.93%) of the 59 respondents responded to these questions. The majority of the remaining 26 respondents (44.07%) mentioned that they did not experience any problems receiving disaster assistance. Some of them indicated that disaster assistance activities progressed smoothly, and therefore, did not offer any suggestions for improvement.

Many respondents indicated they had no insurance coverage for every item they lost and needed assistance to replace those lost items. The vast majority of respondents with no insurance expressed dissatisfaction with the amount of time spent completing necessary documentation and also the duplication of documentation. At least three uninsured respondents noted they had difficulty in completing forms and obtaining transportation. Even respondents with insurance experienced difficulties receiving aid from sources other than insurance companies. Three respondents with adequate insurance coverage thought that they were penalized for having insurance. One respondent complained about deadlines set by some agencies for submitting application to receive disaster aid. This respondent was extremely busy in cleaning up and had limited time to respond to the deadlines.

Lack of communication among different agencies involved with providing disaster assistance was mentioned by nine respondents. They maintain that FEMA and other public agencies promised a good deal of support that victims never received. Five respondents indicated sight seers sometimes hampered trucks and heavy equipment from fluid mobility. More than half of the respondents indicated cash or vouchers were more useful and helpful to them than the provision of loans. Two respondents requested to not donate old clothing unless it is in perfect condition. Two other respondents noted difficulties in buying a house in Hoisington subsequent to this tornado. One respondent indicated he would have liked to have had legal advice available.

Suggestions respondents offered were consistent with the problems they noted in obtaining disaster assistance from the four major sources considered in this study. Needs and suggestions mentioned by more than one respondent are listed below:

- There is a need for better communication among relief sources involved in disaster assistance and between the sources and disaster victims.
- Town meetings and memos would help coordinate the works of different agencies.
- A pre-disaster plan is needed to speed efficient clean up work.
- Some form of assistance, preferably cash, needs to be available for disbursement by government agencies to all disaster victims.
- Assistance should be made available to assist victims with completing necessary documentation in order to receive emergency aid.
- Housing needs to be available for disaster victims until they are able to secure accommodations on their own.
- Experienced and knowledgeable crews should be employed to speed clean up and other emergency work.

CONCLUSION

An F-4 tornado ripped through the small central Kansas town of Hoisington on the evening of April 21, 2001. Although no tornado warnings were given, numerous organizations and individuals came forward with assistance in the aftermath. This study examined tornado victim satisfaction with emergency assistance provided by government agencies, private insurance companies, volunteer organizations, and the business community. Overall satisfaction with the support respondents received and their satisfaction with each source of assistance was assessed by a sample survey administered among tornado victims in Hoisington.

Analysis of survey data clearly suggests that most tornado victims were satisfied with the four sources of disaster support considered in this study. Respondents were most satisfied with volunteer organization support and least with government agency support. Despite general satisfaction respondents faced difficulties in obtaining support from these sources. Based on the problems they confronted, respondents offered suggestions regarding how these sources might improve future emergency assistance efforts.

Two additional points need to be mentioned. The town of Hoisington is out of range of radar of the nearest weather station. This town has a siren warning system, but it did not activate and an elderly resident was killed while seeking shelter. Although the Hoisington tornado formed and struck very fast, warning systems should be operational under any circumstance in all communities, particularly those in tornado-prone areas. Another significant observation emerged from this study: an additional category of individual volunteers should be officially created and used. Individuals who volunteered assistance during emergencies should not be aggregated together among the category of volunteer organizations. Individual volunteers played a major role in helping the tornado victims of Hoisington cope with this disaster.

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