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Perceptions of Emergency Preparedness: A Focus Group Study of Suburban Atlanta Homeowners

Sean Patrick Kearney

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Perceptions of Emergency Preparedness
A Focus Group Study of Suburban Atlanta Homeowners

Sean Patrick Kearney

B.S., Furman University, 2000

A Thesis
Submitted in Partial Fulfillment of the
Requirements for the Degree of Master of Public Health
at the
University of Connecticut
2006
Master of Public Health Thesis

Perceptions of Emergency Preparedness
A Focus Group Study of Suburban Atlanta Homeowners

Presented by

Sean Patrick Kearney, B.S.

University of Connecticut

2006
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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. OVERVIEW</td>
<td>1</td>
</tr>
<tr>
<td>II. INTRODUCTION</td>
<td>2-17</td>
</tr>
<tr>
<td>A. Natural Hazards and Fire: An Increasing Public Health Problem</td>
<td>2-4</td>
</tr>
<tr>
<td>1. International Impact</td>
<td>2</td>
</tr>
<tr>
<td>2. Deaths and Injuries from Natural Hazards and Fires in the U.S.</td>
<td>2-3</td>
</tr>
<tr>
<td>3. Costs Associated with Natural Hazards and Fires in the US</td>
<td>3-4</td>
</tr>
<tr>
<td>4. Increasing Trends</td>
<td>4</td>
</tr>
<tr>
<td>B. Natural Hazards and Fire: Reducing the Public Health Impact</td>
<td>4-9</td>
</tr>
<tr>
<td>1. Preventing Deaths, Injuries, and Property Damage</td>
<td>4-6</td>
</tr>
<tr>
<td>2. Preparedness Campaigns</td>
<td>6-9</td>
</tr>
<tr>
<td>C. Current State of Household Emergency Preparedness</td>
<td>9-11</td>
</tr>
<tr>
<td>D. Models Governing Household Emergency Preparedness</td>
<td>11-14</td>
</tr>
<tr>
<td>1. The Risk Assessment Model</td>
<td>11-12</td>
</tr>
<tr>
<td>2. The Hazards Risk Communication Model</td>
<td>12-14</td>
</tr>
<tr>
<td>E. Factors Predicting Preparedness</td>
<td>14-15</td>
</tr>
<tr>
<td>F. Purpose of the Study</td>
<td>15</td>
</tr>
<tr>
<td>G. Assumptions</td>
<td>16</td>
</tr>
<tr>
<td>H. Research Questions</td>
<td>16</td>
</tr>
<tr>
<td>I. Importance of the Research</td>
<td>16-17</td>
</tr>
<tr>
<td>III. METHODS</td>
<td>17-26</td>
</tr>
<tr>
<td>A. Overview</td>
<td>17-19</td>
</tr>
<tr>
<td>B. Use of Focus Group Interviews</td>
<td>19</td>
</tr>
<tr>
<td>C. Focus Group Questioning Plan</td>
<td>20-21</td>
</tr>
<tr>
<td>D. Recruitment</td>
<td>21-22</td>
</tr>
<tr>
<td>E. Site Descriptions</td>
<td>22-23</td>
</tr>
<tr>
<td>F. Conducting the Focus Group Interviews</td>
<td>23-24</td>
</tr>
<tr>
<td>G. Data Analysis</td>
<td>24-26</td>
</tr>
<tr>
<td>IV. RESULTS</td>
<td>27-42</td>
</tr>
<tr>
<td>A. Participant Characteristics</td>
<td>27-30</td>
</tr>
<tr>
<td>B. Focus Group Findings</td>
<td>31</td>
</tr>
<tr>
<td>1. Defining “Household Emergency Preparedness”</td>
<td>31</td>
</tr>
<tr>
<td>1i. Theme 1: Survival supplies are needed</td>
<td>31</td>
</tr>
<tr>
<td>1ii. Theme 2: Time is a factor</td>
<td>31</td>
</tr>
<tr>
<td>2. Reported Level of Current Household Emergency Preparedness</td>
<td>31-32</td>
</tr>
<tr>
<td>2i. Theme 3: Level of preparedness depends on the situation</td>
<td>32</td>
</tr>
<tr>
<td>3. Actions Already Taken to Prepare the Household</td>
<td>32-33</td>
</tr>
<tr>
<td>3i. Theme 4: Preparing through knowledge and implementing preparedness measures</td>
<td>32-33</td>
</tr>
<tr>
<td>4. Benefits of Preparing and Consequences of Not Preparing</td>
<td>33-34</td>
</tr>
</tbody>
</table>
LIST OF TABLES

Table  

TABLE 1. Average Annual U.S. Deaths from Weather-Related Hazards:  
1995-2004 ................................................................. 3
TABLE 2. Factors That Predict Household Emergency Preparedness ........ 14
TABLE 3. Study Research Questions ........................................ 16
TABLE 4. The Steps of the Risk Assessment and Hazards Risk  
Communication Models Targeted by Each Main Focus Group  
Question ................................................................. 21
TABLE 5. Number of Participants, Locations and Times of Focus Groups .... 23
TABLE 6. Demographic Characteristics of the Focus Groups ............... 28
TABLE 7. Past Experiences with Natural Hazards and Fire .................. 29
TABLE 8. Perceived Local Susceptibility to Emergency Situations .......... 29
TABLE 9. Emergency Preparedness Actions Already Implemented ......... 33
TABLE 10. Additional Ways to Prepare Mentioned by Individual Focus  
Groups ........................................................................... 35
TABLE 11. Descriptions of Past Experience Influence on Household  
Preparedness .................................................................... 36
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIGURE 1. Stages of the Hazards Risk Communication Model</td>
<td>13</td>
</tr>
<tr>
<td>FIGURE 2. Steps in Conducting the Focus Group Interviews and Analysis</td>
<td>18</td>
</tr>
<tr>
<td>FIGURE 3. Level of Achievement of Common Household Emergency Preparedness Measures</td>
<td>30</td>
</tr>
</tbody>
</table>
OVERVIEW

Significant morbidity, mortality and costs are associated with household emergency situations involving natural hazards and fire in the United States. Preparing the household for emergencies can reduce deaths, injuries and costs associated with natural hazards and fire. Many households are poorly prepared for emergency situations involving natural hazards and fires even though several credible organizations provide readily available preparedness recommendations. Research has determined which households are more likely to prepare for emergencies, but little is known about the social-psychological processes that determine why some households prepare for emergencies, while others do not. To investigate these factors, three focus group interviews were conducted with suburban Atlanta homeowners. It was found that, although not well prepared for household emergencies, these homeowners have sufficient knowledge about how to prepare. Using two models describing emergency preparedness behavior, the stages in these models where homeowners fail to convert their knowledge into preparedness actions were discovered. In addition, two motivations reported to stimulate household emergency preparedness were identified; family and past experiences with household emergencies. These motivators were used to make recommendations for future research and preparedness campaigns aimed at encouraging households to better prepare for weather and fire-related emergencies.
INTRODUCTION

Natural Hazards and Fire: An Increasing Public Health Problem

International Impact

Natural hazards and fire are increasingly affecting public health worldwide. The International Federation of Red Cross and Red Crescent Societies (1999) estimated that, on average, natural hazards caused greater than 84,000 deaths each year from 1973 to 1997, and more than 140 million people were impacted in a significant way. Moreover, worldwide economic losses from natural hazards and fire continue to rise, jumping from about $200 billion in the 1980s to more than $600 billion in the 1990s (Abramovitz 2001). Recent events like the 2004 Asian tsunami disaster have emphasized the international public health consequences of natural hazards. Likewise, the 2005 California wildfires and the past two hurricane seasons of 2004 and 2005, culminating with Hurricane Katrina, have underscored the public health significance of natural hazards and fires in the United States.

Deaths and Injuries from Natural Hazards and Fire in the U.S.

Weather and fire-related emergencies account for thousands of deaths and injuries each year in the United States. One study estimated that from 1970-1980, about 2 million households per year (24.5 per 1,000) suffered injuries or damages from natural hazards like floods, tornados, hurricanes, earthquakes and fires (Rossi et al. 1983). Another study reported that from 1975-1994, natural hazards were involved in an estimated 24,000 deaths and 100,000 injuries (Mileti 1999). The National Weather Service reported an average of 569 weather-related fatalities per year from 1995-2004 in the United States.
Table 1 shows the average number of deaths per year for specific weather-related hazards from 1995-2004 (NOAA 2006).

TABLE 1. Average Annual U.S. Deaths from Weather-Related Hazards: 1995-2004

<table>
<thead>
<tr>
<th>Weather-Related Hazard</th>
<th>Average Annual Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat</td>
<td>235</td>
</tr>
<tr>
<td>Floods</td>
<td>84</td>
</tr>
<tr>
<td>Tornados</td>
<td>57</td>
</tr>
<tr>
<td>Wind</td>
<td>55</td>
</tr>
<tr>
<td>Lightening</td>
<td>49</td>
</tr>
<tr>
<td>Winter storms</td>
<td>44</td>
</tr>
<tr>
<td>Cold</td>
<td>24</td>
</tr>
<tr>
<td>Hurricanes</td>
<td>21</td>
</tr>
</tbody>
</table>

In 2003, 438 fatalities and 2,924 injuries were attributed to the weather (NOAA 2003). In 2004, four major hurricanes contributed to 124 deaths over a six week period in the southeastern United States (Infoplease 2004) and in 2005, Hurricane Katrina was blamed for 1,323 deaths in the southern United States (Infoplease 2005).

Additionally, residential fires are also a major contributor of household deaths and injuries in the United States. In 2002, an estimated 2,670 people died in residential fires and another 14,050 people were treated for fire-related injuries in U.S. emergency departments (Karter 2003). In 2003, there was a civilian home fire death every three hours nationwide (NFPA 2006). About half of all residential fire deaths occur in homes without smoke alarms (Ahrens 2001).

**Costs Associated with Natural Hazards and Fires in the US**

From 1975-1994, a conservative estimate of the total cost of natural hazards and disasters in the United States was $500 billion, or about $500 million per week (Mileti 1999). More recent estimates demonstrate the increasing costs associated with natural hazards and fires. In 2003, residential fires were associated with $6.1 billion in property damage (Karter 2003) and the weather contributed to $10.3 billion in property damage.
and $1.1 billion in crop loss (NOAA 2003). In 2004, four major hurricanes over a six week period were associated with more than $34.9 billion in damages (Infoplease 2004) and in 2005, Hurricane Katrina was blamed for damages estimated at $100 billion (Infoplease 2005).

**Increasing Trends**

Not only have recent U.S. natural hazard and fire-related losses been substantial, but the annual losses are trending markedly upwards (Iwan et al. 1999). Several observations have been blamed for these increasing losses. Although factors like rise in sea level, global climate change, and weather patterns associated with such phenomena as the El Niño Southern Oscillation are all processes that impact the frequency of natural hazards and fire, the consensus is that more humans and property are becoming vulnerable to natural hazards and fires (van der Vink et al. 1998; Mileti and Peek 2002). For instance, there has been a fivefold increase in the Florida population since 1950, 80 percent of which lives within 35 kilometers of the hurricane-prone coast. Moreover, the California population has nearly tripled since 1950, leaving many vulnerable to earthquakes (Iwan et al. 1999).

**Natural Hazards and Fire: Reducing the Public Health Impact**

**Preventing Deaths, Injuries, and Property Damage**

Effective preparation and response to hazards reduces morbidity and mortality, limits property damage, and minimizes disruptions in daily life (Mileti and Peek 2002). Defining and encouraging preparedness and response to hazards is challenging and has been the focus of a large body of research. This research has produced the hazards adjustment paradigm, which is based on the idea that individuals and groups choose how
to cope with or adjust to hazards in their environment (Mileti and Peek 2002). This paradigm relies on the bounded rationality model of decision making, which realizes that individuals make decisions based on limited knowledge and within the boundaries of the social system in which they live. This process leads to acceptable, though often not optimal, adjustments and outcomes (Gigerenzer and Selten 2002). The bounded rationality model combined with the hazards adjustment paradigm generated a five-step strategy for coping with hazards as follows: (1) assess hazard vulnerability, (2) examine possible adjustments, (3) determine the human perception and estimation of the hazard, (4) analyze the decision making process, and, (5) given the social boundaries, identify the best adjustments and evaluate their effectiveness. Policies developed from this paradigm to reduce morbidity, mortality, and property damages from natural hazards are organized conceptually in a four-stage cycle of preparedness, response, recovery, and mitigation (Mileti and Peek 2002).

Mileti and Peek (2002) suggest that preparedness is the process of developing a response and management capability before an emergency occurs in order to anticipate and address potential problems so that needed resources are in place before the event arises. This process includes establishing hazard detection and warning systems, identifying evacuation routes and shelters, maintaining emergency supplies and communication systems, establishing procedures for notifying and mobilizing key personnel, and educating and training responders, citizens, and community leaders.

Response refers to the actions taken immediately before, during, and after a hazard or fire with the intent of saving lives, minimizing property damage, and enhancing the recovery process. During this recovery process, actions focus on short-term activities,
like restoring vital support systems (e.g., electricity and phone lines) as well as long-term endeavors to return to normal life. (Mileti and Peek 2002).

Mitigation refers to the policies and actions concerned with reducing vulnerability to natural hazards and fire. Mitigation can involve activities like engineering land or buildings to keep hazards or fire away from people (e.g., flood plains, tornado shelters), constructing buildings that can withstand hazards, and attempting to distribute the population and buildings to limit exposure to a single hazard (e.g., zoning laws). (Mileti and Peek 2002).

This study focuses on the preparedness aspect of this cycle, which can occur on multiple societal levels, from international preparedness campaigns to individual efforts.

**Preparedness Campaigns**

As losses from natural hazards and fire increase, government and non-government organizations have incorporated preparation and mitigation efforts into their hazard management plans that previously relied primarily on response and recovery strategies (Iwan et al. 1999). Built on substantial work by federal agencies like the National Science Foundation, the U.S. Geological Survey, and the National Oceanic and Atmospheric Administration, the Federal Emergency Management Agency (FEMA) has led the way in promoting mitigation and preparation efforts. FEMA established a Mitigation Directorate that focuses on better preparing for and limiting losses from natural hazards and fires (FEMA 1995). As part of this directorate, FEMA implemented Project Impact, a funding program available to state and local governments for pre-disaster mitigation and preparation efforts (FEMA 2003). Since inception, Project Impact has partnered with more than 250 communities and 2,500 businesses nationwide. Project Impact has also
partnered with other agencies like the Department of Housing and Urban Development (HUD) and the Small Business Administration (SBA) to promote mitigation and preparation efforts. As an example, in Ohio, FEMA united with HUD, the SBA, the Ohio Emergency Management Agency, local governments, citizens, and business leaders to construct “safe rooms” in efforts to reduce tornado-related deaths and injuries. Through this and similar partnerships, thousands of “safe rooms” have been built in tornado-prone areas (FEMA 2000).

Recognizing that preparedness and mitigation efforts start at the household level, several national agencies promote individual and family preparedness and mitigation efforts. FEMA (www.fema.gov), the Centers for Disease Control and Prevention (CDC) (www.bt.cdc.gov), and the Department of Homeland Security (DHS) (www.ready.gov) all offer websites with general information about fire and weather-related emergencies as well as several recommendations about how individuals and families can prepare their households for natural hazards and fires. For example, the CDC-sponsored Emergency Preparedness and Response website (www.bt.cdc.gov) presents key facts and preparation recommendations for several natural hazards. In addition, these agencies offer free publications on how to prepare for specific hazards. For instance, the DHS provides a brochure called “Preparedness Makes Sense. Get Ready Now”, which focuses on how to prepare for a potential nuclear, biological, or chemical exposure (DHS 2006).

Several non-government organizations also sponsor national preparedness campaigns. The American Red Cross (ARC) operates a website (http://www.redcross.org/services/prepare/) dedicated to emergency preparedness education in the home, school, business and community. Like the government-sponsored
websites described above, the ARC website offers facts, recommendations and publications to aid in preparing for several potential emergency situations. Additionally, the ARC publishes a substantial number of free or low-cost preparedness materials available to individuals, families, educators and public officials for use in promoting emergency preparedness on many levels (American Red Cross 2002a). For example, an ARC publication called, “Your Family Disaster Plan”, describes four steps to disaster safety: finding out what can happen, planning, preparing, and practicing. It is available both online (http://www.redcross.org/services/disaster/0,1082,0_601_00.html) and at local ARC chapters for a nominal fee (American Red Cross 2002b).

National government and non-government preparedness initiatives and campaigns target state and local preparedness efforts (FEMA 2000). Most states have an emergency management agency responsible for providing emergency preparedness, response and recovery capabilities to its citizens. In Georgia, the location of this study, the Emergency Management Agency (GEMA) operates several programs and services concerned with emergency preparedness. For example, GEMA helps analyze potential hazards that communities and schools might face and develops mitigation strategies and emergency operations plans and exercises to address these hazards. GEMA also operates a 24-hour communications center as part of the emergency alert system and provides professional development, emergency preparedness instruction and field courses to public safety personnel throughout the state. During natural and manmade disasters, GEMA also acts to coordinate state response efforts. (GEMA 2006).

On a local level, many communities have educational and outreach programs that encourage individuals and families to prepare for natural hazards and fire. For example,
in Gwinnett County, the location of this study, the Emergency Management Agency conducts more than 2,000 educational programs on fire safety, disaster preparedness, cardiopulmonary resuscitation (CPR), and first aid with civic, school, business and community groups annually (Gwinnett County 2006). On the other hand, according to the Department of Health and Human Services (2002) many communities, particularly in rural areas, lack the necessary preparedness resources.

Although many national, state and local preparedness campaigns have been successful, there have been failures. Perhaps the most notable of these is the preparedness failure seen on all levels during Hurricane Katrina in 2005. A post-Katrina U.S. Senate report (SFGate.com 2006) notes preparedness failures on the federal, state, and local levels in areas involving leadership, risk assessment procedures and preparedness and mitigation campaigns, such as levee construction and preparedness education. The report also comments that, “Almost exactly four years after 9/11, Katrina showed that the nation is still unprepared to respond to a catastrophe” (SFGate.com 2006).

**Current State of Household Emergency Preparedness**

This study is primarily concerned with preparedness for natural hazards and fire on the household level. For simplicity, natural hazard and fire-related events affecting the household are referred to as household emergency situations.

Preparedness recommendations and campaigns from credible federal, state and local agencies are not a guarantee that citizens will prepare their households. Individuals and families may be aware of potential hazards, but may not prepare accordingly. Hurricane preparedness is a prime example of this. One report describes an attempt by the Puerto Rican government to raise public awareness of hurricane preparedness by
holding community meetings and disseminating brochures, warnings, and other materials. A post-campaign survey found that only 27 percent of respondents prepared for future hurricanes (Palm and Hodgson 1993). In another example, the CDC (www.bt.cdc.gov), the Florida Division of Emergency Management (www.floridadisaster.org), and Florida’s Broward County Emergency Management Agency (http://www.broward.org/disaster/) all recommend establishing a hurricane preparedness plan, yet only 43 percent of households in hurricane-prone coastal areas say they feel vulnerable to hurricanes or hurricane-related damage and only 53 percent of these households have a plan if their home is threatened by a serious hurricane (Mason-Dixon Polling Research 2005).

Looking specifically at hurricane evacuation plans, a report issued by the Centers for Disease Control following four major hurricanes in the southeastern United States in 2004 reports that 48.7 percent of Florida residents had no evacuation plan before any of the hurricanes occurred (Bailey et al. 2005). Furthermore, among adults living in hurricane-prone coastal areas, 42 percent would only evacuate if emergency officials ordered them to do so, 19 percent would probably not evacuate if ordered, and 14 percent would not leave under any circumstances (Mason-Dixon Polling and Research 2005). These findings come after several national, state and local agencies recommend having an evacuation plan as part of a general household emergency preparedness strategy.

Lack of preparedness is not only evident with hurricanes, but also with other natural hazards and fire. Norris (1992) noted that one out of seven U.S. households reported feeling threatened by natural hazards, yet only a small percentage of these individuals were acting to protect themselves from this threat. Moreover, a national survey reported that only 31 percent of respondents felt prepared for a household fire, 17
In another national survey asking homeowners about general emergency preparedness, over half of all respondents reported that their household was not well prepared (Edwards 1993). Collectively, the data suggest that the current level of U.S. household emergency preparedness is insufficient.

**Models Governing Household Emergency Preparedness**

Prior to the 1970s, research on natural hazards and disasters was divided between geographers, who focused on human ecology and loss reduction, and sociologists, who focused on human behavior and emergency preparedness and response. Beginning in the early 1970s, these two approaches were mixed with the perspectives of climatology, economics, engineering, geology, law, meteorology, psychology, public policy, seismology, and other disciplines. By the mid 1970s, an interdisciplinary effort was underway in order to discover the nation’s knowledge about hazards with the purpose of finding new directions for research and national policy concerning natural hazards and disasters. The subsequent research and policy-making, fueled in part by the Three Mile Island nuclear disaster in the late 1970s, produced the contemporary views regarding emergency preparedness. Two well-accepted models to better understand how individuals and families prepare for potential emergencies came out of this research; the risk assessment model and the hazards risk communication model. (Mileti and Peek 2002).

**The Risk Assessment Model**

According to Mileti and Peek (2002), proper preparation for a potential household emergency situation follows a risk assessment model. This risk assessment model starts with conducting a risk analysis of the potential hazards in the surrounding physical...
environment that may threaten the household. Once potential hazards are identified and risk has been determined, households can take actions to control the risks. These actions may include installing or becoming aware of emergency warning systems, stocking emergency supplies, maintaining communication systems, establishing plans and procedures to evacuate the house and community, participating in training and education programs designed to improve preparedness, and anticipating and preparing for any contingencies that may develop in an emergency situation. For example, coastal residents in the southern United States ideally recognize vulnerability to hurricanes, assess the risks associated with living in a hurricane zone, and prepare accordingly to avoid death and injury and to limit property damage.

**The Hazards Risk Communication Model**

The disaster research field has studied how to effectively communicate risk to the public. The focus is on how people become aware of warning messages and recommendations and, subsequently, how they act on these messages through preparation and mitigation efforts (Blanchard-Boehm 1998). This research has produced a widely accepted hazards risk communication model that is used to predict the behavior of the public when they are exposed to warning messages and recommendations concerning risks such as natural hazards and fires (Blanchard-Boehm 1998). This model encompasses five fundamental stages that individuals go through when presented with a warning message or recommendation. These stages are (1) hearing the message, (2) understanding its content, (3) internalizing or believing the salience of the message, (4) confirming personal interpretation with others, and, (5) acting or responding to the

Figure 1 summarizes the stages of the hazards risk communication model.

**FIGURE 1. Stages of the Hazards Risk Communication Model**

1. Hear the message or recommendation
2. Understand the content
3. Internalize or believe the message or recommendation
4. Confirm with others
5. Act or respond to save life and property

Originally, the hazards risk communication model focused on how individuals responded to warning messages during urgent situations (Blanchard-Boehm 1998). More recent research has focused on applying this model for the purposes of education and prevention before a crisis arises. Mileti and colleagues have applied the hazards risk communication model to long-term emergency preparation efforts (Mileti, Fitzpatrick et al. 1990a; Mileti, Farhar et al. 1990; Mileti, Darlington et al. 1993). In one study, Mileti and Farhar (1990) disseminated an earthquake information brochure after the U.S. Geological Survey predicted that a 5.5 – 6.0 magnitude earthquake would strike an area of California during 1985 – 1993 with a 90 percent certainty of occurrence. The recipients of the brochure were later surveyed to investigate what they remembered about the brochure, what they did to prepare for a future earthquake, and how the information
affected their perceptions of earthquakes and their vulnerabilities to earthquakes. It was found that respondents did indeed go through the stages outlined in the hazards risk communication model when processing the messages and recommendations contained in the earthquake information brochure. In a similar study, an earthquake warning was issued to two million residents in the San Francisco Bay Area after the scientific community had announced that the probability of future earthquakes in the area was significantly increased. This study later surveyed residents and also found that they went through the steps outlined in the hazards risk communication model when responding to the earthquake warning (Blanchard-Boehm 1998).

Factors Predicting Preparedness

The economic, social and political factors that influence the adoption of emergency preparedness strategies are complex (Iwan 1999). Several of the factors that predict household emergency preparedness have been identified (Mileti 1999). Table 2 summarizes these factors.

<table>
<thead>
<tr>
<th>TABLE 2. Factors That Predict Household Emergency Preparedness</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Being a homeowner</td>
</tr>
<tr>
<td>2. Long-term residence in a community</td>
</tr>
<tr>
<td>3. High level of social involvement in the community</td>
</tr>
<tr>
<td>4. Attentive to news media</td>
</tr>
<tr>
<td>5. Concern about other types of social and environmental cues</td>
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<tr>
<td>6. Responsible for the safety of school-aged children</td>
</tr>
<tr>
<td>7. Personal experience with disaster damage</td>
</tr>
<tr>
<td>8. Receive disaster education of some kind</td>
</tr>
<tr>
<td>9. Ability to afford preparation steps</td>
</tr>
</tbody>
</table>

The demographic characteristics that predict which homeowners are more likely to adopt recommendations in preparing for emergency situations have also been identified. In a study about earthquake preparedness, households with a higher education level and a higher annual income were more likely to prepare (Edwards 1993). In general,
white homeowners and homeowners with higher socioeconomic status are generally better prepared for emergencies than non-whites and those with lower socioeconomic status (Mileti and Peek 2002). Also, households containing children are also more likely to prepare for emergency situations (Edwards 1993). Middle-aged individuals are more likely to adopt household preparation measures compared to their younger and older counterparts (Turner 1986).

**Purpose of the Study**

Although some of the factors that affect household emergency preparedness are known, there is still no thorough understanding of the social-psychological processes involved in preparedness decision making (Mileti and Peek 2002). In short, there is knowledge about who prepares, but not why (Mileti and Fitzpatrick 1993).

Social-psychological processes are influenced by social contexts and are manifested as attitudes, beliefs, motivations and barriers (Mueller 2006). For instance, individuals may not prepare for emergency situations because they may believe such a situation will never happen to them. The purpose of this study was to gain a better understanding of the social-psychological processes that influence how homeowners go through the stages of the risk assessment and the hazards risk communication models. The ultimate goal was to discover why some homeowners reach the final stages of these models where they actually engage in preparation efforts and why others do not. By doing this, recommendations can be made about how to improve the development of emergency preparedness recommendations and how to better reach homeowners with these recommendations.
Assumptions

Prior to conducting this study, it was assumed that homeowners were failing to complete one or more steps of the risk assessment or hazard risk communication models. For instance, in the risk assessment model, homeowners may not be conducting a risk assessment of the potential household emergencies to which they are susceptible or, if they are, they may not be taking the necessary actions to prepare for these risks. Moreover, in the hazards risk communication model, homeowners may be failing to hear, understand, believe, confirm, or act on warning messages or preparedness recommendations.

Research Questions

To address these assumptions, several research questions were developed to elicit the social-psychological processes (i.e., attitudes, beliefs, motivations and barriers) that might be involved in completing the steps of the risk assessment and hazards risk communication models. Table 3 lists the research questions for this study.

<table>
<thead>
<tr>
<th>TABLE 3. Study Research Questions</th>
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<tbody>
<tr>
<td>1. What does “household emergency preparedness” mean to homeowners?</td>
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<tr>
<td>2. What is the current level of emergency preparedness among homeowners?</td>
</tr>
<tr>
<td>3. What are the motivations that influence homeowners to prepare?</td>
</tr>
<tr>
<td>4. What are the barriers that homeowners face when preparing?</td>
</tr>
<tr>
<td>5. Where are homeowners getting information regarding emergency preparedness and what kind of information they are receiving or would like to receive?</td>
</tr>
<tr>
<td>6. Are there better ways to inform homeowners about emergency preparedness? If so, what are they?</td>
</tr>
<tr>
<td>7. What can be done to better help homeowners prepare for potential emergency situations?</td>
</tr>
</tbody>
</table>

Importance of the Research

It is important to gain insight on how best to encourage currently prepared households to maintain or improve their efforts and how best to convince unprepared
households to take emergency preparation actions. This is because households may have to wait 72 hours or longer for assistance from fire, police, medical, food, shelter and communications organizations depending on the severity of an emergency (Valussi 1984; Smith et al. 1995). It is important that households be prepared to help themselves during the time after an emergency when local, state, and national relief agencies may be unable to respond fully and immediately (Wilson 1990; De Marchi 1991). Prepared households with the ability to help themselves also would allow emergency relief agencies to focus resources on reestablishing vital functions, such as utilities, communications, transportation routes, medical facilities and performing search and rescue operations (Blanchard-Boehm 1998). Assistance could be directed to more vulnerable populations like the elderly, children and disabled.

METHODS

Overview

Three focus group interviews were conducted with metro-Atlanta homeowners. Several pre-determined questions were used to elicit attitudes, beliefs, motivations and barriers surrounding household emergency preparedness. Themes, or patterns in the data, were identified and used to determine the stages in the risk assessment and hazards risk communication models that homeowners might not be completing. These themes, combined with results from a demographic survey, were used to make suggestions about improving future research on preparedness warnings and recommendations in attempts to encourage currently prepared households to maintain or improve their efforts and to influence unprepared households to take emergency preparation actions. Figure 2 outlines the process involved in conducting the focus group interviews and analysis.
FIGURE 2. Steps in Conducting the Focus Group Interviews and Analysis

Select 2 Atlanta homeowners’ associations from established networks

Contact all members of selected homeowners’ associations to identify interested study participants

Administer the Participant Screening Questionnaire to any interested member of the homeowners’ associations

Identify eligible participants

Exclude any person:
1. Under 18 years old
2. Non-English speaking
3. Non-homeowner
4. Primary residence outside of metro-Atlanta

Allow participants to sign-up for 1 of 3 available focus group dates

Assemble participants for scheduled focus group

Administer the Participant Consent Form to all participants

Exclude anyone who is unable to commit to any of the dates

Exclude any participant who does not consent

Conduct focus group interview with consented participants

Administer the Participant Demographic Survey

Compensate and thank participants

Conduct research team debriefing

Transcribe tape recordings and identify themes

Create final report
The role of the author in this study was to perform the literature review, create the study protocol, analyze the focus group transcripts and make recommendations and conclusions based on the focus group results. CDC employees and staff were responsible for conducting the focus group interviews and transcribing the recordings produced from these interviews. Institutional review board approval to conduct this study was obtained from the Centers for Disease Control (CDC) and the University of Connecticut Health Center.

**Use of Focus Group Interviews**

Focus group interviews allowed the opportunity to speak directly with homeowners to identify a range of attitudes, beliefs, motivations and barriers surrounding household emergency preparedness. A focus group approach allows ideas to emerge not only from the individual group participants, but also from the group as a whole (Krueger 2000). Focus groups are also a useful way to provide insight into complicated topics when the area of concern (i.e. household emergency preparedness) demonstrates multifaceted behavior or motivation (Krueger 2000). The qualitative data gained from focus groups helps direct future studies and identifies areas for more in-depth investigations.

The ideal size for focus groups is 5 – 8 members for most non-commercial topics addressing complicated issues (Krueger 2000). In addition, in order to reach the point of saturation, where a range of ideas has been expressed without any new information emerging, three to four focus groups are required (Krueger 2000).
Focus Group Questioning Plan

Using a focus group question design protocol described by Krueger (2000), the focus group questions assessed each particular aspect of the risk assessment and hazards risk communication models in order to better understand the attitudes, beliefs, motivations and barriers associated with household emergency preparedness. Table 4 summarizes the main questions from the focus group questioning plan and notes which steps of the risk assessment and hazards risk communication models each main question was meant to target. It should be noted that all the main questions have several associated follow-up questions that may specifically target one aspect of the models. For example, the main question “Where have you learned about preparing for household emergency situations?” contains the follow-up question “Tell us about any national warning messages or recommendations that you’re aware of”. This associated question is meant to target the hearing stage in the hazards risk communication model. Collectively, the focus group questions assessed all stages of the risk assessment and hazards risk communication models. See Appendix A: Focus Group Questioning Plan for a complete list of questions.
<table>
<thead>
<tr>
<th>Focus Group Question</th>
<th>Target of Risk Assessment Model</th>
<th>Target of Hazards Risk Communication Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>What does preparing for a household emergency mean to you?</td>
<td>Conducting a risk assessment</td>
<td>Hearing and understanding warnings or recommendations</td>
</tr>
<tr>
<td>How have you prepared for a possible household emergency situation?</td>
<td>Conducting a risk assessment Actions taken to minimize risk</td>
<td>Hearing, understanding, believing, confirming, and acting on warnings or recommendations</td>
</tr>
<tr>
<td>What are some problems in preparing for a household emergency situation?</td>
<td>Conducting a risk assessment Actions taken to minimize risk</td>
<td>Hearing, understanding, believing, confirming, and acting on warnings or recommendations</td>
</tr>
<tr>
<td>What would motivate you to prepare and maintain preparation?</td>
<td>Conducting a risk assessment Actions taken to minimize risk</td>
<td>Hearing, understanding, believing, confirming, and acting on warnings or recommendations</td>
</tr>
<tr>
<td>Where have you learned about preparing for household emergency situations?</td>
<td>Conducting a risk assessment</td>
<td>Hearing and understanding warnings or recommendations</td>
</tr>
<tr>
<td>What can be done to help you better prepare?</td>
<td>Conducting a risk assessment Actions taken to minimize risk</td>
<td>Understanding, believing, confirming, and acting on warnings or recommendations</td>
</tr>
</tbody>
</table>

**Recruitment**

Homeowners’ associations were identified as a convenient source for recruiting focus group participants. These associations often have established methods to contact all of their members and many have meeting places where focus group interviews can be conveniently conducted.

The names of local homeowners’ associations were solicited from employees in the Division of Unintentional Injury Prevention at the Centers for Disease Control. A total of two associations were identified and contacted, Site A and Site B. Working through a contact person at each homeowners’ association, all association members were notified.
about the opportunity to participate in the study through established telephone, email and newsletter networks. General information about the study, dates and times for the focus group discussions, and instructions on how to participate were provided. A screening process was conducted to limit the potential study participants to English-speaking homeowners at least eighteen years-old who lived primarily in the metro-Atlanta area (see Appendix B: Participant Screening Questionnaire). Two focus groups were formed at Site A and one group at Site B.

**Site Descriptions**

Both of the homeowners' associations were located in Gwinnett County, situated 30 miles northeast of Atlanta, Georgia. In 2003, the county population was 666,651. The median age was 32.8 years old and 467,919 identified their primary race as white. There were 228,654 households, with 97,533 housing one or more people under 18 years old and 24,651 with one or more people over 65 years old. The average household size was 2.92 people and the average family size was 3.51 people. Educationally, 87.8% were high school graduates or higher and 36.7% had a bachelor’s degree or higher. The median household income was $61,049 and the median value of a home was $167,365. (American Community Survey 2003).

Gwinnett County has a temperate climate, with average low temperatures of 33.5 degrees in January and average high temperatures of 89.4 degrees in July. The county is subject to several weather-related hazards to include severe thunderstorms and lightening, tornados, floods, hurricanes, and snow and ice storms. (rssWeather.com 2006).

Site A is a community of 232 homes with sale prices ranging from the mid $200,000’s to the low $300,000’s (patsabin.com 2006). Site B is a community of over
500 homes with a price range from the low $200,000’s to the low 300,000’s (WikiBroker 2006).

**Conducting the Focus Group Interviews**

Before beginning the focus group interviews, all group members gave informed consent to participate in the study and were asked to complete a survey, which asked about demographic characteristics as well as previous experience with household emergencies and preparedness efforts (see Appendix C: Participant Demographic Survey). This information was used to assess the similarities and differences between the focus groups and to assist with interpretation of data.

All focus group interviews were conducted in the communities where the participants lived. The interview team was composed of two CDC staff members acting as a moderator and co-moderator team. The moderator was solely responsible for asking the questions and guiding group discussion. The co-moderator and the moderator gave informed consent, administered the demographic survey, operated the recording devices, and took part in a team debriefing session following each interview. Table 5 summarizes the locations, times, and number of participants in each focus group.

<table>
<thead>
<tr>
<th>Focus Group</th>
<th># of Participants</th>
<th>Location</th>
<th>Date and Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A</td>
<td>6</td>
<td>Home at Site A</td>
<td>Thursday, Sept. 1, 2005 7:00 PM</td>
</tr>
<tr>
<td>Group B</td>
<td>4</td>
<td>Clubhouse at Site A</td>
<td>Tuesday, Dec. 6, 2005 7:00 PM</td>
</tr>
<tr>
<td>Group C</td>
<td>6</td>
<td>Clubhouse at Site B</td>
<td>Monday, Jan. 30, 2006 7:00 PM</td>
</tr>
</tbody>
</table>

These locations provided a comfortable, distraction-free environment conveniently located in the communities where the participants lived. The groups were arranged in a
circle to foster participation (Krueger 2000) and were recorded in their entirety using a standard tape recorder and two microphones located in the center of the circle. The interviews lasted approximately one hour. At the conclusion, participants were encouraged to make suggestions on how to improve the interview process and were compensated with $20 for their time.

**Data Analysis**

Tape recordings of the focus group conversations were transcribed by a professional transcriptionist. The transcriptions were read by the interviewing team while listening to the recordings to verify transcription accuracy.

A thematic analysis was conducted using the focus group transcripts. The first step in a thematic analysis is to collect the data. Audiotapes should be used to collect data from an interview session (Spradley 1979). The next step is to identify all data that relate to already classified patterns, meaning that all of the discussion that relates to a specific pattern is identified and placed with the corresponding pattern (Aronson 1994). The next step is to combine and catalogue related patterns into themes. Themes are defined as units derived from patterns such as conversation topics, vocabulary, recurring activities, meanings, or feelings (Taylor 1989). Themes are identified by "bringing together components or fragments of ideas or experiences, which often are meaningless when viewed alone" (Leininger 1985). Once the themes have been collected and the literature has been studied, conclusions about the themes can be made in the context of the literature review (Aronson 1994).

In this study, themes about attitudes, beliefs, motivations and barriers surrounding household emergency preparedness were identified from questions designed in the
contexts of the risk assessment and the hazards risk communication model. The themes were used to make conclusions about how homeowners go through these two models. The themes were also used to make recommendations concerning future research on household emergency preparedness.

ATLAS.ti Build 5.0 (Scientific Software Development) was used to aid in the thematic analysis. ATLAS.ti is a software package that allows for qualitative analysis of large bodies of textual information that cannot be analyzed by formal, statistical approaches. To accomplish a thematic analysis, ATLAS.ti can be used to code and catalog text in order to organize, compare, explore and reassemble meaningful pieces of information in a systematic manner (Muhr 2004).

The thematic analysis conducted in this study began with entering the three focus group transcripts into ATLAS.ti. A code was created for each question outlined in the Focus Group Questioning Plan (see Appendix A). As an example, for the question, “What would motivate you to prepare and maintain preparation”, a code called “motivations to prepare” was created. All answers to the focus group questions were cataloged as direct quotations under the appropriate code that corresponded to the question. For instance, a response to the question, “What would motivate you to prepare and maintain preparation” was, “family motivates me to prepare my household.” This response was cataloged under the code “motivations to prepare” as a direct quotation. This process was repeated for all of the responses across all three focus groups until all responses were cataloged under a code. This allowed consolidation of all responses to a particular question while still knowing which focus group the response came from.
In addition to creating codes for each focus group question, the data also generated some additional codes that emerged after reading through the transcripts. For example, the focus groups all described how current events, like 9/11 and Hurricane Katrina, influenced their preparedness decision making. From this discussion, a code called "influences of current events" was created and used to catalog discussion on this issue. Codes, therefore, were not only generated from the predetermined focus group questions, but also from the focus group discussion.

After cataloging each response from the transcripts, each code was examined for frequency of similar responses. Codes were also cross-examined for similarities. For instance, the belief that past experience with natural hazards and fire motivates preparedness was evident in more than one code.

Themes were generated based on similar responses within and across each code. In order to be a theme, all three focus groups had to contribute a direct quotation regarding that particular theme. For example, when examining the code "motivations to prepare", each focus group contributed at least one direct quotation indicating that protecting the family was a motivation to prepare the household for an emergency situation. As such, family as a motivator to prepare was reported as a theme in the results.

After generating themes for each focus group question, conclusions and recommendations were made using the themes in the contexts of the risk assessment and the hazards risk communication model.
RESULTS

Participant Characteristics

The demographic characteristics of the focus group participants are summarized in Table 6. The three focus groups were similar in composition. There were a total of 16 participants in the three focus groups, with 4 to 6 members per focus group. The age of participants ranged from 32 to 59 years-old. All of the participants identified themselves primarily as white; three participants identified secondarily with another race or ethnicity (American Indian/Alaskan native, Hispanic or Latino/Latina). The household size ranged from 1 to 5 people and participants lived in their homes in the range of 1 to 20 years. All participants had at least 1 to 3 years of college/tech school and either worked for wages or were self-employed, homemakers, or retired. Of those responding, all participants, except one, had household incomes over $75,000 per year.

Table 7 summarizes the experiences of the focus group participants with natural hazards and fires. Most (13/16) of the participants reported having experienced at least one of these events and 11 reported having experienced more than one of these events. At least one participant from each focus group listed hurricanes and severe snow or ice storms as prior experiences.

In addition to learning about their previous experiences with natural hazards and fires, the focus group participants reported the emergency situations to which their households might be susceptible. Table 8 summarizes the participant responses. The responses varied, but at least one member in each focus group listed ice storms, tornados, and hurricanes.
<table>
<thead>
<tr>
<th></th>
<th>Group A</th>
<th>Group B</th>
<th>Group C</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of Participants</strong></td>
<td>6</td>
<td>4</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td><strong>Age Range</strong></td>
<td>32 – 54</td>
<td>36 – 59</td>
<td>42 - 56</td>
<td>32 - 59</td>
</tr>
<tr>
<td><strong>Mean Age</strong></td>
<td>45</td>
<td>46</td>
<td>48</td>
<td>46</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Female</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>6</td>
<td>4</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>America Indian/Alaskan native</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic or Latino/Latina</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total Household Members</strong></td>
<td>2 - 4</td>
<td>1 - 4</td>
<td>2 - 5</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Members under 18 years-old</td>
<td>0 - 2</td>
<td>0 - 2</td>
<td>0 - 3</td>
<td>0 - 3</td>
</tr>
<tr>
<td>Members over 65 years-old</td>
<td>0 - 1</td>
<td>0</td>
<td>0 - 1</td>
<td>0 - 1</td>
</tr>
<tr>
<td><strong>Years at Current Residence (range)</strong></td>
<td>1 - 13</td>
<td>5 - 12</td>
<td>3 - 20</td>
<td>1 - 20</td>
</tr>
<tr>
<td><strong>Education Level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>College 1-3 years/Tech school</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>College 4 or more years</td>
<td>4</td>
<td>3</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td><strong>Occupational Situation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed for wages</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Self-employed</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Homemaker</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Retired</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td><strong>Annual Household Income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$20,000 – less than $25,000</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>$75,000 or more</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>14</td>
</tr>
</tbody>
</table>
TABLE 7. Past Experiences with Natural Hazards and Fire

<table>
<thead>
<tr>
<th>Experience</th>
<th>Group A (n = 6)</th>
<th>Group B (n = 4)</th>
<th>Group C (n = 6)</th>
<th>Total (n = 16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you ever experienced a natural hazard or fire?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>6</td>
<td>1</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>If yes, have you experienced more than one event?</td>
<td>4</td>
<td>1</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>Experiences listed (n)</td>
<td>11</td>
<td>2</td>
<td>14</td>
<td>27</td>
</tr>
<tr>
<td>Hurricane</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Severe snow or ice storm</td>
<td>4</td>
<td>1</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>Flood</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Tornado</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Fire</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

TABLE 8. Perceived Local Susceptibility to Emergency Situations

<table>
<thead>
<tr>
<th>Emergency Situation</th>
<th>Group A</th>
<th>Group B</th>
<th>Group C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accidental poisonings</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemical spills</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Earthquakes</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Falling</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Fire</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Flooding</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Hurricanes</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Ice storms</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Lightening</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Medical emergencies</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Power outages</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Severe thunderstorms</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Terrorist attacks</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Tornado</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Participants were also given ten commonly recommended tasks to complete when preparing the household for emergencies and asked to indicate whether they either “never heard or thought about” the recommendation, “heard or thought about” the recommendation, or “completed or did” the recommendation in their own households.

Figure 3 summarizes the responses of all focus group participants.
FIGURE 3. Level of Achievement of Common Household Emergency Preparedness Measures

<table>
<thead>
<tr>
<th>Preparedness Recommendations</th>
<th>Legend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete/did this already</td>
<td>□</td>
</tr>
<tr>
<td>Heed or thought about this</td>
<td>■</td>
</tr>
<tr>
<td>Never heard or thought about this</td>
<td>■</td>
</tr>
</tbody>
</table>

Preparedness Measures Key
1. Find out which natural hazards could occur in your area
2. Learn how to prepare for each hazard that could occur in your area
3. Learn how you will be warned of an emergency
4. Maintain a battery-operated radio to receive emergency information
5. Learn your community's evacuation routes
6. Meet with household members to discuss the dangers of fire, severe weather, hurricanes and other emergencies
7. Draw a floor plan of your home and mark the escape routes from each room
8. Take a basic first aid and CPR class
9. Stock emergency water and food at home
10. Maintain a first aid kit at home

A percentage of participants reported already completing each of the recommended tasks. In five out of the ten recommendations, participants either already completed the recommendation or had at least heard or thought about it. Five recommendations, however, prompted the “never heard or thought about” response in some participants. In particular, the recommendation to “learn your community’s evacuation routes” prompted the “never heard or though about this” response in one third of the participants.
Focus Group Findings

Defining “Household Emergency Preparedness”

When asked to define “household emergency preparedness”, two clear themes emerged from the focus groups.

Theme 1: Survival supplies are needed

All focus groups talked about stocking various types of supplies needed for survival as part of their definition of preparing for an emergency. For example, one participant defined household emergency preparedness as “having the necessary supplies on hand and equipment that you need to survive”. The groups listed several kinds of supplies to include food, water, heat and light sources, and medical supplies.

Theme 2: Time is a factor

The second theme focused on the amount of time that the household should be prepared for in an emergency situation. While the literature indicates that households should expect to be on their own for up to 72 hours following an emergency (Valussi 1984; Smith et al. 1995), all focus groups mentioned that they thought they should be prepared for a duration of at least two days to one week. For instance, one participant defined household emergency preparedness as requiring, “72 hours of water and 2 weeks of food.”

Reported Level of Current Household Emergency Preparedness

Focus groups were asked how prepared they were overall for a household emergency. There were a wide range of answers across the focus groups, from “not so good” to “very prepared”. One theme emerged from all focus groups during this discussion.
Theme 3: Level of preparedness depends on the situation

One group talked about their level of preparedness being different for natural hazards compared to terrorist threats. For example, one member commented that preparedness deals with "one kind of thing like a natural disaster and the other kind of thing like something like 9/11". Another group noted that preparedness level depends on the season (e.g., hurricane season, winter storms). For example, one member noted that, "As it gets nearer to winter time, I'll be prepared a little bit more for a snow storm or ice storm...in late April, I don't need to worry about that anymore, and I let it go." Finally, it was noted that level of preparedness depends on past experiences. For example, one group member described how experiencing a fire influenced the level of preparedness for household fires. The participant stated, "since I went through a fire, I am totally terrified of fire. That's what my focus is." This belief that past experiences predict future preparedness was evident throughout the focus group discussions and will be discussed in more detail as a theme emerging from the study.

Actions Already Taken to Prepare the Household

The focus groups reported several actions that they have already taken to prepare their homes for emergency situations. One theme emerged from this discussion.

Theme 4: Preparing through knowledge and implementing preparedness measures

All of the actions that the focus groups reported already taking can be categorized as either actions that build knowledge about preparing the household or actions that involve implementing preparedness measures. With these categories in mind, Table 9 lists the preparedness actions that all the focus groups reported completing.
TABLE 9. Emergency Preparedness Actions Already Implemented

<table>
<thead>
<tr>
<th>Building Knowledge about Preparedness</th>
<th>Implementing Preparedness Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Know the potential natural hazards of the area</td>
<td>Stock supplies (e.g., food and water)</td>
</tr>
<tr>
<td>Learn how to prepare for each hazard</td>
<td>Maintain a gas powered heat source</td>
</tr>
<tr>
<td>Learn how you will be warned of an emergency</td>
<td>Maintain a battery-operated radio</td>
</tr>
<tr>
<td>Learn community’s evacuation routes</td>
<td>Maintain a first-aid kit in the home</td>
</tr>
<tr>
<td>Discuss emergency situations in the household</td>
<td>Draw a plan and mark escape routes</td>
</tr>
<tr>
<td>Stock supplies (e.g., food and water)</td>
<td>Take a basic first-aid and CPR class</td>
</tr>
</tbody>
</table>

Benefits of Preparing and Consequences of Not Preparing

When discussing the potential benefits of preparing the household for emergencies, there were two themes that emerged from all focus groups.

Theme 5: Preparing produces peace of mind

Being prepared allows the homeowner to have peace of mind that, if an emergency were to occur, measures are in place to mitigate the damages. As one member stated, “it [preparing] gives me permission to say, “Whatever will be, will be.”

Theme 6: Preparing limits panic and fear

In addition to offering peace of mind, participants reported that being prepared decreases panic and fear in an emergency situation, allowing the household to remain calm and focused on survival. A participant noted that “in New Orleans there is this panic that seems to be overtaking people. I would hope if I’m prepared that I could react kind of calmly.” Another participant noted, “If you feel ready that you can handle it [an emergency situation], then you’re less frantic.”

Theme 7: Failing to prepare may lead to life-threatening situations or civil disorder

All focus groups talked about the consequences of ending up in either a life-threatening or urgent situation if unprepared. For instance, one participant stated, “you
could be in a situation like we were where it just kept getting colder and colder and
colder in the house” when describing an ice storm that caused a power outage for three
days. Additionally, participants noted that failing to prepare often leads to civil disorder.
For instance, one participant noted that, “If you’re not prepared, I think you become self
centered and you forget all about being civil to neighbors.”

How to Prepare for a Household Emergency

In order to learn more about their knowledge about household emergency
preparedness, each group was asked to describe how to theoretically prepare for
emergencies. The groups listed several of the actions they had already completed
(see Table 9); however, two additional methods for emergency preparation emerged from
all focus groups.

Theme 8: Importance of cell phones in emergency preparedness

All the groups described at least one way that a cell phone would be necessary for
household emergency preparedness. One group described placing emergency information
into a cell phone for use by emergency responders in the event of a medical emergency.
Several participants noted that cell phone must be charged and one member stated, “I’m
thinking about getting one of those emergency radios that you can use to charge a cell
phone.”

Theme 9: Relying on neighbors in emergency situations

All groups mentioned the importance of relying on neighbors during an emergency
situation. One participant stated, “know your neighbor and know how they’re prepared”.
This was echoed across all groups as a way to prepare for household emergencies. One
member noted that, “how much you interact with your community is directly proportional
to how well you’re going to be prepared not just for yourself, but how many people you can rely on.”

There were several other possible preparation methods that were mentioned uniquely by one of the focus groups. These are listed in Table 10 according to the two categories described earlier.

### TABLE 10. Additional Ways to Prepare Mentioned by Individual Focus Groups

<table>
<thead>
<tr>
<th>Building Preparedness Knowledge</th>
<th>Implementing Preparedness Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learn survival skills</td>
<td>Have cash available</td>
</tr>
<tr>
<td>Have a “worst case scenario” plan</td>
<td>Personal protection (weapons)</td>
</tr>
<tr>
<td>Learn to minimize panic</td>
<td>Having necessary medications</td>
</tr>
<tr>
<td>Teach children about preparedness</td>
<td>Store and protect important documents</td>
</tr>
<tr>
<td>Become involved in the community</td>
<td>Practice escape routes</td>
</tr>
<tr>
<td></td>
<td>Maintain smoke detectors</td>
</tr>
<tr>
<td></td>
<td>Maintain fire extinguishers</td>
</tr>
<tr>
<td></td>
<td>Have a “to go kit”</td>
</tr>
</tbody>
</table>

**Motivations to Prepare for Household Emergencies**

All focus groups discussed two clear themes pertaining to the motivators behind preparing for household emergencies; family and past experiences.

*Theme 10: Family motivates preparedness*

When discussing family as a motivator, all focus groups noted that having children in the household prompted preparedness actions. For instance, one participant said, “We’ve got two kids. We need a generator just in case.”

Although having children in the household was a motivator for all focus groups, additional family members served as motivators for some focus groups. Some members discussed elders in the home as a motivation to prepare. For example, one group member commented,
“Well, my parents are both older and my father has got severe emphysema...my mother is physically disabled. She can't get around as well, so we know that they are pretty much like children. We have to be 100% responsible for them in an emergency situation.”

Furthermore, some members talked about pets as a motivator to prepare the household. One member stated, “I value my family’s lives and our cats’ lives. That’s the only thing I really care about protecting.”

**Theme 11: Past experiences with household emergencies motivate preparedness**

Past experience with household emergencies were also motivations for all focus groups to prepare. There were several ways that each focus group expressed this point. Table 11 provides direct quotations from each of the focus groups identifying past experiences that motivate household preparedness.

**TABLE 11. Descriptions of Past Experience Influence on Household Preparedness**

<table>
<thead>
<tr>
<th><strong>Group A</strong></th>
<th><strong>Group B</strong></th>
<th><strong>Group C</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• “When you go through things once, you are a little bit more prepared.”</td>
<td>• “Every time we see any kind of winter weather approaching, we still remember three days with no electricity...just that experience.”</td>
<td>• “Since I went through a fire, I am totally terrified of fire.”</td>
</tr>
<tr>
<td>• “The more you’ve gone through the more you say, “Okay, I’m not going to let that happen again.””</td>
<td>• “9/11...it got me started.”</td>
<td>• “Living through something, because if you live through it, you get prepared for the next one.”</td>
</tr>
<tr>
<td>• “The first ice storm we went through was in Nashville area, and right after that was when I got the generator.”</td>
<td>• “prior experience”</td>
<td></td>
</tr>
<tr>
<td>• “I believe for me it’s just past experience.”</td>
<td>• “Maybe it just takes experience. I think about ice storms. I’m ready.”</td>
<td></td>
</tr>
<tr>
<td>• “It’s your past experiences that say, “Hey, I’m not going to let this happen again.””</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

36
Shortly before the focus group interviews, Hurricane Katrina devastated many Gulf Coast states. The focus groups were asked how hearing about this recent natural disaster impacted their motivations to prepare their households.

**Theme 12: Recent disasters may or may not act as motivators**

All groups had members who said that Hurricane Katrina either had no effect on their motivations to prepare or that it increased their awareness of the possibility of such household emergencies. None of the groups talked about taking actual actions to prepare their households based on hearing about Hurricane Katrina. According to one member, there was no additional motivation to prepare because, “It’s (Hurricane Katrina) not immediate for us.” On the other hand, another member stated,

“It has sort of impacted the way I look at my household, even though mostly in terms of keeping more food and water on hand, but it has demonstrated that there can be very catastrophic, unanticipated things that happen. You just have to be prepared for that.”

**Barriers to Preparing for Household Emergencies**

There were two themes that emerged from all focus groups regarding barriers to household preparation. One dealt with supply logistics and the other concerned lack of communication.

**Theme 13: Managing supplies as a barrier to preparedness**

Concerning supply logistics, focus groups talked about lack of storage as a barrier and noted the difficulty in keeping track of expiring supplies as well as the reality that emergency supplies often get used or misplaced in the course of everyday life. For instance, one member expressed the difficulty of keeping supplies stocked and organized, “especially when kids play with them”.

37
Theme 14: Lack of communication as a barrier to preparedness

All focus groups mentioned how lack of communication is a barrier to preparedness, although each group had unique discussions surrounding this issue. First, lack of communication concerning government response to emergency situations was discussed in each group. One participant noted that lack of communication about how government agencies are prepared to respond to emergencies is a barrier to preparedness in the home. For instance, that member stated, “it’s a question in my mind about how the community government...would communicate to people that there is some kind of emergency and that you must leave”. Along the same lines, some focus group members felt that governmental agencies do not communicate with the public and, therefore, curtail household preparedness efforts. For example, in talking about the county government, a member stated that, “they don’t talk to the public and don’t talk about what they’re doing.” In addition, another member noted that, “CDC (Centers for Disease Control) or another organization could put out a list of the 10 things you need to do to be prepared.” This comment is significant given the fact that CDC and several other organizations (e.g., American Red Cross, DHS, FEMA) do publish lists of household preparedness recommendations, yet this group was unaware of this and, thus, perceived it as a barrier.

The focus groups also discussed lack of communication about how to assess risk and how to actually carry out preparedness tasks as barriers to household preparedness. For instance, in talking about assessing risk, one group member stated,
“People have a hard time assessing risk. How often? How likely it is to happen. How catastrophic? People will go after the risks that are most likely to happen and the ones that are most catastrophic, but the ones in the middle that are less catastrophic and less likely, they don’t know how to deal with.”

Other common barriers noted by the focus groups include prohibitive costs of preparation, remembering to maintain preparedness (e.g., change batteries in a smoke detector), the time constraints of a busy lifestyle, and being physically unable to do the required tasks to prepare.

**Receiving Warnings about Potential Household Emergencies**

There were three ways that the focus groups expected to receive warnings or other messages about potential household emergencies.

*Theme 14: Ways to receive warnings about household emergencies*

First, a battery-operated weather radio was discussed as a reliable source of warning information, especially considering electrical power may not be available. Second, the emergency broadcast system heard over the radio or television was noted as a source of warning information. All the groups discussed the use of sirens to warn of potential household emergencies. Although their particular areas had no siren system in place, all the groups discussed the possible need for such a warning system. One member stated, “If I heard a siren, I would turn on the radio.”

The groups also talked about receiving warning information through friends and family. For instance, one member noted, “My mother usually calls me, “Turn on the radio! Turn on the television!”

When discussing who they would like to hear the warning information from, all the groups mentioned that, regardless of the source, it must be credible.
Theme 15: The source of the warning must be credible

All groups said that most news outlets on television or radio are credible sources. One participant stated, “Most news outlets would have weather-related information. You would be able to be more trustworthy on those.” It was noted that sources that are involved with the emergency are more credible sources of information. For instance, if there were a chemical spill nearby, one group member would want to “hear from county HAZMAT teams.” On the other hand, if there were a biological threat, another group member said, “The CDC is very well respected. That would be a respected, a reliable source.”

Hearing and Learning about How to Prepare for a Household Emergency

There were four common ways among all the focus groups for either hearing and/or learning about how to prepare for a household emergency.

Theme 16: Hearing and/or learning about preparedness through media, government, schools, and past experiences

All the groups talked about hearing and/or learning about preparedness through various media outlets (e.g., television, radio, and internet). Another source was some type of government agency. For instance, the groups talked about hearing and/or learning about preparedness from the American Red Cross and the local fire department. Local schools were also mentioned. All the groups noted that schools often provide some kind of preparedness instruction or activities (e.g., drawing home escape routes) and this reaches some households. The final method of hearing and/or learning about household preparedness came from past experiences. All groups relayed how past experiences often influence a person to hear and learn more about preparedness. For instance, one member responded by saying, “I believe for me it’s just past experience…the more that you see,
the more you think, “I have been in that position. What should I have done that would have made it easier for me to get through.”

Accepting and Internalizing Warning Messages and Preparedness Recommendations

There were two themes among the focus groups about accepting and internalizing warning messages and preparedness recommendations.

Theme 17: Ineffectiveness of unnecessarily heightened warning messages

The groups discussed the ineffectiveness of unnecessarily heightened warning messages, particularly with regard to the Department of Homeland Security’s Threat Advisory. Although not directly related to natural hazard and fire warnings or messages, both groups noted the system was ineffective and less credible after being elevated for so long without foreseeable threat. For example, one participant said, “It’s been yellow and orange for the majority of that time, which makes me think that maybe it’s not such a good plan because it loses credibility.” In a follow up comment, another member said, “I think there’s something kind of silly about leaving a threat level that high without any real explanation.”

Theme 18: More information is not always better

All groups noted that information overload often hinders acceptance and internalization of warning messages and preparedness recommendations. In discussions about receiving warning information, one member noted that, “It would be nice to have a specific channel or frequency that was maybe specifically just the details, without the sensationalism because you need real information”. In addition, when talking about recommendations for household fire safety, a participant stated, “you give people too much information, then they just ignore it.” Furthermore, another member showed similar
sentiment by saying, "they (terror attack warning messages) come so frequently and we're so used to them now that you don't really pay attention so much now."

Results Summary

All three focus groups were similar demographically (Table 6) and with respect to their previous experiences with natural hazard and fire-related household emergencies (Table 7). The focus groups were able to identify all of the potential hazards that their households may be susceptible to locally (Table 8). Even though they reported already completing several of the commonly recommended emergency preparedness tasks, some members indicated that they never heard or thought about five out of the ten tasks (Figure 3). Focus groups defined "household emergency preparedness" and talked about how to prepare their households by gaining knowledge about preparedness and implementing preparedness actions (Tables 9 and 10). The groups also listed the benefits of preparing and the consequences of not preparing. They noted that family and past experiences with natural hazards and fire motivated them to prepare and noted several barriers making it difficult for them to prepare. Finally, the groups described how they received preparedness information and offered insight about this topic.

CONCLUSIONS

Overview

Given the current poor state of household emergency preparedness in this country, it was hypothesized that homeowners might be (1) having difficulty successfully completing the risk assessment model, (2) having difficulty in successfully going through the steps of the hazards risk communication model, or, (3) a combination of both. Although others have identified characteristics that might play a role in household
emergency preparation, this study focused on the social-psychological processes (i.e., attitudes, beliefs, motivations and barriers) that influence preparing the household for emergencies. From the results generated by the three focus group interviews, several themes were generated that support the current literature about household emergency preparedness and that aid in better understanding the social-psychological processes that determine why some homeowners prepare their households, while others do not.

Evidence of Gaps in Household Emergency Preparedness

As described in the literature, this study found that the focus groups were not well prepared for household emergency situations. This claim is supported in several ways. There was a wide range of responses when the groups were asked about their current level of preparedness. Although some said that they were “very prepared”, others said “not so good”. Furthermore, the reported levels of achievement of ten common household emergency preparedness measures (Figure 3) demonstrates that the focus group members have not completed most of the ten commonly recommended emergency preparedness tasks.

Evidence of Household Preparedness Knowledge

The first step of the risk assessment model (conducting a risk analysis of the potential hazards) and the first two steps of the hazards risk communication model (hearing the message or recommendation and understanding its content) deal with gaining the essential knowledge to prepare the household for emergencies. From the results of the focus group discussions, it is apparent that the groups had sufficient household preparedness knowledge.
Regarding the risk assessment model, all of the groups were able to identify most of the potential hazards in the physical environment that may threaten the household (Table 8). Furthermore, regarding the hazards risk communication model, it is apparent that all focus groups had heard about and understood warning messages and preparedness recommendations about household emergency preparedness. First, according to the reported levels of achievement of ten common household emergency preparedness measures (Figure 3), only a small percentage of all the groups indicated that they “never heard or thought about” the commonly recommended emergency preparedness tasks. Second, all of the groups described how they received or expected to receive warning messages about potential household emergencies (Theme 14 and Theme 15) and they described how they had heard or learned about household emergency preparedness recommendations (Theme 16). Third, all of the groups readily described how to prepare their household for an emergency situation either through actions they had already taken or could potentially take in the future (Themes 1, 2, 4, and 8). Fourth, the focus groups were aware of the benefits of preparing and the consequences of not preparing (Themes 2, 5, 6, and 7) and, last, all of the groups talked about “information overload”, where warning messages and preparedness information is often sensationalized, given too frequently, and provided in voluminous quantities (Theme 17 and Theme 18).

**Failing to Assess Risk and Internalize Recommendations**

In all, the focus groups were not completely prepared for the potential hazards that they listed even though they demonstrated that they had heard about and understood warning messages and preparedness recommendations. Putting these observations in the context of the risk assessment and hazards risk communication models, it appears that the
groups were possibly having difficulty at a particular stage in both the models. In the risk assessment model, this difficulty may come from failure to properly assess risk. In the hazards risk communication model, this difficulty may come from failure to internalize or believe the salience of the warning message or preparedness recommendation (Figure 1). In essence, these are the same. Whether identifying potential hazards that may affect the household or hearing warning messages or preparedness recommendations, the homeowner must believe that an identified hazard, a warning message, or a preparedness recommendation is serious enough to warrant action. In the risk assessment model, this means assigning enough risk to the potential hazard to require action (Mileti and Peek 2002). In the hazards risk communication model, this means internalizing the warning message or preparedness recommendation and moving forward to take action (Blancard-Boehm 1998). As one participant expressed it when talking about risk, “[You] just don’t think that danger applies to you. You just really don’t believe that you’re ever going to be in a situation that it’s going to be so bad.”

“Moving Beyond Information to Motivation”

Having identified the potential stages of difficulty in the models predicting household emergency preparedness, what can be done to motivate preparedness? According to one focus group member, “I think it’s moved beyond information to motivation. You have to find a way to motivate people to accomplish it (preparedness).”

Family and past experience were discussed as the two motivations to prepare the household for emergencies in all of the focus groups (Theme 10 and Theme 11). When discussing family, the groups mentioned children, elders and pets as particularly important in their motivations to prepare the household. Family as a motivator for
emergency preparedness efforts is supported throughout the literature (Blanchard-Boehm 1998; Mileti and Peek 2002). Children and elders in the household are cited as particular motivators for emergency preparedness (Mileti and Peek 2002). Pets have also been described to motivate households to create emergency plans, particularly in regards to evacuation plans (Mason-Dixon Polling Research 2005).

The belief that past experience predicts future preparedness was prevalent throughout all the focus group discussions and is supported in the literature (Palm and Hodgson 1991; Blanchard-Boehm 1998; Mileti and Peek 2002). When discussing motivations for household emergency preparedness, all of the groups mentioned how past experiences with emergency situations acted to stimulate preparedness actions (Theme 11 and Table 11).

Since family and past experience with home emergencies stimulate household preparedness actions, it is suggested that these two motivators may persuade homeowners to more accurately assign risk to the potential hazards they identify so that they will take the appropriate actions to control the risk. Moreover, from the standpoint of the hazards risk communication model, these two motivators might allow homeowners to successfully internalize warning messages and preparedness recommendations so that they can respond to the warnings and recommendations to save life and property.

**Strengths and Weakness of the Study**

There are several strengths of this study. To investigate the social-psychological processes (i.e., attitudes, beliefs, motivations and barriers) involved in household emergency preparedness, this study went straight to the source of this information by conducting focus group interviews about household emergency preparedness directly
with homeowners. Given the goals of the study, the methods used were not only appropriate, but they were convenient. Additionally, two well-accepted emergency preparedness models, the risk assessment model (Mileti and Peek 2002) and the hazards risk communication model (Blanchard-Boehm 1998) were used to frame the focus group questions and interpret the results.

Perhaps the most significant weakness of the study is the selection bias involved in recruitment of the focus group participants. First, homeowners voluntarily chose to participate in the focus groups. This may have selected for individuals who have more experience with emergencies or who are more prepared than the general population. Second, selection of the homeowners’ associations was non-random and was biased by employees of the CDC. This resulted in selection of focus group participants in a primarily white, affluent and highly-educated area of Atlanta. Given that this population tends to be the most prepared, however, may imply that other populations are even less prepared.

Furthermore, though useful for thematic analysis, qualitative data is subject to the biases of the interpreter (Aronson 1994). Similarly, focus group interviews can be biased by the moderator’s preconceptions (moderator bias) when guiding focus group discussion (Krueger 2000). To reduce moderator and interpretation bias, the main points emerging from the focus groups were discussed among all team members in a debriefing session following the interviews. In this manner, a collective understanding of the focus group discussions was generated and used to interpret the data.
Future Research and Household Preparedness Campaigns

Realizing the potential impact of family and past experience on encouraging household emergency preparedness actions, this research suggests that these motivations could be used as the targets of future research studies and preparedness campaigns attempting to encourage households to convert their knowledge into action.

To accomplish this, several approaches are suggested. First, future research should focus on how best to incorporate the family into emergency warnings and preparedness recommendations. Involving the entire family unit in preparedness campaigns might better encourage homeowners to properly assess potential risks or internalize warning messages or preparedness recommendations. These campaigns should not only target the homeowner, but also children, elders and even pets in the household.

Since past experience with household emergencies is a motivation to prepare, it is also suggested that research focus on how best to incorporate this motivator into emergency warnings and preparedness recommendations and campaigns. Thirteen of sixteen participants in this focus group study reported having at least one past experience with a home emergency, and 11 of 16 had more than one experience. Future research should find ways to capitalize on this past experience in order to encourage households to better prepare.

Traditional methods of providing information and passively relying on individuals and families to apply it may not result in substantial preparedness efforts. Instead, it is suggested that campaigns that actively involve homeowners and their families in creating experiences with household emergencies and performing risk assessments be developed and implemented. To do this, methods and programs might focus on having homeowners
and their families perform risk assessments or participate in simulated emergency scenarios in the home so as to actually carry out the actions that may be required in that situation. For instance, if a risk assessment identified fire as a potential risk, the family would have to engage in activities like developing a household evacuation plan, clearing doorways and windows and physically practicing the evacuation plan. Moreover, if a simulated emergency scenario created a power outage, the family would practice gathering light sources or go through the entire process of starting the generator.

Practicing for an emergency situation with the family, in essence, is creating past experiences and, from this study, it is suggested that past experiences lead to future preparedness.

Furthermore, it is suggested that these simulations involve entire neighborhoods when conducted. From the focus groups (Theme 5) and the literature (Blanchard-Boehm 1998; Milioti and Peek 2002), homeowners often rely on neighbors during emergency situations. Conducting risk assessments or emergency practice scenarios with neighbors would not only create “experience” with emergency situations, but it would foster bonds between neighbors which might be important in future emergency situations.

Additionally, these campaigns should encourage or provide periodic practice times, similar to drills used by schools, police and fire agencies, and the military (e.g., fire drills, battle drills). This would not only allow households to practice their emergency plans, but it would also maintain the level of preparedness in the household. The focus groups noted that managing supplies is often a barrier to preparedness (Theme 13). By conducting regular drills, however, supplies could be regularly assessed and managed. This notion of maintaining preparedness is just as important as getting prepared.
Summary

This focus group study conducted with suburban Atlanta homeowners, along with support from the literature, indicates that homeowners possess adequate knowledge about how to prepare their households for emergency situations; however, they are not converting this knowledge into action. This study suggests that homeowners may be having difficulty conducting risk assessments and internalizing preparedness warnings and recommendations. Given this, it is not enough to simply continue to provide preparedness information in hopes that homeowners will take preparedness actions. Realizing that family and past experiences act as motivators to prepare and that relying on neighbors may be important during emergencies, efforts should move ahead to develop and implement preparedness campaigns that actively involve the family and neighborhood in conducting risk assessments and participating in mock emergency scenarios with the goal of encouraging households to better prepare for emergency situations so as to limit the loss of life and property.
Focus Group Questions

Opening Questions:
- Please tell us your first name and, tell me and the others how long you’ve been a homeowner here.
- Please tell us if you have personally experienced an emergency situation at home involving the weather or fire.
- First, I’d like to see a show of hands. Raise your hand if you or someone you know, such as a friend or family member, has experienced an emergency situation at home, such as a weather-related disaster, a fire, or a chemical spill.
  - Would someone volunteer to briefly tell us about that situation?

Introductory Questions:
- What does preparing for a household emergency mean to you?
  - The focus of this study is household emergency preparedness. What does the term mean to you?
  - It might help to think about different types of emergencies and what actions may be taken to prepare a household for these emergencies.
- “Preparedness is the process of developing a response and management plan before an emergency occurs in order to be ready. At the household level, preparation for a potential emergency starts with 1. a risk analysis of potential hazards (identify the potential risks and identify the level of threat) and 2. action taken to control or minimize risk (such as being aware of emergency warning system or making evacuation plans for leaving the house and community). (Mileti and Peek, 2002). What do you think of this definition?
  - Would you like to add anything to this definition?

Transition Questions:
- As of today, how have you prepared for a possible household emergency situation?
- What types of household emergencies do you think you and your household are susceptible to?
- How prepared do you think you are for home emergency situations?
  - What can be done to help you better prepare?
  - What would you like to learn more about?
  - How can organizations do a better job to help you prepare?
- Who in the household is responsible for emergency management?
  - What is the role of that person?
  - What is the role of others in the house?
  - Who influences decisions regarding emergency management?
    - Children
    - Spouse
  - How have different members of the household influenced the preparedness levels (i.e., through training, background knowledge)
Key Questions:
- What are some problems in preparing for a household emergency situation?
  - What factors keep you from preparing?
- What are some of the benefits you perceive may occur if you prepare for a household emergency situation?
- Please describe any consequences of not preparing effectively for a household emergency.
- What would motivate you to prepare and maintain preparation?
  - What would motivate your household to prepare and maintain preparation?
  - Describe any incentives that you feel would increase the likelihood that you would prepare and maintain your house for emergencies.
  - Describe how confident are you that you could effectively prepare your household for an emergency?
  - What are you protecting when you prepare for a household emergency?
- Where have you learned about preparing for household emergency situations?
  - Have community, state, or federal organizations helped you prepare for household emergencies?
    - What have you learned?
  - Where would you like to hear about these types of messages? From whom?
    - Who do you think should deliver this type of message?
  - Tell us about any national warning messages or recommendations that you’re aware of?
    - Who delivers this message?
    - What do you think about this messenger?
    - How often have you heard this message?
    - Where do you hear about this message? Radio, tv?
    - Who is a credible source for this information?
    - What do you think about this message in terms of:
      - Clarity
      - Do you accept it?
      - Argument strength
      - Relevance to your situation
      - Accuracy
- What can be done to help you better prepare?
- How prepared do you think your community, as a whole, is for an emergency?
  - Who is responsible for protecting the community?
  - What can be done to help them better prepare?

Ending Questions:
- Moderator will provide a summary of the comments regarding the key questions.
  - Are there any other important points that we missed?
  - Are there any other factors that you think are important in terms of preparing a household for emergencies that we have mentioned?
  - Do you have any advice for improving these groups in the future?
APPENDIX B
PARTICIPANT SCREENING QUESTIONNAIRE

1. Are you 18 years of age or older? .................................................. YES  NO

2. Do you currently own a home in the Atlanta area? ...................... YES  NO
   a. If yes, is the home your primary residence? .............. YES  NO

3. Is anyone else in your home currently taking part in this study?
   YES  NO  NOT SURE
APPENDIX C
PARTICIPANT DEMOGRAPHIC SURVEY

1. What is your age? __________

2. What is your gender?
   • Male
   • Female

3. Are you Hispanic or Latino?
   • Yes
   • No

4. Which one or more of the following would you say is your race?
   (Check all that apply)
   • White
   • Black or African American
   • Asian
   • Native Hawaiian or Other Pacific Islander
   • American Indian or Alaskan Native
   • Other (specify) __________

   If you checked more than one answer in Question 4, please answer Question 5. If not, please continue to Question 6.

5. Which one of these groups would you say best represents your race?
   • White
   • Black or African American
   • Asian
   • Native Hawaiian or Other Pacific Islander
   • American Indian or Alaskan Native
   • Other (specify) __________

6. Including yourself, how many people live in your home? __________

7. How many years have you lived at your current residence? __________

8. How many children less than 18 years of age live in your household? __________

9. How many adults 65 years and older live in your household? __________

10. What is the highest grade or year of school you completed?
    • Never attended school or only attended kindergarten
    • Grades 1 through 8 (Elementary)
    • Grades 9 through 11 (Some high school)
    • Grade 12 or GED (High school graduate)
    • College 1 year to 3 years (Some college or technical school)
    • College 4 years or more (College graduate)
11. Are you currently…? (Check all that apply)
   - Employed for wages
   - Self-employed
   - Out of work for more than a year
   - Out of work for less than a year
   - A homemaker
   - A student
   - Retired
   - Unable to work

12. Is your annual household income from all sources…?
   - Less than $10,000
   - $10,000 to less than $15,000
   - $15,000 to less than $20,000
   - $20,000 to less than $25,000
   - $25,000 to less than $35,000
   - $35,000 to less than $50,000
   - $50,000 to less than $75,000
   - $75,000 or more

13. Have you ever experienced a natural hazard or fire?
   - Yes
   - No

If yes, please answer Question 14. If no, please skip to Question 15.

14. Which natural hazard have you experienced? (Check all that apply)
   - Hurricane
   - Tornado
   - Earthquake
   - Severe snow or ice storm
   - Fire
   - Other (specify) ____________________________
15. The following table lists some recommendations for preparing the home for emergencies. Please check off the column that best applies to you.

<table>
<thead>
<tr>
<th>Preparedness Recommendation</th>
<th>Never heard or thought about this</th>
<th>Heard or thought about this</th>
<th>Completed/ Did this already</th>
</tr>
</thead>
<tbody>
<tr>
<td>Find out which natural hazards could occur in your area</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learn how to prepare for each hazard that could occur in your area</td>
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<td></td>
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<tr>
<td>Learn how you will be warned of an emergency</td>
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<tr>
<td>Maintain a battery-operated radio to receive emergency information</td>
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<tr>
<td>Learn your community’s evacuation routes</td>
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<tr>
<td>Meet with household members to discuss the dangers of fire, severe weather, hurricanes and other emergencies</td>
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<tr>
<td>Draw a floor plan of your home and mark the escape routes from each room</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Take a basic first aid and CPR class</td>
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<tr>
<td>Stock emergency water and food at home</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Maintain a first aid kit at home</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
REFERENCES


Mileti, D. S., C. Fitzpatrick, et al. (1990a). Risk communication and public response to the Parkfield Earthquake Prediction Experiment: Final report to the National Science Foundation. Fort Collins, CO, Hazards Assessment Laboratory and Department of Sociology, Colorado State University.


