NEIGHBORHOOD-BASED DISASTER PREPAREDNESS IN RURAL NORTHERN CALIFORNIA

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Abstract

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California is comprised of many major fault segments, creating a high probability for a natural disaster such as an earthquake and or subsequent tsunami. Since the 1989 Loma Prieta earthquake, and the 1992 Humboldt County and Landers/Big Bear quakes, numerous cities have recognized the importance of preparing for disasters at the neighborhood level. This project seeks to identify some of the outcomes of the 2013-2014 neighborhood-based disaster preparedness trainings conducted by a Northern Californian agency that is invested in the wellbeing of seniors. Focus group work with trainees is grounded in Community Based Participatory Research (CBPR), and is meant to not only inform the agency of outcomes, but to promote connections among participants through shared experiences, and inspire future leadership in the field of neighborhood-based disaster preparedness.
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Introduction

Humboldt County is located on the geologically diverse coastline of Northern California. Due to the convergent plate boundary of the Juan de Fuca and North American Plates, known as the Cascadia Subduction zone, the county is susceptible to a greater than 9.0 magnitude earthquake and subsequent tsunami. Both of these disasters would harm the natural and human-built environments as well as its social processes. Disasters such as an earthquake or tsunami can overwhelm the affected community’s resources and capacities to respond to all the needs of the survivors (Carafano, Hammond, Marshall, 2007). In the aftermath of Hurricane Katrina, people have realized that they will have a much better chance of surviving a major disaster if they prepare to be self-sufficient for three to seven days. Police, fire, and other responders cannot be everywhere during a disaster. Neighborhood-based disaster response is an especially effective way to prepare at a local level, where neighbors helping neighbors will be the first type of aid for many in rural Humboldt County (Aldrich et al, 2008).

Nearly 8 percent of the total population of this county is over the age of 65. Of those over the age of 65, 40.2 percent are disabled in some way (Census Bureau, n.d.). This vulnerable population is of special concern to an agency that serves seniors in Humboldt and Del Norte counties. This agency is invested in the wellbeing of seniors and has sought to educate seniors and their communities in neighborhood-based disaster preparedness methods. The agency’s disaster efforts are driven by one of the agency’s goals to advocate for services and programs that improve the health, safety, wellness and
quality of life in the aging community. This effort also includes a series of trainings in an effort to promote neighborhood-based disaster responses. Trainings included coordinating with neighbors and knowing where vulnerable seniors and adults with disabilities were located. Community volunteers received training with worksheets, and then returned home to conduct meetings with their neighbors to create a plan together. This project seeks to follow up with those who had participated in the agency’s neighborhood-based disaster preparedness training with the intent to inform the agency of outcomes, promote connections among participants through shared experiences, and inspire future leadership in the field of neighborhood disaster preparedness.

**Background**

During and immediately following a disaster event, communities expect a great deal from their government. However, in the event of a natural disaster the County of Humboldt relies on volunteer agencies to help assist vulnerable populations through coordination of services. Currently, this agency is an active member of the Volunteer Organizations Active in Disaster (VOAD), and coordinates regularly with the Office of Emergency Services (OES), senior resource centers and the Red Cross. The agency has made a commitment to ensure that the needs of seniors, especially isolated and/or frail older adults, are addressed in local disaster preparedness efforts. Critical services that the agency plans to deliver in the event of a natural disaster include, placing volunteers, providing information and assurance via phone, home visits and through emergency
shelters. Another important service they plan to provide is identifying vulnerable populations to follow up with after a disaster.

In addition, the agency has provided technical assistance to their contracted service providers to assist in the development of an Organization Emergency Preparedness Plan to ensure the provision of critical services to meet the emergency needs of their clients. In 2013, the agency developed a neighborhood-based disaster preparedness training to implement with volunteers from four cities. This training was based on concepts of community organizing, elements of the widely used Community Emergency Response Training (CERT), of which many employees of the agency are trained in, combined with existing protocols from the City of Berkeley's disaster plan. Specifically, the City of Berkeley promotes neighborhood- and community-based disaster response planning. They work with neighborhood associations to organize disaster preparedness on a block-by-block basis (City of Berkeley, 2002). The community-based disaster preparedness model is based on concepts such as social cohesion and social capital. Both social capital and social cohesion contribute to a community's resilience. Mayunga (2007) defines community disaster resilience as "the capacity or ability of a community to anticipate, prepare for, respond to, and recover quickly from impacts of disasters" (p.10).
Literature Review

Social Capital & Cohesion

Social capital refers to the potential resources in goods, labor, and other forms of assistance that are embedded in local-level social networks of family, neighbors, and other groups (Lalone, 2012). Social Capital in neighborhoods and communities affects us personally since the basic idea of social capital is that our family, friends, and neighbors are important assets in our lives. For example, the people we associate with are the people we turn to during a crisis, when we are looking for a new job, or when we lack the resources to accomplish tasks on an individual basis; surviving a disaster is not something that people do alone (Putnum, 2000). Social capital resources and networks within neighborhoods are a vital part of community resilience efforts for response and recovery to environmental disasters. Unfortunately, the potential roles and contributions of local-level social organizing are frequently overlooked or devalued as insignificant by planners and policymakers (LaLone, 2012).

Communities that have an invested interest in social capital are capable of handling various dilemmas and are less vulnerable to life crisis such as a natural disaster (Putnum, 2000). At the neighborhood level, people who have a strong sense of community have greater feelings of safety and security, participate more in community affairs, and are more likely to vote, recycle, help others and volunteer (Schweitzer, 1996). Having a strong sense of community improves an individual's sense of wellbeing, in
terms of increased happiness, decreased worrying, and a greater sense of self-efficacy (Davidson & Cotter, 1991). Dynes (2006) emphasizes, “While we calculate damage to physical and human capital, we usually ignore the social capital available within communities to deal with emergencies. Social capital is our most significant resource in responding to damage caused by natural and other hazards” (p.2).

Research supports that neighborhood social cohesion is an important mediator for family health, safety, and overall well-being. Neighborhood social cohesion is the trusting network of relationships and shared values and norms of residents in a neighborhood (Brisson, 2014). When people become attached to their neighborhoods and communities it has a positive impact on their preparedness levels (Turner, et al 1986). Theory suggests, and research supports, that there is a latent resource available in socially cohesive relationships that can be used to access real goods and services (Brisson, 2014). For example, those who have cultivated trusting relationships in their neighborhood can ask each other for help with tasks, they can support each other during times of personal crisis, or they can share valuable information with each other about available resources. All of these actions build a strong social foundation that can be utilized during a disaster.

The Model

Organizing at a neighborhood level is important because city and county emergency services can be overloaded after a disaster. Residents in Humboldt County should expect and prepare to have to wait hours or even days for medical, fire or law enforcement aid (Humboldt Earthquake Education Center at Humboldt State University,
Relying on relationships with neighbors for critical support is likely. In the 1992 Humboldt County and Landers/Big Bear earthquakes neighbors found themselves helping each other without being acquainted and agreed that life-saving time could have been saved if they had already formed a group to address this need (California Office of Emergency Service, 1993). The Red Cross encourages seniors to take responsibility for their safety by knowing what to do to be prepared for a disaster. Seniors will deal with a disaster better by preparing in advance and by working within their family, friends and neighborhood networks (American Red Cross, n.d.). After the initial steps needed to make a disaster kit that contains essentials such as medical supplies, the Red Cross asks seniors to meet with family and friends to make a plan. They also encourage seniors to consider how they may help other people in their communities that may need extra assistance during an emergency (American Red Cross, n.d.).

One overarching goal of neighborhood-based disaster preparedness planning is to involve the entire neighborhood, to meet and prepare with the people you will depend on in the event of a disaster. This structure inherently includes the strengthening of a neighborhood’s cohesion and allows individuals and families to offer their strengths, and social capital to be utilized during a crisis. Members of the community who do not choose to participate still benefit from those involved in disaster preparedness because the organized group often establishes plans that benefit the entire community. Examples of social capital that are essential to disaster planning includes various personal and professional skills among residents, and any special equipment they may possess. It would be helpful to know which neighbors have medical training, know how to operate a
HAM radio, and have electrical or engineering skills. Additionally, equipment such as a chainsaw, ladder, generator, first aid, or other medical supplies will be important during an extended period without access to outside help or resources.

Neighborhood-based trainings encourage the formation of teams to accomplish specific preparedness tasks before and after a disaster such as search and rescue, medical response, fire control, communications, or a group assigned specifically to identifying those in the community with special needs. Children, elderly and those with disabilities will certainly require help. Is recommended that local groups maintain a list of vulnerable residents. Once identified groups can check up on their neighbors who may need extra assistance such as evacuation or medical assistance.

There are many ways that neighborhood disaster response groups can form. Disaster preparedness can be an addition to an already formed group or be the purpose of a new group. Neighborhoods often host cooperative efforts such as a Neighborhood Watch or waste cleanup groups that help meet the needs of and further the community’s interests. Education is important to this model, starting with the individual, their families and then branching out to surrounding neighbors. Information is then collected about the community, such as which families or business have potential resources or social capital in the event of a disaster. Responsibilities can be assigned for disaster activities based on skills and resources. Ongoing training is important to keep the neighborhood group connected and informed (California Office of Emergency Service, 1993). Ideally, these groups would coordinate their efforts with their city or county emergency programs as this organized neighborhood-based disaster group is now an asset during a disaster.
Volunteers, whether CERT-trained residents or members of neighborhood networks established to aid in emergency preparedness and response, need to be integrated into formal plans and operations of local and state agencies (Institute for Local Government, 2009).
Methods

This project is grounded in Community-Based Participatory Research (CBPR). CBPR research helps identify common goals and values community improvement (Bekteshi, Gehlert, Kye-Price, 2012). The goal was to continue expanding on the partnerships that had been formed between the agency and the community participants through a focus group lunch at the agency, accompanied by a short online survey. Fifty-six male and female Humboldt residents, ranging in age, participated in the agency’s 2013-2014 disaster preparedness training and were contacted to participate in this project. The methods used in this study were both quantitative and qualitative and were designed to obtain descriptive data in order to analyze the outcomes of the agency’s trainings and give insight into how neighborhood disaster preparedness groups form and are sustained.

The project was approved by and received exempt status from the Humboldt State University Institutional Review Board. The sampling methods were purposeful, every participant had attended one of the agency’s disaster preparedness trainings. Surveys were distributed by email and data was collected using the online survey technology by Google. Eleven people participated in the survey and were asked basic demographic questions in addition to specific questions about what they had done to implement the training they had received, see appendix. One focus group was held with seven of the participants. An abridged transcript was created from individual data, group data, and/or group interaction data recorded from the audiotaped session/s. Descriptive analysis was conducted.
Results

Survey Results

The follow up survey was emailed to fifty-six individuals who had participated in the training and included an invitation to join a focus group. Eleven responded, ranging in age from 44 to 82, with a median age of 64. A majority of the respondents (36%) live in the city of Eureka, 18% live in McKinleyville, 18% in Blue Lake, 18% from Trinidad/Westhaven and 9% from Arcata. Nearly 64% of the respondents reported that they found the training useful and the remaining were unsure. Seventy-three percent are interested in future disaster preparedness trainings by the agency.

The survey asked respondents which aspects of the trainings they have implemented. Nine of the respondents, 80 percent, initiated contact with at least one neighbor following the training. From that contact, three respondents successfully engaged their neighbors in further disaster preparedness methods. Two respondents shared that they either thought about contacting neighbors or have made plans to do so in the future. Forty-five percent either packed a “go-bag” or added supplies to disaster kits for themselves or others. Other outcomes attributed to the agency’s training include obtaining a HAM radio license, renewing out-of-state contacts, joining Nextdoor.com, becoming CERT trained and making a contact list of neighbors.

Three of the respondents, 27 percent, are trained as Community Emergency Response Team (CERT) members. Five, 45 percent, have no other disaster preparedness
training, and the remaining three respondents have been involved in disaster preparedness through their workplace. Areas of interest expressed by the respondents include, alternative energy strategies, food preservation, tabletop drills for various emergencies, an overview of Humboldt county’s emergency response system and how neighborhood groups fit in, how to inspire others to get organized, residential and school preparedness, how to pack an emergency bag, first aid kit and plan an escape route, updates on the Cascadia regional planning and implementation, current tsunami zones and safety measure in place, and general disaster preparedness topics that address issues at the personal, neighborhood and community level. When asked about their interest in helping their neighborhood to become more organized in the event of a disaster, 45% expressed interest while 55 percent expressed no interest.

**Focus Group Summary**

The focus group and lunch was held in the conference room of the agency. Seven survey respondents attended, representing three different neighborhoods in Humboldt County, local businesses, retired law enforcement, county employees and Neighborhood Watch organizers. The purpose of the meeting was to follow up with those who had taken the agency’s neighborhood-based disaster preparedness training with the intent to inform the agency of outcomes, promote connections among participants through shared experiences, and inspire future leadership in the field of neighborhood disaster preparedness. The conversation was group led after introductions and the following
prompt, “Please share with the group what has happened in your neighborhoods since the training, and any other disaster preparedness experiences you have had”.

**Personal experiences.** Every participant had a personal story to share with the group that stimulated further conversations. There was a wide range of disaster preparedness experience in the room ranging from first responder neighborhood experience to workplace preparedness leaders. For many, their professional work had led to their interest in preparing on a neighborhood level such as workplace safety officer or deputy sheriff. Three participants shared stories about experiences which have fueled their personal interest in preparedness such as living through frequent tornadoes or the 1989 Loma Prieta earthquake. They discussed the impact these events had on their desire to be prepared on both a personal and neighborhood level. This included being emotionally prepared to help neighbors, as these participants described trauma experiences associated with disaster events.

**What participants had done/discovered since the training.** Every participant had taken direct action regarding disaster preparedness within their neighborhoods since attending the agency’s training and were able to give more in depth answers than they provided on the survey. Each participant described reaching out to, or future plans for reaching out to their neighbors to discuss how to prepare together. The individual with future plans had been focused on better training himself by means of obtaining a HAM radio license and equipment, becoming CERT trained and joining the online neighborhood network Nextdoor.com to conduct neighborhood outreach and recruitment for CERT. Nextdoor.com is a geographically based online forum used by distinct
neighborhoods to communicate information such as neighborhood events and news. The participant also stated that this network can communicate with local cities and Offices of Emergency Services and appreciated this aspect of the service. This participant explained that not having immediately visible neighbors, due to the typically rural setting of Humboldt County, that an online network such as Nextdoor.com is the best way to communicate with others in his area and establish a comfort level with neighbors that is important. These participants reports that approximately three percent of his neighbors use Nextdoor.com.

Two participants from a different city, who have actively worked to form disaster preparedness groups in their neighborhoods, echoed the usefulness of Nextdoor.com for advertising information about disaster preparedness and inviting community members to join the group. They report nearly ten percent of their community uses this platform for communications. The same participants report that they have continued success in organizing their neighborhood into five distinct functioning disaster preparedness groups they call “pods”. They reported that pod membership is based on proximity. In the beginning, these leaders held monthly meetings to attract membership, now individual pods meet monthly or quarterly, in-person in homes or meeting halls, or online. They identify at-risk individuals among the group, make plans on how to care for each other in the event of a disaster, and train each other in areas such as disaster kit building and food preservation. Every quarter an “all pod” meeting is hosted, followed by an annual party. They attribute their inspiration to the agency’s training facilitator, reporting that organizing at a neighborhood level made the most sense to them. These participants
reported that the process of getting their neighborhood organized took a lot of energy and time, and currently have needed fresh leadership from other pod members as the effort moves forward. These participants have also become CERT trained along with eleven other members of their community. Neighborhood Watch is also mingled into their pod system. These participants believe that having many types of trainings is beneficial and recommended.

Two participants, a married couple, reported feelings of failure after attempting to reach out to sixteen different households in their neighborhood. They reported it was like “pulling teeth” and that most people did not understand the basics of disaster preparedness. This couple had experienced the Loma Prieta earthquake and understood the need for preparedness while living in Humboldt County. They have decided to take on the role of the “prepared” person in their neighborhood to benefit others. They report a need to be personally prepared for a disaster first so they are ready to help others. They have a week's worth of food and water on hand at all times but have difficulty getting their neighbors to understand the importance. Through reaching out they’ve also learned that their neighbors don’t know each other. To address this, they have initiated social gatherings in their homes to introduce them to each other. Another avenue this couple has pursued, that successfully sparked neighborly interest, was introducing Neighborhood Watch. They organized a meeting recently with eighteen neighbors in attendance. They mentioned the topic of disaster preparedness and plan on further discussions, but want to focus on getting people to “bond” first. Another outcome of organizing a Neighborhood
Watch group is that the couple was able to obtain contact information from their neighbors that will be useful in emergency situations.
Discussion

The participants of the focus group were very willing to openly share their personal experiences and opinions related to neighborhood-based disaster preparedness. As a result, much information was shared regarding what they had or had not done since the agency’s trainings to implement a neighborhood-based disaster preparedness group in their neighborhoods. The successes and challenges that each participant shared created a dialogue that resulted in the exchange of helpful tips and both personal and professional contact information. For example, the participants who had integrated Neighborhood Watch into their “pods” shared that the Neighborhood Watch model has an existing module on disaster preparedness that the couple may want to integrate. Specific techniques for water storage were discussed. The person who had organized their county workplace to be prepared in the event of a disaster had tips for another group member who was seeking to establish something similar in their workplace. After the meeting was over, some of the members exchanged contact information or asked for specific information about when and how a CERT training takes place. By sharing their individual disaster preparedness knowledge, many of these tips seemed to address another participant's needs or questions. This met some of the desired outcomes of the focus group, to promote connections among participants through shared experiences, and inspire future leadership in the field of neighborhood disaster preparedness.

Overall most of the participants, in both the survey and the focus group, had attempted to enhance preparedness in their neighborhoods as a result of the agency's
trainings. While some were met with resistance, and are in varying stages of engaging their neighborhoods, two focus group participants reported successfully organizing their neighborhoods into preparedness “pods” which continue to meet on a regular basis. This is a significant result that is directly attributed to the agency’s trainings.

**Barriers**

During the focus group, the second and final prompt came from the agency. They asked the group for their opinions on what prevents their neighbors from participating in neighborhood-based disaster preparedness, when ideally this model should work. While each person in the group believed that this model is a practical approach to preparation, they also recognized some of the barriers to inclusivity based on issues of trust and privacy. Mistrust, to be suspicious of or to have no confidence in others, works against building social cohesion and capital in neighborhoods as mistrust promotes alienation (Mirowsky and Ross 1983). Some participants felt that their neighbors may resist engaging in an organized group such as this due to the rural and independent nature of Humboldt County. Others reported that the presence of illegal marijuana grows leads to some people not wanting to open their doors to neighbors. The element of drugs also led participants to be wary of inviting neighbors into their own homes, one participant seemed to struggle with this because they “really do want to be inclusive”. One solution to this trust and privacy issue was offered by the two participants who have had success organizing their neighborhoods, which is to use public spaces such as a town meeting hall or local grange to host preparedness groups. They also proposed a Neighborhood Watch
block party with food and music as an incentive to draw out those interested while also using a public space. They reported that this technique is what led to increased participation in their “pods”. This suggestion could be incorporated into future training as one way to promote relationship building and overcome the issue of mistrust among neighbors.

**Recommendations**

Three of the focus group participants expressed appreciation for the follow up on the training they received, some asked if this project included future meetings or some other form of follow up. Based on their comments and participation, hosting similar meetings and or trainings on a regular basis could offer continued connection and support to individuals who are seeking to take a leadership role in their neighborhoods. All seven focus group participants are interested in or are already taking on that role, while 73 percent of the survey respondents expressed interest in further agency trainings and 45 percent would like to help their neighborhoods become more organized in disaster preparedness. These are high rates of interest considering is has been a few years since the agency’s trainings. Additionally, the participants who successfully formed “pods” in their community attribute some of their success to hosting regular meetings that promote social interactions such as a block party, or at least including food, beverages and music to enhance the experience.

**Future project.** This project attempted to follow up with the “pods” that were formed in a certain Humboldt community but was unsuccessful. The leadership in the
pods are open to working with students who are interested in learning more about how they successfully organized their community. There is much to learn from their success that could enhance future trainings in neighborhood-based disaster preparedness and potentially save lives. This could be an opportunity for a future student to explore in combination with organizing regular meetings of interested participants from this project. Please contact the author of this paper for further information such as the name of the agency.
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Appendix

Survey Questions

1. Name:
2. Age:
3. City:
4. Did you participate in an A1AA training?
5. Which Training: Arcata, Blue Lake, Trinidad, Eureka
6. Did you find the training useful?
7. Did you implement anything specific in your neighborhood as a result of the training?
8. Are you interested in A1AA developing further trainings?
9. What other local agencies have you been involved with, or volunteered for, regarding disaster preparedness?
10. What topics would you like to learn more about?
11. Are you interested in helping your neighborhood become more organized regarding disaster prep?
12. Are you interested in coming to my focus group?