A Bosnian Refugee Community's Hidden Capacity in Preparation for a Natural Disaster in the United States

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Abstract

The aim of this study was to map out the internationally resettled Bosnian community's current capacity to overcome a natural disaster and identify the strengths and limitations for future community capacity building to increase disaster resilience. Thirty-three Bosnian refugees were interviewed to identify its community's capacity to respond to and recover from a natural disaster, including community social capital, institutional support, access to resources, economic development, and knowledge and coping. Data were analyzed thematically and theoretically. Four themes emerged: Bosnian community represents a home to its individuals, Bosnian community is a cohesive whole with empowered community outreach, Bosnian community is capable of responding to a natural disaster because of its individuals' aggregated coping skills learned from the war, and environment change affects the Bosnian community's capacity to respond to a natural disaster. The Bosnian community has a strong capacity for social networking, social cohesion, coping, and economic development needed in case of a natural disaster. Future endeavors should be focused on further strengthening the community's current capacity, expanding community links to social capital, and developing volunteer capacity.

Keywords

community capacity building; social vulnerability; Bosnian refugees; natural disasters

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Government takes the primary responsibility for disaster management and risk reduction. It plays a major leadership role in community vulnerability assessment, disaster preparedness planning, and mobilization of emergency resources (King, 2008; Perry & Lindell, 2003). However, the literature increasingly demonstrates that a top-down government command approach is no longer sufficient and suggests a collaborative effort among government agencies, nongovernment organizations, and local communities. A bottom-up community-based participatory approach is more appropriate in addressing a community's concerns, mobilizing community assets, and mitigating the effects of a disaster (Pandey & Okazaki, 2005; Van Aalst, 2008; Waugh & Streib, 2006).

Disaster researchers and practitioners have shifted their focus to the involvement of community partners in the process of community capacity building through the lens of social ecological systems. Ecosystems generally include the characteristics of natural environments, such as biodiversity, environmental functions, and spatial patterns. Social systems are characterized by the links and interactions among a variety of influences, such as demographics; organizational capacity; social capital and cohesion; infrastructure; communication patterns; community norms, attitudes, and values; community involvement; and political forces (Adger, Hughes, Folke, Carpenter, & Rockstrom, 2005; Maguire & Hagan, 2007; Park & Miller, 2006; Patterson, Weil, & Patel, 2010).

The notion of community capacity building has been widely applied to diverse disaster situations. For instance, Buckland and Rahman (1999) examined the determinants of community preparation and response to the 1997 Red River Flood in Canada. They concluded that the levels and patterns of community development in physical, social, economic, and human capital were critical to community-based disaster management.

In an analysis of the California's Portola Valley case, the local community was fully engaged in the process of disaster management and community disaster planning, decision making, and partnering with government authorities in preserving physical and human environments. The results demonstrated the effectiveness of the sustained mitigation of hazards, such as earthquakes and landslides (Pearce, 2003).

Similarly, an integrated community-based disaster management program was successfully piloted with the Shang-An village in Taiwan to empower the community to become a disaster-resistant, resilient, and sustainable community. The actions undertaken in this program included empowering the village residents to identify their community's vulnerabilities to natural disasters, developing solutions, and implementing disaster management strategies and trainings through their own community organizations (Chen, Liu, & Chan, 2006).

Evidence was also presented in the Philippines, Fiji, and Samoa for emphasizing the importance of mapping, building, and enhancing multilevel

and multifaceted community disaster response and recovery capacities with their community stakeholders (Chen et al., 2006; Gero, M´eheux, & Dominey-Howes, 2011). Ultimately, community capacity building often expands the community's adaptive capacity, which underlines the value of the availability, accessibility, and mobilization of natural, human, institutional, information and technology, and economic resources in the event of a public emergency (Dolan & Walker, 2004; Wall & Marzall, 2006).

Levels of community capacity in populations vary for many reasons. An important composite indicator commonly used for measuring community capacity during all phases of a natural disaster is the Social Vulnerability Index. Zou and Wei (2010) established 361 social-economic impacting factors that can determine the level of a community's social vulnerability to responding to and recovering from disasters as well as providing direction for community capacity building. Social vulnerability comprises income, poverty, employment, education, age, household parenting patterns, disability, race, ethnicity, culture, language proficiency, availability of and accessibility to resources, community development patterns, human interactions, infrastructures, institutional support, and natural environments (Bjarnadottir, Li, & Stewart, 2011; Flanagan, Gregory, Hallisey, Heitgerd, & Lewis, 2011; Zou & Wei, 2010).

The Social Vulnerability Index was adopted to examine cases, such as Hurricanes Katrina and Rita. The inequities of these preexisting social economic conditions among the diverse communities affected by the hurricanes in New Orleans regulated the levels of their community's resilience during the process of disaster preparation, response, and recovery (Finch, Emrich, & Cutter, 2010; Laska & Morrow, 2006; Masozera, Bailey, & Kerchner, 2007). However, social vulnerability is not static and can change over time depending on the dynamics of interactions and modifications of the impacting factors. It is also important to note that social vulnerability can be seen solely as a snapshot during a particular process (Cutter & Finch, 2008; Tapsell, McCarthy, Faulkner, & Alexander, 2010). Findings from the Kuhlicke, Scolobig, Tapsell, Steinfuhrer, and Marchi (2011) study regarding multiple flood events throughout Europe suggest that a community may be socially vulnerable to one type of event or one phase of an event but not to others, and the impact of one area of vulnerability may be canceled out by the impact of an area of strength. In the Italian case, because of the social support that a group of residents received from volunteer organizations, government authorities, and civil protection services, their vulnerability to floods due to lack of information of hydro-geographical risk was alleviated (Kuhlicke et al., 2011).

Thousands and thousands of Bosnian refugees fled from their home country more than 20 years ago, and the majority of them now live in the Greater St. Louis area. The city of St. Louis is home to the largest population of Bosnians outside of Bosnia (International Institute-St. Louis, 2012; Matsuo, Tomazic,

Karamehic, Cheah, & Poljarevic, 2008). Refugee communities often have major linguistic, cultural, social, and economic disadvantages aligned with contemporary definitions of social vulnerability. In addition, numerous and frequent natural disasters have occurred in the state of Missouri, such as ice storms, snow storms, flooding, and tornadoes (State Emergency Management Agency, 2013). All 55 of the major disasters declared in Missouri between 1957 and 2013 were natural disasters. These disasters were widespread and frequently affected several of Missouri's cities and counties. Because of the effects of severe winter storms, drought, flooding, and Hurricane Katrina, eight state emergencies were declared in Missouri between 1976 and 2011 (Federal Emergency Management Agency, 2013a; State Emergency Management Agency, 2013). In 2013, the number of state emergency declarations in Missouri was ranked 18th in the nation, and Missouri was ranked 10th among the 64 states and tribes in the United States in the number of declared major disasters (Federal Emergency Management Agency, 2013b).

In spite of the prevalence of natural disasters and the designation of the St. Louis Bosnian community as a socially vulnerable population, no research has been conducted to examine the capacity of this community to mitigate its social vulnerabilities to natural disasters. The purpose of this study was to map out the Bosnian community's current capacity to resist a prospective natural disaster and identify the strengths and limitations for future community capacity building to increase the community's disaster resilience.

Method

Study Design

The data used in this research project are from a larger qualitative study based on the premises of the theory of planned behavior (TPB) in which a grounded theory approach was used. The aim of this larger study was to use a grounded theory approach to extend the TPB and build a framework within a social-ecological domain to understand systematically and conceptually Bosnian refugees' potential response to a natural disaster in the United States in order to develop a tailored multilevel and multidimensional pilot public health intervention to promote their resistance and strengthen their resilience to a complex public emergency, such as a natural disaster.

Using the grounded theory approach, researchers can interpret a pure description of an experience, an event, or a phenomenon into a theoretical framework or "an abstract analytic schema" (Creswell, 2007, p. 62). The grounded theory approach is characterized by the systematic examination of data gathered from participants with similar experiences for the purpose of elaborating, generating, extending, or discovering a theory or theoretical framework. It can also be used to explain an interaction, action, or process or to guide future re-

search (Strauss & Corbin, 1998). Behaviors beyond volitional control are clarified by the TPB, and the theory applies to "individual motivational factors as determinants of the likelihood of performing a specific behavior" (Montano & Kasprzyk, 2002, p. 67).

The purpose of this study was to identify the socioecological determinants, including community social support and social network, accessibility and availability of community resources, community aggregated coping, and community norms, which can eventually affect individuals' "attitudes towards a behavior," "subjective norm" to comply with a behavior, and "perceived behavioral control" to perform a behavior (Montano & Kasprzyk, 2002, p. 67). Attitudes, subjective norm, and perceived behavioral control are the key components of the TPB and were used to explain Bosnian refugees' disaster response behaviors.

Subjects

A well-developed theory with saturated data determines the original sample size (Creswell, 2007; Strauss & Corbin, 1998). Because of the potential for a relatively high loss of refugee participants due to language difficulties, frequent movements, and culture barriers, a 10%–15% decrease in the initial number of participants recruited was planned. Criterion sampling was the first step of the sampling process. Inclusion criteria included (1) aged 38 years old or older, (2) originally having the status of a refugee, (3) Bosnian war (1992–1995) survivor, (4) one participant per household, (5) residing in the Greater St. Louis area, and (6) having the willingness to give in-depth information. The one exclusion criterion for participants was cognitive impairment. Participants were intentionally selected from refugees who survived the Bosnian war (1992–1995) because the emphasis of the original qualitative study was the contribution of prior war trauma to individuals' responses to natural disasters later in life. Based on the inclusion and exclusion criteria, snowball sampling was initiated to recruit the participants through personal connections, a local Bosnian radio channel, and local Bosnian organizations and community religious centers. Then each interviewee was asked to provide two or three potential participants for an interview. Interviews were conducted with 33 Bosnian refugee adults resettled in the City of St. Louis and south St. Louis County (Xin et al., 2015a, 2015b).

Measures

The original semistructured interview guide for Bosnian refugee participants was based on the TPB and existing literature and comprised preconstructed complex questions to generate a dialogue between the investigators and participants and to gather in-depth information, including the Bosnian community's capacity to respond to and recover from a natural disaster, such as community social links and social cohesion, organizational support, access

to natural and man-made resources, economic development, and knowledge and coping skills for a natural disaster. Sample questions include the following: How would you describe the Bosnian community in St. Louis in general? How do you think the Bosnian community would respond to a natural disaster (e.g., flood, severe storm, tornado, hurricane, and earthquake)? What are the Bosnian organizations that you may rely on during a natural disaster? How would you describe your relationship with your neighbors? How would you describe the relationship among Bosnians in St. Louis? How do you think Bosnians would help each other in the face of a natural disaster? How do you think living in the United States may influence the Bosnian community's capacity to respond to a natural disaster? How do you think the city of St. Louis would respond to a natural disaster? A group of academic and nonacademic refugee experts validated the interview guide.

Procedures

Thirty-three semistructured, face-to-face, dialogue-based interviews were conducted at the home of each refugee participant or at a public place. Professional translators confirmed the consent form after it was translated and back translated into the Bosnian language. The consent form was signed prior to each interview. Each interview lasted approximately 2 hr. Participants were asked to respond to the preconstructed complex questions and other specific or new questions that emerged from prior interviews. A professional interpreter hired from the St. Louis Bosnian Media Group was present at each interview. Interviews were conducted between August and December 2013 and recorded digitally. The institutional review board at Southern Illinois University Edwardsville approved the study (Xin et al., 2015a, 2015b).

Analysis

Three trained undergraduate students worked to transcribe the audio data verbatim in English. Content analysis and thematic analysis approaches by ATLAS ti 6.2 (GmbH, Berlin) were used to analyze the data. The raw data were coded line by line; codes, subcategories, categories, and themes emerged from the data; in each category, properties (subcategories) were filled; to fit them into suitable categories, subcategories, and codes, quotations were constantly compared to each other; and top-down coding was employed for part of the categories based on existing scholarship. To maintain the interreliability of the data, the members of the research team analyzed the data individually and then repeatedly compared with each other's coding (Xin et al., 2015a, 2015b).

Results

Interviews were conducted with 16 female and 17 male Bosnian refugees (see Table 1). Roughly 76% of interviewees were employed in a full-time job,

such as nursing home caregiver, electrician, mechanic, sewing worker, cleaner, or truck driver. Almost all of them had access to a basement, and about 85% of them were homeowners at the time of the interview. Every participant had at least two children. Most of their children lived somewhere within 30-min driving distance, if not at their parents' home. About 94% of the interviewees owned a car and drove on their own. Over half of the participants reported being fluent in English, and most of them learned English over the course of their everyday lives after resettling in the United States. Each participant lived in St. Louis for at least 10 years, and the participants who have lived in St. Louis longest reported residing in the area for 17 years (Xin et al., 2015a, 2015b).

Table 1

Bosnian Participants' Social and Demographic Characteristics

Characteristic	Number of participants	%
Gender		
Male	17	52
Female	16	48
Age		
< 40	1	3
40–50	28	85
> 50	4	12
Marital Status		
Married	30	91
Separated/Divorced/Widowed	3	9
Employment		
Full-time	25	76
Part-time	3	9
Unemployed	5	15
Home Ownership		
Yes	28	85
No	5	15
Car Ownership		
Yes	31	94
No	2	6
Spoken English		
Yes	20	61
No	13	39
Years in St. Louis, Missouri		
< 10 Years	0	0
10–13 Years	22	67
> 13 years	11	33

Bosnian Community Represents a Home to Its Individuals

With the exception of five participants, all owned a house in the Greater St. Louis area and maintained homeowners insurance. The participants universally stated that they would not move to another city or state and indicated that St. Louis was considered a second home after their country of origin. Participants felt settled and fulfilled as they had their immediate and extended families living in town and raised their second and/or third generation in St. Louis. Children were well acculturated in their schools, and living expenses were affordable. Although a considerable number of the participants did not speak English fluently, they indicated that they could work things out perfectly around here. Many essential services were available and accessible to them. Given that a significant number of Bosnians live in the city and work in the same place, a variety of Bosnian professionals offer their services to the Bosnian community, including health care, law, food and grocery, construction, and engineering. There are plenty of job opportunities; freedom of practicing their own religions; and a safe, quiet, and friendly social environment. As the participants described,

> Lots of Bosnian [live] here. I know lots of [Bosnian] people are living in other states. I mean cities. And they don't have like shopping and restaurants. Like everything we do here. I feel like I am at home, you know. I mean we have everything here. [Bosnian] culture was maintained in St. Louis, and I have lots of Bosnian friends.

> What makes me happy here, first my children are here, [and] my family is here. They make life over here and went to school. It's safe. After the war, it wasn't safe [in Bosnia]. I think I'm safe here. I don't know what else. I'm happy. [If I am] still in Bosnia, I can't work because when I went [back] in 2009, my friend was hospitalized and I went there and thought, "I should work in a hospital over there." [However], I couldn't see myself working there though. Because the war makes one religion more open than the other. In my city, it's Serbia that I think non-Muslims working in the hospital. The doctors, [they are] all gone. They are just fired. How can I be in some place when everybody is indifferent? I don't care if I'm here and Muslim, I don't care what religion you are, but over there it was a war about that. What I see here, just to compare, the residents who I'm working [with here], how we are doing so much for the people, my work, how we are acting to the residents, all people, but when I see there, my friend, she was sick, but she tried to feed other residents. The woman, she had a stroke and she didn't know what she was doing, but there was nobody around to help. I just disappointed.

I got really used to [living here]. I like it here. Let's say I'm used to it here. I've traveled to several different states like North Carolina, Kentucky, and Illinois . . . But I always come back here. It's really nice here to live. I like here the best. St. Louis was the first place when I came to the United States. I got used to it. It's the same like when you get board for the first time in some city and you like that city more than any other one. Maybe if I went to Chicago the first time I would like Chicago more than here. Maybe, I don't know.

Bosnian Community Is a Cohesive Whole With Empowered Community Outreach

The participants were asked about how their community would respond to and recover from a natural disaster. Every participant stated that Bosnians would primarily depend on themselves and their immediate and extended family members and friends. The participants mentioned that geographically, many Bosnians lived close to each other and socialized frequently. They believed that Bosnians would help each other in any circumstance. Although some Bosnians might be physically and socially drifting away from their ethnic community, they were still connected by the community's native media outlets or Facebook. If they knew that any Bosnian was in need, they would help no matter what. The participants provided detailed examples for evidence.

It's just the case that you have so many people from Bosnia living in that part of the city. From this incident about the boy who was the owner of the store [and was shot to death], he [the owner] was well known to be helping anybody else who was coming to the store saying, "I don't have any money, can you help me?" He helped people from the community. He didn't care what kind or race or nationality or ethnicity or who people are. Everybody knew it and everybody loved him. When that happened, actually, all of the Bosnian community got together and they helped with money, they helped with any kind of needs they needed. Anything they asked. The entire community was there, really. On [the day of] the funeral, they had like three thousand people or something like that. It was really an incident that put the community together without any special organization involved.

The community, when we ask for help, if somebody is sick, needs some surgery, or he is in bad health, he lost job, we are pretty good, very good community. One girl, she was a ten or eleven year old, she had a bad kidney. At that time, I worked for a Bosnian TV station; it's in Illinois. We helped the family to pay some bills for hospital, and we got in touch with Mayor Slay, with Congressman Carnahan, and all other

people. We got together and she had kidney surgery. She is now a big girl. This was five, six years ago, at least. And many other examples when people have big surgery, they don't have money, they don't have insurance and stuff like this, they don't work for six months or a year, we get together and collect money to give them.

Besides the strong tie to their own ethnic community, participants also demonstrated close relationships with their neighbors, which often consisted of a variety of ethnicities. The participants believed that their neighbors would be another reliable source of support in the event of a natural disaster. As one participant noted, "Our neighbors are more important to us than brothers in Chesterfield, which is like 20 miles away."

I have an older neighbor here and she is always watching around. We had a situation here that someone was doing car robberies and she saw some unknown people and she knows they shouldn't be there, so she lets us know, and that is how we kind of organizes.

So we have really good neighbors around here. We have on this side, on the left side, we have some young people. And they are really nice to us and they check on our house when we go to Kentucky and they look over and keep eye on it. Also, across the street we have some neighbor, I think she's a doctor or something, and she always look over. One time we had situation some man came with truck and he really came to get his stuff, but, you know, she saw him and thought I'm gonna call police if you don't leave the property. So he had to leave. The neighbor across the street is really good. Situation [like] when he forgot to turn off the stove. He was kind of cooking something. [He was] cooking meat but his daughter came over to get him to the hospital for the treatment and he forgot to turn it off. And he went to the hospital and the stove was still on. And it started smoking of course after a while. And alarm and everything goes off. And another neighbor called firefighters. They are really, really nice to us. We never argue or anything.

Yeah, we had one year storm. It was very bad snow. And everything was freezing. I think there was snow and there were raining. And everything was freezing and my neighbors, my first neighbors here, have wood, big wood, [which was] blown across the street [and fell on] my driveway. And my husband, he just got out and went to work. And my neighbor, he came out and he asked me if everybody was ok. And then, you know, he told me he would pay for it. It damages my roof little bit. I said it was ok. It was not bad.

The participants were also well aware of their community's ties to the city of St. Louis. The mayor of St. Louis has been interviewed by the Bosnian Media Group multiple times, and Bosnian presidents have paid frequent visits to the city and the Bosnian community in the past few years. For one participant living in St. Louis, he claimed that he was very satisfied because Americans and Bosnians were helping each other and that there was good communication with U.S. government officials, such as senators and congressmen.

Bosnian Community Is Capable of Responding to a Natural Disaster Because of Individuals' Aggregated Coping Skills Learned From the War

A small number of participants were uncertain how resilient the Bosnian community would be in response to a natural disaster. Concerns included the following: "Bosnians acclimate and customize here. They kind of get used to living here in this entire community. Year after year, they are becoming part of a big group. I don't think they would react much differently than any other groups here"; "It all depends on personal experience and [varies] from person to person"; and "it doesn't really matter if it's American, Vietnamese, Mexican, or Bosnian." However, the majority of participants were convinced that compared to the general population, the Bosnian community had more emotional and problem-solving skills to cope with a natural disaster because of their war experiences. They believed that because of their intense war experiences, they had a better survival instinct in response to an emergency. That Bosnian families typically store more food and water than the general population is indisputable. Bosnians are used to storing canned food and a variety of snacks that do not need refrigeration or cooking, and they know how to use fewer ingredients to make food and learned how to share, save, and allocate limited resources for survival during the war. They experienced everything and anything that a person can possibly imagine and survived the genocide. As a result, they became patient, tolerant, calm, and optimistic.

> [Responses to a natural disaster vary] from person to person; that's probably different, but let's say maybe that the Bosnians, when I say Bosnians, I did not split any religion or ethnicity or whatever, I say Bosnians, like I mention the Bosnian army: They are united, they are the same people, and they grew up together. They do the same things every day. They survived such bad things together; united, they are so strong. Bosnia, it's really one of the special countries in the whole world, in so many ways special. The Bosnian people are very nice, very friendly, hard-working people, very good friends. It's so much the whole world they can learn from Bosnia.

In all these situations [during the war], anything could happen. I know for sure that we know how to deal with it. It's hard to explain. In some unpredictable ways, we would know how to deal with it. I've seen many situations in that Americans were surprised how we react, and sometimes they don't have any action, while we do so much of the action. What was the last thing you said? They panic too much. They call in for help too much. No action at all.

So basically we didn't have much disaster here. But one example was snowing. And my company is in the south city area. When it was snowing, in my company, [there were] only about 10 employees showed up. And most [of them were] Bosnians. How they came in and how they made it, I didn't know, but they made it. Other people they didn't come even [for] little snow. Everybody was panicking, in such little things like snow.

Environment Change Affects the Bosnian Community's Capacity to Respond to a Natural Disaster

Living away from their home country and resettling in the United States introduced uncertainties to the current Bosnian community's capacity to respond to a natural disaster. The primary concern was the differences of the natural and man-made environments between Bosnia and the United States, which might compromise the Bosnians' ability to master their environment and respond. For instance, some said, "I know the territory [Bosnia] better. I know where to find the natural and clean resources of water"; "In Bosnia, you could find a water source every two seconds and it is clean and safe to drink without boiling. Here, I could not do that"; "Let's say back to Bosnia, we knew where to go for shelters. Here, I don't really know. We should know, but I really don't. I don't even know that we have any big shelters here for emergency situations." The structure of their houses and the materials used to build these houses were also different, which could provide a different level of protection. They lost the familiarity with their living environment and lacked knowledge of locating new resources.

I believe it would be much different here [in terms of responding to a natural disaster]. In Bosnia, I could have a small or bigger garden right next to my house. Here, I couldn't find a place to have that to have my own food to survive. So for me, it would be really hard to imagine if I had a tornado here and I lost my house. I don't have the money to buy another one. In Bosnia, it was much easier to think about anything. If I have a bad situation I have my garden and I can have my fruits and vegetables and I can have all kinds of stuff made by my own hands.

If you ask me the difference is not about environment, it's about bodies. People here like to drink cold and they don't want to drink anything but cold or they have same temperature in house no matter if it's winter or summer. So let's say [if] we don't have that to regulate people, they will get probably sick because just, you know, for years and year their bodies get used to some discipline, which wasn't [the] case in Bosnia. We had different temperature, different water, which is not cold just regular water, stuff like that. So I think the big difference is in bodies [and] in general how anybody get used to something. And there is a lot of vegetables or natural stuff outside [in Bosnia that] you can use for food. You don't have to eat meat, but you do have to know which is which or what is what.

Discussion

More than 10 years after resettlement, the Bosnian community is thriving in Greater St. Louis. Many have become owners of small local businesses, such as cleaning companies, construction companies, restaurants, and grocery stores and, as a result, have a positive effect on the local economy. They have also become professionals in many areas of expertise, including medical doctors, nurses, lawyers, accountants, and skilled workers. Furthermore, Bosnians operate their own native-language media outlets, such as radio and newspaper. They not only maintain and promote their own Bosnian culture, but also are acculturated into American culture and have proven to be diligent and hardworking people. As participants indicated, they feel confident and comfortable living in St. Louis because even though their English is not fluent, they still manage their lives well and are able to access a variety of services.

The Bosnian community also has a strong sense of family and community. The majority live close to each other, and they like to socialize and organize events in their spare time. One soccer game between Bosnia and Argentina in St. Louis attracted hundreds of thousands of local Bosnians to a local stadium to watch and cheer on their national team. They assist each other spontaneously in any circumstance by any means, such as sharing job opportunities, fundraising, and providing emotional support. They reach out to their neighbors regardless of their culture, language, and ethnicity and develop a solid and long-lasting relationship with them. They are also highly valued by their local government. The social capital that the Bosnian participants described during their interviews presents the capacity of Bosnian community's survival and adaption to a potential public disaster.

In the current literature, social capital is defined as social networks, social cohesion, social norms, social interactions and solidarity, and social participation, which has an effect on the social and economic activities of individuals and communities (Nakagawa & Shaw, 2004). The role of social capital in

preparing for, responding to, and recovering from a natural disaster has been examined in a number of studies. Mathbor (2007) interpreted the three levels of social capital theory in bonding within communities, which starts with close ties and individual ethnic communities; bridging between or among communities, which represents a higher level of social networking and reaching out to other communities; and linking through ties with government and nongovernment organizations and volunteer groups, representing the highest level of collaboration.

Built on this theory, Hawkins and Maurer (2010) studied the management and utilization of existing social capital in the responses of 40 families to Hurricane Katrina in New Orleans. Their results emphasized the significant value of close ties, including families and relatives, in providing immediate support during the disaster and in bridging and linking social capital, including neighbors, neighborhood coalitions, other communities, and organizations outside of New Orleans, in sustaining the long-term support in the aftermath of the disaster through sharing essential resources and information and offering emotional support.

Nakagawa and Shaw (2004) conducted two case studies in Kobe, Japan, and Gujarat, India, to examine the effectiveness of mobilizing social capital in planning and implementing rehabilitation and reconstruction of communities postearthquake. The results demonstrated that the communities engaged in a variety of social capital-building activities, including sustained trust for community leaders and members, collective decision making, adoption of multilevel and multidimensional social networks, and formal collaboration with government officials, facilitated a satisfying and speedy disaster recovery process. Social capital measures and shapes the adaptive capacity of a community to a natural disaster and has tremendous implications in community capacity building and disaster preparedness (LaLone, 2012; Pelling & High, 2005).

Expectedly, the participants also felt confident in their ability to cope with a natural disaster because of the survival skills learned from their influential war experience, which they believed they would use whenever they needed it. They were confident that compared to others, Bosnians were more prepared for a disaster emotionally and physically. However, they also raised concerns that their resilience to a natural disaster might be compromised by being resettled in a foreign country and being unfamiliar with their current natural and man-made environments. They did not believe that the majority of Bosnians would know where to locate a shelter, how they would be evacuated, where to find emergency resources, whom they should be expecting to come and help, and how sturdy their houses might be to overcome a natural disaster. Similar concerns in an early study were raised and shared by a group of Vietnamese refugees resettled in North Carolina. They had no idea how to navigate and become

connected to the resources that they needed that were outside of their ethnic community in case of an emergency, primarily because of the isolation caused by the differences of language and culture (Xin, Aronson, Lovelace, Strack, & José, 2014). Based on the Social Vulnerability Index, the Bosnian community can be identified as culturally, linguistically, and economically vulnerable to a natural disaster in the United States (Bjarnadottir et al., 2011; Flanagan et al., 2011; Zou & Wei, 2010). Yet given the nature of the changeability of social vulnerability, the strengths that the Bosnian community presents in regard of its individuals' aggregated coping skills and the bonding, bridging, and linking social capital that the community possesses may eventually reduce the community's risk and mitigate the effects of a natural disaster (Cutter & Finch, 2008; Tapsell et al., 2010).

This study has some considerable limitations. For instance, we sampled a relatively small number of Bosnian refugees residing in the Greater St. Louis area of Missouri. Every participant survived the Bosnian war before being resettled in the United States. It is therefore possible that this sample might not be representative of Bosnian populations living elsewhere or members of the second and third generations who reside in St. Louis and have no memory of a war and are more adapted to the American culture. Loss of data during the interpretation process is an additional and potential concern. Because all of the interview questions dealt with a natural disaster, the applicability of these results to other disasters could be limited to some extent (Xin et al., 2015a, 2015b).

Conclusions and Implications

The Bosnian community is recognized as a thriving and self-sustained community. Compared to other immigrant and refugee communities, Bosnians are relatively socially, economically, and politically empowered, which can be beneficial for an effective response and rapid recovery during a public emergency. In practice, public health preparedness professionals and disaster response teams may consider further enhancing the community's current hidden capacity and minimizing the community's vulnerability to a natural disaster. Both community capacity and vulnerability explain and determine Bosnian individuals' disaster response behaviors within a socioecological domain. Given, in particular, the social networks and social cohesion that the community demonstrates as a foundation, and given their trust of the local government, practitioners may continue solidifying and expanding the community's current social capital through involving community partners in a collective disaster planning process, disseminating emergency preparedness and response instructions using the community's native media outlets, and linking the community with more government and nongovernment institutions for external emergency re-

sources. Moreover, the survival skills and the diversity of the professions in the Bosnian community provide the community with potential assets for soliciting volunteers in risk reduction and disaster management.

References

Adger, W. N., Hughes, T. P., Folke, C., Carpenter, S. R., & Rockstrom, J. (2005). Social-ecological resilience to coastal disasters. *Science, 309*, 1036–1039. doi:10.1126/science.1112122

Allen, K. M. (2006). Community-based disaster preparedness and climate adaptation: Local capacity building in the Philippines. *Disasters, 30*, 81–101. doi:10.1111/j.1467-9523.2006.00308.x

Bjarnadottir, S., Li, Y., & Stewart, M. G. (2011). Social Vulnerability Index for coastal communities at risk to hurricane hazard and a changing climate. *Natural Hazards, 59*, 1055–1075. doi:10.1007/s11069-011-9817-5

Buckland, J., & Rahman, M. (1999). Community-based disaster management during the 1997 Red River Flood in Canada. *Disasters, 23*, 174–191. doi:10.1111/1467-7717.00112

Chen, L., Liu, Y., & Chan, K. (2006). Integrated community-based disaster management program in Taiwan: A case study of Shang-An village. *Natural Hazards, 37*, 209–223. doi.org/10.1007/s11069-005-4669-5

Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches.* Thousand Oaks, CA: Sage.

Cutter, S. L., & Finch, C. (2008). Temporal and spatial changes in social vulnerability to natural hazards. *PNAS, 105*, 2301–2306. doi:10.1073/pnas.0710375105

Dolan, A. H., & Walker, I. J. (2004). Understanding vulnerability of coastal communities to climate change related risks. *Journal of Coastal Research, SI39*, 1317–1324.

Gero, A., M´eheux, K., & Dominey-Howes, D. (2011). Integrating community based disaster risk reduction and climate change adaptation: Examples from the Pacific. *Natural Hazards and Earth System Sciences, 11,* 101–113. doi:10.5194/nhess-11-101-2011

Federal Emergency Management Agency. (2013a). Disaster declarations for Missouri. Retrieved from http://www.fema.gov/disasters/grid/state-tribal-government/67

Federal Emergency Management Agency. (2013b). Disaster declarations by state/tribal government. Retrieved from http://www.fema.gov/disasters/grid/state-tribal-government

Finch, C., Emrich, C. T., & Cutter, S. L. (2010). Disaster disparities and differential recovery in Orleans. *Population and Environment, 31,* 179–202. doi:10.1007/s11111-009-0099-8

Flanagan, B. E., Gregory, E. W., Hallisey, E. J., Heitgerd, J. L., & Lewis, B. (2011). A social vulnerability index for disaster management. *Journal of Home Security and Emergency Management, 8*(1), 1–22. doi:10.2202/1547-7355.1792

Hawkins, R. L., & Maurer, K. (2010). Bonding, bridging, and linking: How social capital operated in New Orleans following Hurricane Katrina. *British Journal of Social Work, 40*, 1777–1793. doi:10.1093/bjsw/bcp087

International Institute-St. Louis. (2013). 20,000th refugee is sponsored by International Institute. Retrieved from http://www.stlbosnians.com/20000-th-refugee-is-sponsored-by-international-institute/

King, D. (2008). Reducing hazard vulnerability through local government engagement and action. *Natural Hazards, 47*, 497–508. doi:10.1007/s11069-008-9235-5

Kuhlicke, C., Scolobig, A., Tapsell, S., Steinfuhrer, A., & Marchi, B. D. (2011). Contextualizing social vulnerability: Findings from case studies across Europe. *Natural Hazards, 58,* 789–810. doi:10.1007/s11069-011-9751-6

LaLone, M. D. (2012). Neighbors helping neighbors: An examination of the social capital mobilization process for community resilience to environmental disasters. *Journal of Applied Social Science, 6,* 209–237. doi:10.1177/1936724412458483

Laska, S., & Morrow, B. H. (2006). Social vulnerability and Hurricane Katrina: An unnatural disaster in New Orleans. *Marine Technology Society Journal, 40*(4), 16–26. doi:10.4031/002533206787353123

Maguire, B., & Hagan, P. (2007). Disasters and communities: Understanding social resilience. *Australian Journal of Emergency Management, 22*(2), 16–24.

Masozera, M., Bailey, M., & Kerchner, C. (2007). Distribution of impacts of natural disasters across income groups: A case study of New Orleans. *Ecological Economics, 67,* 299–306. doi:10.1016/j.ecolecon.2006.06.013

Mathbor, G. M. (2007). Enhancement of community preparedness for natural disasters: The role of social work in building social capital for sustainable disaster relief and management. *International Social Work, 50,* 357–369. doi:10.1177/0020872807076049

Matsuo, H., Tomazic, T., Karamehic, A., Cheah, W. H., & Poljarevic, A. (2008). *Cross-cultural adaptation of Bosnian refugees in St. Louis, Missouri: Methodological considerations.* Paper presented at International Conference on Survey Methods in Multinational, Multiregional, and Multicultural Contexts (3MC), Berlin, Germany.

Montano, D. E., & Kasprzyk, D. (2002). The theory of reasoned action and the theory of planned behavior. In K. Glanz, B. K. Rimer, F. M. Lewis (Eds.), *Health behavior and health education* (pp. 67–99). San Francisco, CA: Jossey-Bass.

Nakagawa, Y., & Shaw, R. (2004). Social capital: A missing link to disaster recovery. *International Journal of Mass Emergencies and Disasters, 22*(1), 5–34.

Pandey, B., & Okazaki, K. (2005). *Community based disaster management: Empowering communities to cope with disaster risks.* Retrieved from http://unpan1.un.org/intradoc/groups/public/documents/un/unpan020698.pdf

Park, Y., & Miller, J. (2006). The social ecology of hurricane Katrina. *Smith College Students in Social Work, 76*(3), 9–23. doi:10.1300/J497v76n03_02

Patterson, O., Weil, F., & Patel, K. (2010). The role of community in disaster response: Conceptual models. *Population Research and Policy Review, 29,* 127–141. doi:10.1007/s11113-009-9133-x

Pearce, L. (2003). Disaster management and community planning, and public participation: How to achieve sustainable hazard mitigation. *Natural Hazards, 28,* 211–228. doi:10.1023/A:1022917721797

Pelling, M., & High, C. (2005). Understanding adaptation: What can social capital offer assessments of adaptive capacity? *Global Environmental Change, 15,* 308–319. doi:10.1016/j.gloenvcha.2005.02.001

Perry, R. W., & Lindell, M. K. (2003). Preparedness for emergency response: Guidelines for the emergency planning process. *Disasters, 27,* 336–350. doi:10.1111/j.0361-3666.2003.00237.x

State Emergency Management Agency. (2013). Declared disasters in Missouri. Retrieved from http://sema.dps.mo.gov/maps_and_disasters/disasters/

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory.* Thousand Oaks, CA: Sage.

Tapsell, S., McCarthy, S., Faulkner, H., & Alexander, M. (2010). *Social vulnerability to natural hazards.* Retrieved from CapHaz-Net website: http://caphaz-net.org/outcomes-results/CapHaz-Net_WP4_Social-Vulnerability2.pdf

Van Aalst, M. K., Cannon, T., & Burton, I. (2008). Community level adaptation to climate change: The potential role of participatory community risk assessment. *Global Environmental Change, 18,* 165–179. doi:10.1016/j.gloenvcha.2007.06.002

Wall, E., & Marzall, K. (2006). Adaptive capacity for climate change in Canadian rural communities. *Local Environment, 11,* 373–397. doi:10.1080/13549830600785506

Waugh, W. L., Jr., & Streib, G. (2006). Collaboration and leadership for effective emergency management. *Public Administration Review, 66*(Suppl. 1), 131–140. doi:10.1111/j.1540-6210.2006.00673.x

Xin, H., Aronson, R., Lovelace, K., Strack, R., & José, V. (2014). Vietnamese refugees' perspectives on their community's resilience in the event of a natural disaster. *International Journal of Mass Emergencies and Disasters, 32,* 508–531.

Xin, H., Karamehic-Muratovic, A., & Cluphf, D. (2015a). If it is meant to be, let it be: Risk communication among Bosnian refugees resettled in the U.S. *Health, Culture, and Society, 8*(1), 69–80. doi:10.5195/hcs.2015.185

Xin, H., Karamehic-Muratovic, A., & Cluphf, D. (2015b). What does not kill us makes us stronger: How Bosnian refugees would cope with a natural disaster. *Universal Journal of Public Health, 3,* 169–179.

Zou, L., & Wei, Y. (2010). Driving factors for social vulnerability to coastal hazards in Southeast Asia: Results from the meta-analysis. *Natural Hazards, 54,* 901–929. doi:10.1007/s11069-010-9513-x