What Does Not Kill Us Makes Us Stronger: Implications for Bosnian Refugees' Coping Skills during a Natural Disaster

Huaibo Xin^{1,*}, Ajlina Karamelic-Muratovic², David Cluph¹

¹School of Education, Health and Human Behavior, Southern Illinois University Edwardsville, United States

²Department of Sociology and Anthropology, Saint Louis University, United States

Copyright © 2015 by authors, all rights reserved. Authors agree that this article remains permanently open access under the terms of the Creative Commons Attribution License 4.0 International License

Abstract This study explored Bosnian refugees' attitudes and beliefs about how to cope with a potential natural disaster. A total of thirty-three Bosnian adult refugees participated in the study. Face-to-face, in-depth individual interviews were conducted. The findings indicated that Bosnian refugees developed a number of coping skills for survival and sustainability through their previous disaster experiences and emergency trainings. Their preparedness for a natural disaster can be characterized by strong leadership qualities, with more economic and social resources to draw on for coping, and close ties to local community. In case of an emergency, they would likely be calm, optimistic, and emotionally independent. Given the development of this group's coping skills, Bosnian refugees have a strong potential for serving as volunteers in disaster preparedness, response, and recovery. Particular attention should be paid, nevertheless, to these refugees' emotional and mental health needs in the aftermath of a natural disaster.

Keywords Coping, Natural Disasters, Bosnians

war and torture; rape and sexual violence were routine tools for ethnic humiliation and cleansing [3]. Past studies have documented PTSD and major depressive disorder (MDD) as the most frequently occurring psychiatric syndromes in these populations [4]. The combination of traumatic history along with resettlement challenges, even 15-20 years post-resettlement, suggests that Bosnian refugees may experience more threats to their overall well-being than other groups. This makes a group, such as Bosnians, particularly vulnerable to a potential natural disaster. Despite the regular occurrence of natural disasters, there is no existing research examining Bosnians' strengths that could optimally mitigate social vulnerabilities to a natural disaster in the U.S. The purpose of this study is to explore Bosnian refugees' attitudes and beliefs towards a possible natural disaster, as well as to identify their unique coping mechanisms, which could be potentially useful towards preparing the respective community for a possible natural disaster.

1.1. Literature Review

1. Introduction

Studies conducted to examine the relationship between coping strategies and human well-being (i.e. mental health) during natural disasters, have emphasized the importance of effective coping strategies. Though Bosnian refugees have now been resettled in the U.S. for some 15-20 years and are relatively well established, a refugee group is nonetheless considered to be a linguistically, culturally, socially and economically disadvantaged group due to ongoing challenges related to being a refugee, living in a new country and mental health needs [1]. For example, many Bosnians continue to suffer from Posttraumatic Stress Disorders (PTSD) and experience negative sequelae from war trauma, displacement, and relocation [2]. Most Bosnians survived

In terms of coping and mental health, much early and current research has focused on both problem-solving and emotional based coping relevant to social support, personal resources, religion, optimism, hope, and self-efficacy among adult populations [5-7]. To gain insight into local people's cultural and social coping mechanisms and the psychological impact of a natural disaster, focus group discussions were conducted among the four coastal villages affected by the Asian Tsunami in Tamil Nadu, India, nine months after the event. Results suggested that coping strategies, such as collectivizing personal trauma, utilizing societal support, and engaging in spiritual and religious practices, increased the local populations' resistance to psychological distress [8]. An association among problem-focused (e.g. active planning, instrumental support, religion, venting, positive reframing, and humor) or avoidance coping (e.g., self-distraction, denial, and behavioral disengagement), and PTSD and other general

distress, was also measured among 228 Hurricane Katrina survivors. Problem-focused coping and social support decreased the likelihood of psychological distress while hope moderated the relationship between avoidance coping and psychological distress [9].

Most recently, coping and PTSD were further explored among 200 Pakistani earthquake survivors. Coping was measured via three psychosocial variables: life purpose, religious coping, and social support. Predictably, higher purpose in life and positive religious coping led to less severe symptoms of PTSD; higher perceived social support led to higher positive emotions, which could subsequently result in better mental health outcomes; and negative religious coping, including feeling punished and/or abandoned by God, aggravated the levels of severity of PTSD [10]. Historically, researchers have paid considerable attention to the role of perceived coping self-efficacy (CSE) for overcoming a natural disaster. Findings gathered from earthquake, flood, and hurricane survivors demonstrate a dose-response relationship between CSE and both short- and long-term global distress. Personal attributes, such as optimism and self-esteem, significantly advanced CSE's positive impact on distress triggered by natural disasters [11-13]. Recent research also seems to suggest that individuals' disaster experiences may, in some instances, lead to post-traumatic growth (PTG), the strength gained to overcome stress and improve quality of life [14,15].

Research evidence shows, however, that coping is situational, and coping with a natural disaster can differ as a result of various factors, including age, gender, race, socioeconomic status, education, prior disaster experience, and disaster awareness [16-18]. For instance, a total of 964 displaced evacuees of New Orleans were surveyed two days after Hurricane Katrina. Participants' psychological distress and coping strategies, such as information-seeking behaviors, religious/spiritual actions, and communication, were assessed. Significant difference was identified between groups of evacuees in the use of prayer as a coping mechanism. Women, non-Whites, or the less affluent seemed more likely to use prayer to cope with the Hurricane Katrina than did men, Caucasians, or the more affluent [17]. Similarly, findings from interviews of 550 households living in "extreme poverty" in the city of Khulna, Bangladesh, indicated that, in responding to climate-related hazards (e.g., extreme heat), low-income populations usually intended to take actions only to minimize the potential negative impacts of the hazards. Communities, such as these, did not focus on using preventive measures since preventive measures often required the residents to make substantial changes to their built-in environments and seek significant financial support [16]. Moreover, when examining coping behaviors among 1,697 randomly selected German flood-affected households, a strong relationship was found between participants' socioeconomic status, prior flood experiences, and the severity of flood impact and their flood preparedness, response, and recovery behaviors. Younger populations were more inclined to take precautionary actions, including

purchasing flood insurance and adopting flood-proofing measures; In contrast, individuals who were not impacted by floods or did not have enough knowledge about floods, were more likely to take preventive measures in order to bar from a future loss [18]. Findings, such as the above, establish a strong relationship among coping with a natural disaster and demographics, prior disaster experience, and disaster awareness.

The state of Missouri is frequently beleaguered by a wide variety of natural disasters including tornadoes, snow storms, ice storms, and flooding [19]. Between 1957 and 2013, Missouri declared 55 major natural disasters. The disasters were widespread and affected a substantial number of counties and cities in Missouri. Between 1976 and 2011, Missouri declared eight state emergencies due to flooding, Hurricane Katrina, severe winter storms, and drought [19,20]. In 2013, the total number of major disasters declared by Missouri was ranked 10th among the 64 states and tribes in the U.S., and the total number of state emergency declarations was ranked 18th [21].

A significant number of Bosnian refugees call the Greater St. Louis area home. Including American-born children, the Bosnian community has continuously grown and is the largest Bosnian "city" outside of Bosnia [22,23]. The objectives of this study are to: (1) identify the strengths and limitations of problem-solving and emotional based coping, unique to Bosnian refugees resettled in the U.S.; (2) provide public emergency preparedness and response practitioners with information in risk reduction and disaster management among Bosnian refugees.

2. Materials and Methods

2.1. Study Design

Data for this paper originated from a larger qualitative study, which was designed using a grounded theory approach to elaborate and extend the Theory of Planned Behavior (TPB). The grounded theory approach allows researchers to translate a pure description of a phenomenon, an experience, or an event into a theoretical framework or "an abstract analytic schema" [24]. Also, a grounded theory approach systematically examines data gathered from participants with similar experiences in order to discover, generate, elaborate, or extend a theory or a theoretical framework used for explaining a process, action, or interaction, or guiding future research [25]. The TPB explains behaviors beyond volitional control and applies to "individual motivational factors as determinants of the likelihood of performing a specific behavior" [26]. Both demographics and environmental factors are assumed to be included in this theory rather than to have independent influences on a specific behavior [26]. The TPB consists of five key elements, including attitude toward the behavior, subjective norm, perceived behavioral control, behavioral intention, and behavior. The attitude toward the behavior is

determined by behavioral beliefs and an evaluation of behavioral outcomes. It refers to how much an individual believes that performing the behavior can have a positive outcome. The subjective norm is determined by normative beliefs and a motivation to comply, and focuses on how much an individual is motivated by his/her trusted persons (e.g. family members, friends, colleagues, experts.) to comply with their expectations. The perceived behavioral control is determined by control beliefs and perceived power and suggests that the presence or absence of facilitators or inhibitors impacts the behavioral performance. Facilitators or inhibitors can be with or without knowledge, coping skills, and resources [27]. The attitude toward the behavior, subjective norms, and perceived behavioral control determine whether an individual will attempt to carry out the specific behavior. When these elements work together towards an anticipated direction, the more influential the three elements are, the more likely the behavioral intention becomes an actual behavior [27].

2.2. Subjects

The original sample size was determined by developing a well-saturated theory, which indicates that study ends when no more new information is being received from the participants [24, 25]. In consideration of a potentially substantial loss of participants due to cultural barriers, frequent movement, and language challenges, there was a planned 10-15% increase in participant recruitment to ensure a sufficient sample size. A criterion sampling process was utilized for the study. Inclusion criteria were: (1) currently aged thirty-eight years old and above, (2) at least sixteen years old when the war started, (3) originally holding refugee status, (4) victims of Bosnian 1992-1995 war, (5) one participant per household, (6) living in the Great St. Louis areas, and (7) willing to provide in-depth information. Exclusion criteria included potential participants with cognitive impairments. Refugees who survived the 1992-1995 Bosnian war were selected because the original qualitative study focused on examining how prior war trauma contributed to individual response to a natural disaster in the “new” homeland. The participants were later recruited via a snowball sampling technique initiated through personal connections and a local Bosnian radio channel. Thirty-three Bosnian refugee adults who had resettled in the Greater St. Louis area (e.g., the city of St. Louis and South County) were interviewed for the study.

In total, 17 male and 16 female Bosnian refugees were interviewed (Table 1). Approximately 76% of the participants held full-time employment typically working as cleaners, sewing workers, mechanics, electricians, nursing home caregivers, or truck drivers. About 85% reported owning their home and having homeowners’ insurance, and the majority had basement access. All participants had at least two children. Most of their children lived either with them or within 30 minutes driving distance. Approximately 94% of the participants owned a car and drove. More than

half reported speaking English fluently, and the majority reported having learned the English language after resettling in the U.S. The range for the number of years spent in the U.S. was from 10 to 17 years.

2.3. Measures

Based on the existing literature and the TPB, the original semi-structured interview guide for Bosnian refugee participants was composed of pre-constructed complex questions. This was done so as to facilitate a dialogue between participants and the investigators and to collect in-depth information including but not limited to: individual survival skills acquired during the war, previous natural disasters, school and worksite trainings; skills for self-sufficiency; personal attributes; and emotional resilience. Sample questions include: How has being a refugee changed you and your life? How do you think that what you learned from the war can be applied to a natural disaster in the U.S.? What do you think could be the factors that would influence your response to a natural disaster? What do you think you would do to help yourself quickly recover from a natural disaster? What training/s have you received that may be relevant to a natural disaster? What is your view of receiving mental health services in the case of a natural disaster? The interview guide was validated by a group of academic and non-academic refugee experts.

2.4. Procedures

Thirty-three face-to-face, dialogue-based, semi-structured interviews were performed at each refugee participant’s home or a public place. A consent form was translated and back-translated into Bosnian language, confirmed by professional translators, and signed by the participant before each interview. The estimated duration for each interview was two hours. Participants were asked to respond to the pre-constructed complex questions and other new or specific questions emerging from previous interviews. A professional interpreter was hired from the St. Louis Bosnian Media Group and present during each interview. All interviews were digitally recorded, and completed between August and December 2013. The study was approved by the Institutional Review Board at Southern Illinois University Edwardsville with the approval number of 13-0618-1 in order to protect the human subjects involved in the study and to meet the ethical standards.

2.5. Data Analysis

The audio data were transcribed verbatim in English by three undergraduate students trained by the researchers of this study. Data were analyzed using content and thematic analysis using ATLAS ti 6.2 (GmbH, Berlin) software. Following open coding, axial coding, and selective coding for a grounded theory approach, the raw data were coded line by line; codes, subcategories, categories, and theme

emerged from the data; properties (subcategories) were filled in each category; quotations were constantly compared to each other to be fit into suitable codes, subcategories and categories [24]; and a top-down coding was used for part of the subcategories/categories based on the existing literature and the premises of TPB. For instance, quotations associated with the participants' optimism towards a natural disaster were categorized under the category of the attitude toward the behavior from the TPB. Quotations associated with the participants' knowledge and skills about a natural disaster were categorized under the category of perceived behavioral control from the TPB (Table 2). All members of the research team analyzed the data separately and then compared each other's coding repeatedly so as to maintain inter-rater reliability. In addition, simple descriptive statistics were also run to quantify the data.

3. Results

3.1. Survival and Sustainability

Approximately 36% of the participants reported having experienced a natural disaster (Figure 1). The participants also reported high awareness of natural disasters, and all of them said that they learned about natural disasters from TV, the process they referred to "self-learning" (Figure 2). Moreover, participants reported having learned about different types of natural disasters as well as various response techniques including taking shelter (e.g. bathroom, closet, and basement) at home, and staying away from windows and "covering windows with boards or woods." Thirty two of 33 participants believed that skills learned from their pre- and war experiences were useful in helping them prepare for, respond to, and recover from a natural disaster. For instance, they were used to preparing extra food and water, which could typically last for at least two or three weeks for the entire family, and liked to preserve food in their basement because of the lower temperature. Additionally, most participants reported keeping candles, flashlights, radio, blankets, pain relievers, and first aid kits at home, in their car, or both; some participants even had fire extinguishers, generators, and grills. Several participants mentioned that during the war, if they did not have flashlights, they would take a cup, add oil and fabric to it, and light the fabric. When food was short, the majority learned how to exchange goods to meet each other's needs, "have only one slice of bread each day for nine days, drink lots of water, and try to find wild fruits," and tolerate hunger and thirst for an extended time period. Some participants also noted that they learned how to use a T-shirt as a filter to get clean water. Moreover, the participants were used to walking long distances, especially at night and in the forest. One participant claimed that during the war, he walked 55 kilometers in order to get through the frontline. When they had to flee from their homes, they learned how to set up tents,

share space, and live in abandoned houses with many other fleeing families.

According to the participants, Bosnian men, in particular, were often very handy and good at both interior and exterior construction. Besides learning from their experiences, all but two participants received formal and informal emergency trainings from their school and/or work. More than 90% of the participants mentioned that in Bosnia, before the war, the Civil Protection Agency regularly organized high school students for cardiopulmonary resuscitation (CPR) training, and when they applied for a driver's license, CPR training was a requirement. They were equipped to handle small injuries and clean up wounds. Working in the U.S. provided the Bosnian refugees with access to receiving further emergency training. However, the frequency of their training varied from once every month, or once every 5 to 7 years, to once for all, and the forms of the training varied from getting paper or video instructions to only having drills. The type of emergency the participants were trained for was often limited to fire.

3.2. Social Networking and Social Support

Bosnian participants in this study were sociable, outgoing, generous, and hospitable. No matter how difficult their financial situation was, they treated their guests/friends to the best of their ability. In order to communicate, they tried hard to learn English, and were not afraid of making language mistakes. About 61% of the participants spoke English fluently, and reported learning English after they came to the U.S. and as they described, "from the street." One participant shared her experience while learning English, and how at the beginning, she tried hard to listen to others' conversations in English and learn the words and sentences. One time, she was at work in a soap factory, and her supervisor told her to deliver soaps. And she misunderstood. She thought her supervisor was asking her to sit down so she sat down until she realized that everybody was laughing at her, causing her embarrassment. It took her three years to learn the English language and feel comfortable speaking it. She was confident enough not to request any interpretation services for her doctor's visits and participated during work meetings with other Americans, took lots of notes, and talked a lot.

However, even the participants who reported limited English language ability claimed that they did not view communicating with other ethnic groups as an issue. Because of their personality and communication skills, they found it easy to make good friends. More than 90% of the participants stated that they rarely had problems with their neighbors regardless of ethnicity, religion, and language. They reported knowing their neighbors and their names and professions well, and being observant of the dynamics of their community. Moreover, they organized social events (e.g., weekend pool party, barbecue party) with their neighbors, shared each other's cultural food and products from their kitchens and gardens, served on the neighborhood

committees, and/or trusted each other to take care of their children, seniors, and families' in need. For example, one participant explained how last winter, someone cut all the tires of the cars parked in their neighborhood. One of his neighbors went out at 6am to alert him and the other neighbors about the situation so that they would not "start driving with flat tires." Another participant stated that he had been living in the same neighborhood for 12 years and experienced lots of different situations. He said that neighbors could come and stay at his house any time they needed, and that he and his family had the same access to their neighbors' houses if they were in an emergency. He was very much convinced that they would be there for each other during any difficult times.

3.3. Leadership

Many participants presented both robust confidence and leadership capacity in facing a natural disaster. For example, one participant proudly described how he rescued a drowning man after he came to the U.S. He went on to tell how one day, he was fishing along a river and saw a man drowning. There were several other people at the riverbank who had also noticed the situation. Because of the fast river flow, nobody but him dared to jump into the river and save the man's life. Another participant explained how she completed her medical training in Bosnia and was now working at a nursing home. She also described how she played a role in conducting an emergency drill at the nursing home; and how she organized all the senior residents and led them to a safe place. She said, "I have to know where medication is and the medical history of all the residents. If there is a fire or a storm, close the drapes in case windows break so that the residents don't get hurt. And take all the residents to the hallway." A participant, who was part of the Special Forces in Bosnia from 1995 to 2000, received comprehensive training that "U.S. military forces have in their own camps." He learned almost all his survival skills from his training and came to the U.S. as "an already-trained guy." He shared that he donated his blood 36 times before the war and did so again after 9/11. A participant who was a police officer in Bosnia and a participant who survived the concentration camp further explained how they took a leadership role in leading a large group of people to escape from the war zone or survived a natural disaster,

First of all, it all depends on what kind of disaster we are expecting. I could help with organizing people and things that we need, or we would need...So [I will be] organizing people and [advising them about] what to take with them. Reduce the panic. Let's for example take earthquake. I would help people get out from their apartments. I would find the right spot that would be safe [for them]...Somewhere where it's really open. Don't have any buildings or trees or electrical wires. [Bring] some necessary clothes and some needed food and that's it. So back in April 1992, [in Bosnia, I was a police officer], we had a

situation in place I used to live. We had kind of siege. So we had to go through. We had [to lead] around 150 people, and you know all kind of ages from children to people like my grandpa who was 80 years old. And we had to go over mountain to pass those lines and get out. I and some other people helped organize and go without any panic actually without any voice without talking without crying without anything, to be quiet so nobody can hear us. And we went during the night, and some people even tried to bring you know it was some kind of religion, some people had those farms with hog and chicken and stuff. And we found it out one day, and [we told them] they had to leave those [behind] and only people can go. And you know some kind of organizing there. We walked for 10 hours, and we finally reached free territory so that was kind of experience. And we told them we can make it, and we made sure they believed that we can make it if we were quiet. We told them what our chances are, we would have less chance to go through if you guys [did] not follow instructions so they did, they did listen.

I kind of experienced a month ago with a tornado. Everything happened in 15 to 20 seconds. We lost electricity, a lot of flooding around, trees falling down. It was around dinner time, 7:30pm. While we were eating, we watched TV and saw that a tornado was coming. It was showed on TV the exact location of our school, so we knew it was coming. At the moment, I just heard a strong water noise, and I left out into the hall and called the main manager immediately. Also, I told the other people where to go and tried to explain to them to keep with the doors on the thresholds because it's kind of safer because things were falling from the ceiling and the roof. I wasn't really panicked because I've had many different situations like that when I was traveling. As a traveler I had many accidents. I even experienced many, not really hurricanes, but storms before. Besides me, I had two American colleagues, and they were kind of panicked and scared so I was trying to help them be in a safe place while I was calling the manager. I don't know enough English, but I tried [to talk]. 70% of the school was destroyed – roof, walls, floor, electricity, everything. They're still trying to fix it. It's not done yet. It was pretty damaged. I was really calm [in that situation], and I did every step [that] I was supposed to. The first and basic things that I learned are to find a safe place and also help the others around me to get there too. Second, if you have a chance, get the phone and call whoever you're supposed to call in that situation – fire department. I can't explain, but you know, every time it happens in my life, somehow, not really on purpose, but somehow I get the leader function. I was leading [in] the situation. That was the first time I've ever had a tornado in my life, but I still did well.

3.4. Emotional Resilience

More than 90% of the participants in this study were optimistic. Even though many of them experienced genocide and survived concentration camps, they still felt positive and optimistic about their life and community in general. They lost everything during the war but started from scratch and built a new life in the U.S. When they were asked what drove them to survive the traumas they did and to rekindle hope for their life, the predominant response was that "it was all for our children." The participants were also emotionally independent. For instance, they strongly believed that if a natural disaster were to happen to them, they would first rely on themselves to try to survive. It was not because they did not have faith in their current government, but because: "it depends on how many people are affected. If I am alone, it is probably easy for the government to solve my situation, but if there are a million people around, then I would not expect much from the government;" "I think I am not the only one that the government has (to take care of). If I am alive after a natural disaster, I will start again working. We already lost (everything). We know how it was. It was hard but we are alive;" and "I really would not wait for them (the government). Let's say in case of an earthquake, we will have to seek for people, get them out, see who is hurt, who is not, and if we can get them to the hospital. If not, we should be ready for the emergency units."

In addition, a majority of the participants believed that they had the ability to stay calm in the face of a natural disaster although it was heartbreaking to think about the consequences. They agreed that being nervous and panicking in a disaster situation would do more harm to themselves and others than if they remained calm. Being calm would help them maintain a clear mind and helpful instinct to respond quickly. They would also be able to help others stay calm. Some of them mentioned that smoking was one of their coping mechanisms to release their stress and calm themselves down. During the war, when they did not have cigarettes, they smoked leaves wrapped up in a piece of paper. When talking about their mental health needs after a trauma, a majority of the participants felt that if they needed counseling, they would request it. A couple of participants suggested,

I think it is a good idea to go and talk to someone about your feelings because it is a terrible thing when something like that happens, especially when somebody is not strong enough to get a situation like that. After the war, I do not like talking about that. Even the doctor said, "You have to talk and get it out." I do not like it. It makes (me) always cry. I know it is not good but it is good to go and talk to somebody and get it out from you, or I do not know. Sometimes, you need medicine that makes your depression go away.

So I think they would especially (need the mental health counseling) if they find out, figure out that

they (are) acting strange and differently than they used to act. And you know in the camp you always had those people that were always more sensitive than other people, and they took it more deeply and harder than other people. They probably, people with more traumas, and they, of course, they should seek mental health counseling.

Contrary opinions about seeking help for mental health needs also emerged. One participant indicated that after a natural disaster, many people could potentially lose their loved ones. Though he recognized that this would be hard and likely lead to mental health issues, he did not think he would seek any mental health help because he felt he had both a high self-awareness and ability to be strong and just move on'. As another participant stated,

Well you know, yeah, I would recommend (the mental health counseling to) everybody because we are not the same. Like I said I lost everything (during the) Bosnian war but I survived without psychological help or anything because we didn't have it over there. But you know just because maybe that's why I'm alive, survivor, because probably I didn't have time to think about my emotional feeling and things like that.

Experience with a Natural Disaster

Figure 1. Experience with a Natural Disaster

Ways of Receiving Emergency Training

Figure 2. Ways of Receiving Emergency Training

Table 1. Bosnian Participants' Characteristics

Characteristics	Number of Participants (N)	Percentage (%)
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/Widow	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

Table 2. Sample Codes, Subcategories, and Categories

Codes	Subcategories	Categories
1. Knowledge of survival 2. Survival skills 3. Past disaster experiences 4. Supplies for emergency response 5. Equipment for emergency response 6. Awareness of natural disasters	1. Control belief of a natural disaster 2. Perceived internal power of overcoming a natural disaster 3. Perceived control of individual emergency resources	1. Perceived intrapersonal behavioral control of a natural disaster 2. Perceived readiness of overcoming a natural disaster
1. Communication skills 2. English proficiency 3. Hospitality 4. Social skills 5. Sharing 6. Generosity	1. Perceived social power of overcoming a natural disaster 2. Belief of social networking skills 3. Perceived existence of social network	1. Perceived interpersonal behavioral control of a natural disaster 2. Perceived access to social support
1. Organizational skills 2. Tolerance 3. Conflict resolution skills 4. Past leadership experiences 5. Caring	---	1. Perceived leadership skills 2. Attitude toward conflict
1. Optimism 2. Persistence 3. Calmness 4. Awareness of mental health 5. Patience 6. Self-dependence	1. Belief of overcoming a natural disaster 2. Personality 3. Estimation of disaster outcomes 4. Access to mental health counseling	1. Attitude toward overcoming a natural disaster 2. Attitude toward mental health counselling

4. Discussion

Using the grounded theory approach, findings from this study elaborated and expanded the existing theory of TPB, which helps predict Bosnian refugees' behavior intention in risk reduction and disaster management. Bosnian refugee participants reported areas of strength that could potentially help them successfully prepare, survive, and recover from a possible natural disaster. Compared to a study conducted among a group of Vietnamese refugees resettled in North Carolina [28], the current study participants resettled in the Greater St. Louis area seemed to have more social and economic advantages. A majority of participants in this study worked full-time, and owned a car and a house with homeowners' insurance, adding both stability and mobility into their everyday lives. Unlike Vietnamese refugees in aforementioned study, most participants in this study were financially capable of preparing sufficient emergency supplies (e.g., extra food and water, candles, flashlights, radio, blankets, pain relievers, and first aid kits) for a natural disaster. Moreover, the participants discussed a variety of individual skills necessary for survival and sustainability, learned from both their natural and manmade disaster experiences, and formal and informal emergency trainings. A majority of them learned to always live in a self-sufficient manner no matter what the situation was. They also learned to always remember to save and prepare for the bad times and maximize limited resources in order to sustain life. They reported knowing how to be flexible, integrate themselves into an open natural environment, and survive by utilizing and sharing natural and social resources. Participants further felt that they knew how to manage the basic critical medical conditions in order to stabilize people's life as they were trained by the Civil Protection Agency in Bosnia.

In addition, language did not seem to be a significant barrier for the Bosnian refugee participants to communicate and socialize with other ethnic groups. They welcomed any opportunity to learn and speak English, thereby, giving the general public a better representation of themselves and being better able to acculturate into the mainstream American culture. About 61% of the participants reported that they spoke English fluently. They were also highly respected and accepted by the local community. Additionally, more than 90% of the participants believed that their social connections with the local communities were sincere and reliable under any circumstances. This idea is consistent with the previous literature that suggests that higher levels of social networking and social support often lead the disaster victims to a better health outcome and a speedy recovery [8-10]. Adding to the above mentioned strengths, many individual participants demonstrated strong leadership qualities. They reported comfort in initiating actions and taking the lead in organizing people in a public disaster situation. They also expressed belief in themselves, rather than others, for rescue during the first hour after a disaster.

In other words, Bosnian refugee participants in this study were strong believers in their own ability and response for survival, while maintaining calmness in a state of chaos.

Previous literature emphasizes optimism in the wake of a catastrophe, which can directly lead to a mitigation of disaster victims' psychological distress. Optimism can also positively influence disaster victims' mental well-being through enhancing their CSE [7,12,13]. In fact, certain personality traits and mood states, such as optimism, have also been positively associated with PTG [29]. Studies looking at PTG suggest that as time passes, certain individuals can find benefits in their struggle with adversity and trauma such as war. It may well be that in the case of this sample of Bosnians, Nietzsche's line "What does not kill us, makes us stronger" holds very true. Bosnian participants in this study seemed quite confident in overcoming their own mental difficulties after the war, despite suffering PTSD, and drawing on the strengths of the traumatic experience should they ever have to deal with a natural disaster. However, concerns have been raised about this community seeking mental health services due to confidence and independence. As several participants pointed out, they were "supposed to be strong and just move on," and "didn't have time to think about my emotional feeling and things like that."

In practice, given the skills that the participants reported having, they can be effectively empowered to serve as volunteers and provide their local communities with emergency aid and disaster relief. Citizen volunteers can be especially valuable in giving life-saving aid to victims who may be in critical condition shortly after a disaster and gaining time for the arrival of first responders. Literature suggests that initial aid is often given by spontaneous community volunteers. Citizen volunteers can also play a crucial role in the process of disaster recovery [30]. Emergency response officials (e.g., police, firefighters) discussed the significant impact on the effectiveness of disaster management, which was made possible by spontaneous volunteers who responded immediately after the 9/11 attack, when the first responders were not able to respond in a typical fashion due to the loss of infrastructure, and the outside rescue teams were delayed in arrival. A local disaster volunteer officer talked about how the activities carried out by more than 15,000 volunteers significantly enhanced the effectiveness of the government response efforts during the 9/11 attack in New York City, and how the volunteerism impacted the volunteers' emotional health [7,31]. Most volunteers "experienced increased feelings of interconnection, healing, and empowerment" [31]. They also developed new relationship with firefighters, police officers, and other first responders and gained a better understanding of their responsibilities [31]. In order to minimize the impact of natural disasters on the Bangladesh's coastal areas, preparing volunteers became a part of the Bangladesh's Cyclone Preparedness Program, which involved many local people who knew their community very well. These individuals received ongoing trainings in leadership, management skills, and making a commitment to serve their communities' and other volunteers' humanity and solidarity needs [32]. Volunteers were fully capable of assisting local communities in mastering their community's emergency

resources, locating evacuation shelters, following escape routes, and identifying relief and rehabilitation programs [32].

The disaster coping strategies that the Bosnian participants in this study presented can also be valuable in guiding future risk reduction and disaster management planning efforts. For instance, given the significant importance of coping in relation to disaster management and human well-being, local individuals' customized coping has been urged to be considered as part of disaster planning. Findings from a study among Mexican disaster survivors residing in Jalisco, Florida, and Oaxaca, suggested that coping strategies, including avoidance, event meaning seeking, emotional support seeking, problem-focused coping, and mobilization of resources, were commonly and effectively used by the participants to address their immediate disaster impact. Researchers indicated that follow-up interventions for early stages disaster recovery should be considered to tailor the disaster survivors' needs of coping by assisting them in making sense of the disaster, addressing their emotional needs, helping them identifying existing community social resources for social support, so as to alleviate their disaster impact [33]. Other researchers also implicated the needs of developing adaption plans that target the local community and its individuals' capacity and competency in coping with a disaster. The general rule was to prevent ineffective coping and promote effective coping in order to improve local people and their community's disaster resilience [34,35].

4.1. Limitations

This study is not without limitations. Firstly, this is a qualitative study with a relatively small sample size limited to the Greater St. Louis area. All participants survived the 1992-1995 Bosnian war and were resettled in the U.S. Therefore, the current sample may not be representative of other Bosnian communities living in other areas of the U.S. or the world, as well as second and third generation individuals who live in St. Louis but do not have a memory of a war and are born Americans. Data loss is also a potential concern due to interpretation. Finally, since all interview questions focused on a natural disaster, the generalizability of the results to other types of adversities may be limited.

5. Conclusions

Throughout the years, Bosnian refugee participants developed strong problem-solving and emotional disaster coping skills. Since they resettled in the U.S., they accumulated both physical and social resources that they can draw upon to facilitate their coping in the wake of a natural disaster. The potential of having Bosnian refugees serve as disaster volunteers revealed the Bosnian community's hidden assets and social capital. Well-organized and trained volunteers can serve as liaisons between local communities

and outside personnel and organizations during disaster preparedness, response, and recovery. While strengthening Bosnian refugees' existing coping mechanisms and integrating them into disaster planning, disaster preparedness professionals should also pay particular attention to Bosnian refugees' emotional and mental health needs. Given the Bosnian refugees' strong personality and emotional independence, it is likely that they can underestimate their own emotional and mental health needs in the aftermath of a disaster. Previous literature has repeatedly demonstrated the severity of mental health outcomes, including PTSD, major depression, and major anxiety, among Bosnian refugees after the Bosnian war [36-38], and this should be closely considered in the wake of above findings.

Acknowledgements

We appreciated the support from Bosnian Media Group in St. Louis, Missouri.

REFERENCES

- [1] Cheah WH, Karamelic-Muratovic A. Ethnic Group Strength among Bosnian Refugees in St. Louis, Missouri and host receptivity and conformity pressure. *Journal of Immigrant and Refugee Studies*, 2013;11(4):401-415.
- [2] Keyes EF, Kane CF. Belonging and Adapting: Mental Health of Bosnian Refugees Living in the United States. *Issues in Mental Health Nursing*, 2004;25:809-831.
- [3] Carballo M, Smajkic A, Zeric D, Dzidowska M, Gebre-Medhin J, Van Halem J. Mental health and coping in a war situation: The case of Bosnia and Herzegovina. *Journal of the Biosocial Society*, 2004;36:463-477.
- [4] Michultka D., Blanchard EB, and Kalous T. Responses to civilian war experiences: predictors of psychological functioning and coping. *Journal of Traumatic Stress*, 1998;11(3):571-7.
- [5] Benight CC, Harper ML. Coping self-efficacy perceptions as a mediator between acute stress response and long-term distress following natural disasters. *Journal of Traumatic Stress*, 2002;15(3):177-186.
- [6] Jerome CD, Bickman L. Social support and psychological symptomatology following a natural disaster. *Journal of Traumatic Stress*, 1990;3(4):541-556.
- [7] Karanci NA, Acarturk C. Post-traumatic growth among Marmara earthquake survivors involved in disaster preparedness as volunteers. *Traumatology*, 2005;11(4):307-323.
- [8] Rajkumar AP, Premkumar TS, Tharyan P. Coping with the Asian tsunami: Perspectives from Tamil Nadu, India on the determinants of resilience in the face of adversity. *Social Science & Medicine*, 2008;67:844-853.
- [9] Glass K, Flory K, Hankin BL, Kloos B, Turecki G. Are Coping Strategies, Social Support, and Hope Associated With

- Psychological Distress Among Hurricane Katrina Survivors? *Journal of Social and Clinical Psychology*, 2009; 28(6):779-795.
- [10] Feder A, Ahmad S, Lee EJ, Morgan JE, Singh R, Smith BW, Southwick SM, Charney DS. Coping and PTSD symptoms in Pakistani earthquake survivors: Purpose in life, religious coping and social support. *Journal of Affective Disorders*, 2013;147:156-163.
 - [11] Benight CC, Antoni MH, Kilbourn K, Ironson G, Kumar MA, Mary Ann Fletcher, Laura Redwine, Andrew Baum, and Neil Schneiderman. Coping self-efficacy buffers psychological and physiological disturbances in HIV-infected men following a natural disaster. *Health Psychology*, 1997;16(3):248-255.
 - [12] Benight CC, Swift E, Sanger J, Smith A, Zeppelin D. Coping self-efficacy as a mediator of distress following a natural disaster. *Journal of Applied Social Psychology*, 1999;29(12):2443-2464.
 - [13] Sumer N, Karanci NA, Berument SL, Gunes H. Personal resources, Coping self-efficacy, and quake exposure as predictors of psychological distress following the 1999 earthquake in Turkey. *Journal of Traumatic Stress*, 2005;18(4): 331-342.
 - [14] Teodorescu DS, Siqueland J, Heir T, Hauff E, Wentzel-Larsen T, Lien L. Posttraumatic growth, depressive symptoms, posttraumatic stress symptoms, post-migration stressors and quality of life in multi-traumatized psychiatric outpatients with a refugee background in Norway." *Health and Quality of Life Outcomes*, 2012;10(84):1-26.
 - [15] Lieblich J, Boskailo E. *Wounded I am more awake: Finding meaning after terror*, Vanderbilt University Press, Tennessee, 2012.
 - [16] Haque AN, Dodman D, Hossain MM. Individual, communal and institutional responses to climate change by low-income households in Khulna, Bangladesh. *Environment and Urbanization*, 2014; 26:112-129.
 - [17] Spence PR, Lachlan KA, Burke JM. Adjusting to uncertainty: Coping strategies among the displaced after Hurricane Katrina. *Sociological Spectrum*, 2007;27:653-678.
 - [18] Thieken AH, Kreibich H, Mülle M, Merz B. Coping with floods: preparedness, response and recovery of flood-affected residents in Germany in 2002." *Hydrological Sciences Journal*, 2007;52(5):1016-1037.
 - [19] State Emergency Management Agency. *Declared Disasters in Missouri*, 2013. Online available from http://sema.dps.mo.gov/maps_and_disasters/disasters/
 - [20] Federal Emergency Management Agency. *Disaster Declarations for Missouri*, 2013. Online available from <http://www.fema.gov/disasters/grid/state-tribal-government/67>
 - [21] Federal Emergency Management Agency. *Disaster Declarations by State/Tribal Government*, 2013. Online available from <http://www.fema.gov/disasters/grid/state-tribal-government>
 - [22] International Institute-St. Louis. *20,000th refugee is sponsored by International Institute*, 2012. Online available from <http://www.stlbosnians.com/20000-th-refugee-is-sponsored-by-international-institute/>
 - [23] Tomazic T, Hisako M, Karamehic-Muratovic A., Cheah WH, Poljarevic A. Cross-cultural adaptation of Bosnian refugees in St. Louis, Missouri: methodological considerations. Paper presented at the International Conference on Survey Methods in Multinational, Multiregional, and Multicultural Context (3MC), 25-28 June, Berlin Germany, 2008. Online available from <http://csdiworkshop.org/v2/index.php/2008-3mc-conference>
 - [24] Creswell JW. *Qualitative inquiry and research design: Choosing among five approaches*, Sage, CA, 2007.
 - [25] Corbin J, Strauss A. *Basics of qualitative research: Techniques and procedures for developing grounded theory*, Sage, CA, 1998.
 - [26] Montano DE, Kasprzyk D. The theory of reasoned action and the theory of planned behavior. Pp. 67-69 in *Health Behavior and Health Education*, edited by Karen Glanz, Barbara K. Rimer, and Frances M. Lewis. Jossey-Bass, CA, 2002.
 - [27] McKenzie JF, Neiger BL, Thackeray R. *Planning, implementing, & evaluating health promotion programs: A primer*, Benjamin Cummings, CA, 2012.
 - [28] Xin H, Aronson RE, Lovelace KA, Strack RW, Villalba JA. Resilience of Vietnamese refugees: Resources to cope with natural disasters in their resettled country. *Disaster Medicine and Public Health Preparedness*, 2013;7:387-394.
 - [29] Linley AP, Joseph S. Positive change following trauma and adversity: A review. *Journal of Traumatic Stress*, 2004;17(1):11-21.
 - [30] Helslootn I, Ruitenbergnn A. Citizen response to disasters: A survey of literature and some practical implications. *Journal of Contingencies and Crisis Management*, 2003;12(3):98-111.
 - [31] Lowe S, Fothergill A. A need to help: Emergent volunteer behavior after September 11th, 2003. Online available from http://www.colorado.edu/hazards/publications/sp/sp39/sept11book_ch11_lowe.pdf
 - [32] Mathbor GM. 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*, 2007;50(3):357-369.
 - [33] Ibanez GE, Buck CA, Khatchikian N, Norris FH. Qualitative analysis of coping strategies among Mexican disaster survivors. *Anxiety Stress & Coping*, 2004;17(1):69-85.
 - [34] Fredrickson BL, Tugade MM, Waugh CE, Larkin GR. What good are positive emotions in crises? A prospective study of resilience and emotions following the terrorist attacks on the United States on September 11th, 2001. *Journal of Personality and Social Psychology*, 2003; 84(2):365-376.
 - [35] Jabeen H, Johnson C, Allen, A. Built-in resilience: Learning from grassroots coping strategies for climate variability. *Environment and Urbanization*, 2010;22:415-431.
 - [36] Knipscheer JW, Kleber RJ. The relative contribution of posttraumatic and acculturative stress to subjective mental

health among Bosnian refugees. *Journal of Clinical Psychology*, 2006; 62(3):339-353.

2001;286(5):546-554.

- [37] Mollica RF, Sarajlić N, Chernoff M, Lavelle J, Vuković IS, Massagli MP. Longitudinal study of psychiatric symptoms, disability, mortality, and emigration among Bosnian refugees. *Journal of American Medical Association*, 2001;286(5):546-554.
- [38] Weine SM, Razzano L, Brkic N, Ramic A, Miller K, Smajkic A, Bijedic A, Boskailo E, Mermelstein R, Pavkovic I. Profiling the trauma related symptoms of Bosnian refugees who have not sought mental health services. *Journal of Nervous and Mental Disease*, 2000;188(7):416-421.