# **Resilience of Vietnamese Refugees: Resources to Cope with Natural Disasters in Their Resettled Country**

By: Huaibo Xina, Robert E. Aronson, Kay A. Lovelace, Robert W. Strack, José A. Villalba

Xin, H., Aronson, R.E., Lovelace, K.A., Strack, R.S., & Villalba, J.A. (2013). Vietnamese Refugees' Resilience: Resources for Coping with Natural Disasters in their Resettled Country. *Disaster Medicine and Public Health Preparedness*. 7(4), 387-94. doi: 10.1017/dmp.2013.44

Made available courtesy of Cambridge University Press: http://dx.doi.org/10.1017/dmp.2013.44

\*\*\*© Society for Disaster Medicine and Public Health, Inc. Reprinted with permission. No further reproduction is authorized without written permission from the Society for Disaster Medicine and Public Health, Inc. & Cambridge University Press. This version of the document is not the version of record. Figures and/or pictures may be missing from this format of the document. \*\*\*

#### Abstract:

Objective: Study findings suggest that refugees are more vulnerable than the general population to mental disorders from disasters. This pilot study explored the nature of Vietnamese refugees' resilience to a potential natural disaster as a first step toward improving their disaster mental health.

Methods: Interviews were conducted with 20 ethnic Vietnamese and Montagnard adult refugees using a semistructured interview guide. Factors in resilience at both individual and family levels were examined.

Results: Our results indicated that these refugees had positive personalities and strong family cohesion. However, although a majority of the participants had experienced natural disasters, they lacked knowledge and specific strategies to cope with these events. The individual participants and their families lacked sufficient information, financial resources, emergency supplies, or social support for a natural disaster.

Conclusions: Enhancing refugees' current strengths in responding to disasters, delivering them tailored emergency training, strengthening relationships between refugee service providers and refugee communities, and advocating for refugees' socioeconomic capacity building should be considered.

**Keywords:** disaster mental health | natural disaster | resilience | refugees | ethnographical approach | public health

# Article:

Public disasters, whether natural or manmade, take a tremendous toll not only on people's lives and properties but also on the mental health of survivors. Numerous studies conducted with diverse population groups have demonstrated the impact of disasters on both the prevalence and incidence of disaster-related mental disorders such as major depression, anxiety, and posttraumatic stress disorder (PTSD).<sup>1-3</sup> A variety of factors affect a population's vulnerability to mental disorders in the event of a public disaster. For instance, regardless of the type of trauma, cumulative traumatic or disaster experiences are associated with increased risk for mental illness.<sup>4-6</sup> A history of psychiatric disorders increases the likelihood of a recurrence or new development of mental illness during or after a public crisis.<sup>2, 7-10</sup> Moreover, receiving a late psychological crisis intervention or no intervention can intensify a victim's risk of developing a mental disorder.

Refugee populations have often experienced multiple traumas (eg, famine, torture, deadly infectious diseases, witnessing family members or friends killed, forced isolation, and a feeling of being close to death) in their country of origin, in refugee camps, or during forced migration before arriving in a resettlement country.<sup>11-14</sup> Among refugees, the prevalence of psychiatric disorders is also high. Epidemiological data suggest that refugees in the United States are more susceptible to depression, anxiety, and PTSD than the general population.<sup>15-17</sup> In addition, refugees are underserved by the US mental health system because of a lack of accessibility to and utilization of mental health services.<sup>11, 18-20</sup> Thus, refugees can be more vulnerable to mental disorders in public disasters than the general population.

# **Individual Resilience**

In the past 20 to 30 years, resilience has been identified as a factor in mitigating the effects of disasters on mental health.<sup>21</sup> Research efforts have been redirected from simply minimizing the consequences of adversities to strengthening each individual's capacity to overcome difficulties by building up their resilience.<sup>21</sup> Individual resilience has been described as a *personal quality*<sup>22,23</sup> that is associated with an individual's physical and psychological attributes; roles and relations in society; exposure to stressful situations; and worldview or life paradigm.<sup>24</sup> An essential component of resilience is the synthesized and sustained competence (eg, skills, knowledge, insights, emotions) in dealing with stress that results from encountering stressful events such as a public disaster.<sup>21 - 23,25</sup> Resilient individuals are less likely to experience negative mental health effects.<sup>26</sup> A number of studies have suggested a predictive relationship between resilience and mental health in a stressful or traumatic event and a moderating role of resilience in reducing the negative impact of stressors and traumas on the onset of psychiatric impairments.<sup>27 - 29</sup>

#### **Family Resilience**

Individual resilience is cultivated and regulated by the resilience exhibited by the family unit.<sup>30</sup> *Family resilience* has been defined as a type of relational resilience that "seeks to identify and foster key processes that enable families to cope more effectively and emerge hardier from crises or persistent stresses, whether from within or from outside the family."<sup>30</sup> Resilient families can be categorized into 3 typologies: balanced families with the strongest viability, rhythmic families with most highly structured family times and routines for specific family activities, and regenerative families with the most family cohesion.<sup>31</sup> How a family copes with a disaster affects the immediate and long-term adjustment and adaptation of both the unit and its members.<sup>30, 32</sup> Every family operates as an adaptive system for its members, who are protected during emergency preparation, response, and recovery by the well-established functions of the family.<sup>33, 34</sup>

A family resilience framework was proposed to serve as a conceptual map for designing prevention and intervention programs to increase family resistance to and recovery from a disaster.<sup>35,36</sup> Three domains were suggested as core aspects of family resilience: (1) a shared family belief system that contributes to family resilience by bringing meaning to a crisis, encouraging family members to maintain a positive and optimistic view of the situation, and providing religious or spiritual support; (2) family organizational patterns that foster family resilience by means of a "flexible structure, shared leadership, mutual support, and team-work in facing life challenges"<sup>35,36</sup>; and (3) family communication processes that facilitate family resilience through clarifying "ambiguous situations," encouraging "open emotional expression and empathetic response," and supporting "collaborative problem solving."<sup>35,36</sup> Two studies have demonstrated that trauma-related healing services using a family-oriented resilience approach were well accepted by Bosnian and Kosovar refugees.<sup>35</sup>

Linking these perceptions together, the current pilot study explored both individual and family resilience of Vietnamese refugees to a potential natural disaster. The purpose of this study was to seek primary responses among Vietnamese refugees resettled in Greensboro, NC, to (1) the nature of individual and family resilience to a potential natural disaster, (2) factors that support or impede resilience at individual and family levels that should be addressed in the future to reduce risk of mental illness as a result of a natural disaster, and (3) what public health professionals need to know about the nature of individual and family resilience among Vietnamese refugees to adequately prepare this population.

#### Methods

#### **Subjects**

This pilot qualitative study used an ethnographic approach with Vietnamese refugees who first started resettling in the triad area of North Carolina in the late 1970s.<sup>37, 38</sup> By 2007, the number of resettled Vietnamese refugees in this area (including minority groups, such as Montagnards, Chinese Vietnamese, Chams, and Khmers) reached approximately 9730.<sup>39</sup> Of these, the majority

resided in Greensboro, Raleigh, Charlotte, Winston-Salem, and High Point.<sup>37, 38</sup> In 2006, the number of newly resettled Vietnamese refugees in North Carolina was second only to California.<sup>40</sup> Also, Greensboro has the largest Montagnard community outside of Vietnam.<sup>41</sup>

In this study, refugees were defined by the status they carried when they first entered the United States. Both nonprobability snowball sampling and criteria sampling were used to recruit the participants from this hard-to-reach population. A total of 20 adult Vietnamese refugees, including 10 ethnic Vietnamese majorities and 10 Montagnard Vietnamese minorities, participated in the study from September 2010 to January 2011 (Table). Pseudonyms were used to protect their identity.

Characteristics	No. of Participants	Percentage
Gender		
Male	15	75
Female	5	25
Marital status		
Married	18	90
Single/separated	2	10
Age, y		
<40	1	5
40-70	17	85
>70	2	10
Religion		
Yes	19	95
No	1	5
Language		
Vietnamese	10	50
Jarai/Rhade/Bunong/Koho	10	50
Employment		
Yes	6	30
No	14	70
Years in Greensboro		
<1	1	5
1-2	7	35
2-5	7	35
>5	5	25
Total	20	

Table. Characteristics of Study Participants

#### Measurements

A semistructured interview guide, validated by 9 academic and nonacademic refugee experts, was designed to capture the characteristics of individual and family resilience. The questions

were built on an in-depth review of previous research and validated measurements, such as the Connor-Davidson Resilience scale (CD-RISC)<sup>22</sup> and the Ways of Coping Questionnaire (WOCQ).<sup>42</sup> They were situated in an assumption of an upcoming natural disaster like a tornado, winter storm, hurricane, or flood. Questions to examine individual resilience focused on previous stressful experiences such as a public emergency, personal traits, coping skills, and tangible and intangible resources.<sup>22, 25, 42-46</sup> Questions to examine family resilience covered the key process of fostering family resilience, including family belief systems (eg, spirituality and making meaning of adversity), communication processes (eg, collaborative problem solving), and organizational patterns (eg, connectedness and socioeconomic resources).<sup>30</sup>

### Procedures

The study was approved by the Institutional Review Board at the University of North Carolina at Greensboro. A Vietnamese version of the consent form was signed by the participants at the beginning of each interview. Twenty face-to-face individual in-depth interviews were completed in participants' homes, community centers, or local restaurants. A professional interpreter was present each time. All interviews were digitally recorded. Supplemental data were collected from interviews with 3 refugee service providers, on-site observations, and informal conversations with Vietnamese interpreters. These data served to verify the primary data and support their interpretation.

### Analysis

All audio data were transcribed in English and analyzed using ATLAS Ti version 6.0 (ATLAS Ti Scientific Software Development). Using an ethnographic approach allowed the researchers to describe and interpret the "shared and learned patterns of values, behaviors, beliefs, and languages of a cultural sharing group."<sup>47</sup> The data were analyzed first to gain a portrait of the commonalities among the participants, and then both top-down coding and analysis of themes were used to establish a coding system. Data were assigned to categories referencing individual resilience (experiences with natural disasters, personal traits and coping strategies to deal with problems and disasters, and resources with a natural disaster), and family resilience (making meaning from adversity, spirituality, collaborative problem solving, connectedness, and social economic resources).<sup>22, 23, 30</sup>

#### Results

Of the 20 participants, 15 were men, and most were between the ages of 40 and 70 years. All but 2 were married. In total, 19 of 20 identified themselves as either Christian or Catholic. The ethnic Vietnamese often spoke only Vietnamese. The Montagnards were multilinguistic. Their native languages were Jarai, Rhade, Bunong, or Koho, and they were fluent in 1 of these and good at some of the rest. However, most of them did not know how to read and write in their own languages. All of the participants except 1 had resided in Greensboro for 1 to 5 years or more.

#### **Individual Resilience**

#### **Experience with Natural Disasters**

Twelve of the 20 participants (60%) reported that they had personally experienced a natural disaster while living in Vietnam. Hurricanes, tornados, and flooding were most frequently mentioned. Six participants reported being exposed to severe weather conditions in Greensboro. Only 2 female participants reported knowing nothing about natural disasters. Minh described his repeated experiences with weather-related disasters.

From August to September, I got a lot of hurricanes. One year, I got 11 hurricanes....Everything was destroyed. The roof flew away. ...Hurricane in 1999, the water from the ocean rose. Raining and flooding, water coming down from the mountain, the wind was very strong and flushed away all the houses. Animals died. Flushed everything away. When the water was running, everything including animals was flushed to the ocean...My house was destroyed. Before the flood or hurricane, they let me know and I moved to a safe location.

The term *natural disaster* was not familiar to all participants, but they could describe what one was like, for instance, "a very heavy wind," "quickly," "lots of raining," "house was shaking," and "water all over the place." They could describe the consequences of a disaster using concrete and physical terms, "heavy wind and pull my house to one side"; "tornado came with very heavy wind; it damaged my house"; "my house was not built by bricks but built by leaves so it was easy to, when there was a tornado, be damaged or fall"; "from my house to the market, the trees fell"; and "the tornado went straight in a line. Just (after) a couple of minutes, everything was damaged."

#### Personal Traits and Coping Strategies to Deal With Problems and Disasters

The participants described personal traits that allowed them to cope and survive during difficult times while in Vietnam. They cited the need to be focused, calm, persistent, patient, and optimistic. Giang noted that when he was facing a problem, he was often calm and tried to resolve the problem since he believed that being angry would not be helpful. Also, Da.o said that if he was experiencing difficult things, he would stay there and do whatever he should be doing until the end, and would not just walk away. The participants said that they would not give up their lives easily, especially after experiencing all the previous life traumas (eg, poverty, famine, living in the jungles). They would be scared in the wake of a natural disaster like everyone else, but they would also discipline themselves to overcome the fear until they reached their limitations; as De said, "I believe I will be scared, but I will be calm."

Thu: (In a natural disaster situation), (I would be) pretty optimistic. You know. I am not stuck with the hard time. I will overcome it. I believe everything happens for a reason, good or bad. I think everything...if you calm down yourself and you do what you are supposed to do, and

follow your instinct, you can skip (overcome) the disaster or find a way to get out of it. That is what I believe.

Hung: (In a difficult situation), first thing is I have to be patient and then ask what happened and why (it happened). (Then) I will try to understand the situation and to solve the problem.

Participants described both problem-solving and emotion-driven coping skills with difficulties. However, they expressed more concerns about dealing with a disaster in the United States than in Vietnam, for example, "We know a little bit but no one told us yet," "If it happens, I will call the police only; I don't prepare," "Natural disaster here may be stronger than the one in Vietnam so probably I will ask for help...," and "because of the language barrier, I don't know how to ask them for help."

### **Resources for a Natural Disaster**

More than one-half of the participants did not have a TV or access to a weather channel. A majority did not listen to a radio. Participants who had a TV had access to a severe weather warning through a local or national weather channel or daily news broadcasting. Although they could not understand the English used by television broadcasts most of the time, they identified the information by recognizing the typical weather icons shown on the screen. Unfortunately, they were not able to have these weather channels all the time, because they terminated their television services whenever they were short of money.

Although most participants expected to receive help from their local ethnic organizations and resettlement agencies, after they were resettled in Greensboro for several years, they no longer had the contact information available for these organizations or agencies. They had friends, but in most cases, they said "if I don't have the number, how can I call them?" and "all my friends live far away from me." If they needed their neighbors' help, they might encounter the situation: "because of the language barrier, when I meet them, I don't know how to communicate with them. They don't know how to communicate with us." Fortunately, local churches had provided them places for regular gatherings. The senior resources center was also a frequent social meeting place for most senior ethnic Vietnamese.

If they needed help from the government, the only direct access they knew was to call 911, as they believed that "the police will tell the government (about their situations and needs)" for them. Whether they were Montagnards or ethnic Vietnamese, they expressed a great deal of faith in the US government, particularly in the face of a public disaster. Ho.c thought that helping people was the duty of a government, that the government loved the people, and that the government would not want anyone to die.

#### **Family Resilience**

#### Shared Family Belief Systems—Spirituality

Nineteen of 20 families had a common family religion. Eighteen participants said their family went to church together and usually went regularly most of the time. In some families, praying together was an essential strategy in coping with a natural disaster. For example, Thanh explained,

If it [a natural disaster] happens, we [will] just try to stay in our room and pray to God, not only for our house, [but also] for this area, for Greensboro too. We pray and pray for God to keep us... [In order to recover from a disaster], to protect or to fight back, we don't know how. But for ourselves, not only for me, I usually have all my family stay together and pray together. That is all we will do. Of course, we will discuss something if we need but in the end we pray. That's all....The first one is we will try to gather the family to tell the news and comfort [each other], 'please don't go anywhere or please don't do anything. If something happens, just stay home.' The second one is we rely on God. We pray.

Some said they would pray and seek comfort from their Father [Catholic priest] before they asked for any other help. Danh said,

I am a Catholic so I believe in God. If something happens like that, if the Father comes over there and says something to me and calms me down, it will be very important. The government can come maybe a little bit later and help us to recover. I believe the Church World Services and the sponsor will come to help me.

# Family Communication Processes—Collaborative Problem Solving

All of the participants reported that the man was the head of the house in their families. As long as the husband, father, or a senior male relative was present, the man would be the decision-maker. If only women were at home, children usually had to listen to their mothers, and younger siblings had to listen to older siblings. An said that she never disagreed with her husband even if she had different opinions, and she would forgive him if he made a wrong decision for the family. Similarly, Chi reported that she would be absolutely aligned with her husband's decision because she was a woman, she was learning slowly and could not keep up with the work demand in America, and she did not drive a car. Truc said that her husband never thought he would make a wrong decision for his family. He gave assignments to her and their children, and then all the family would come together and accomplish their assignments.

As a man, Ho.c thought his family did not know anything; he was the person trying to do something for his family so there was no doubt that his family should listen to him and follow his decision. However, of these families, approximately two-thirds did go through a shared decision-making process, if time was available for an open discussion. Xuan believed that the family needed to discuss the issues, identify priorities, and decide everything collectively. They would try to stay together, discuss, and solve the problem. Duc agreed that his family should jointly make decisions to help the family from now and into the future. Thanh clarified his responses by different situations:

If we have time, of course, we will try to decide together. I will unite my family and ask them how to decide. If it is an emergency and we need to be quick, of course, I will decide. But of course, the decision will be the same, not different. The decision from my family and from me will be almost the same. If I decide, they will have to agree. If we decide together, we all agree too.

Most participants declared that even if they were encountering a natural disaster, if every family member contributed ideas, the final decision would be better. As Tho noted, "More people thinking is better than one [person's idea] because I can pick the one [that is] really good."

Uoc: If together, I can ask my children. Together, the husband and the wife, we will try to decide together. It's better than to solve a problem by myself or by my husband himself. Because we are afraid, we may not know what to do. So of course, we have to discuss.

Minh: The whole family [that] works together is better than one [person]. One tree will not be tall enough but three or four trees (added together) will be tall like a mountain. Sometimes because I am old, I don't remember things. My son will remind me and help me out.

# Family Organizational Patterns—Connectedness

Each participant reported how their family or extended family gave each other emotional and behavioral support. They spoke to each other about their needs. Chi said that normally her husband and children helped her clean the house and wash the dishes. Xuan and his children helped his wife cook or do the cleaning. Duc's older sons helped the family pay for the rent and food when they had money. An agreed that her husband had given her and their children much courage and confidence. Ho.c always told his wife not to worry too much about their lives and not to be sad. He tried his best to advise and comfort her when they were challenged in their lives.

In an emergency situation such as a natural disaster, Uoc believed that he and his family would communicate with each other more frequently than usual and would advise each other not to be frustrated, sad, or worried. Duc said that after a tornado he experienced in Vietnam, he and his family together repaired their house, mostly the roof, before the US army got involved. To.ai and Danh both remembered their responses to a tornado in Vietnam,

All of a sudden, it came. I did not know it was coming. [When it happened], I got something around to hold the house... [Otherwise it would fall.]...All [the rest of the] family was gone. I stayed. [I did not go with them because] I was afraid the house [would be] blown away...I knew the wind was so strong. I got scared so I ran out of the house...

[I asked my family to go first.] All the children go. All the personal property was damaged by the water/rain.

In 2008, tornado in Vietnam...The house was shaking. My son and I had to hold it and pull it...We got pillars and I was holding it... Grandkids were under the bed...Sometimes the wind blows them [metal roofs] away. It flies and can cut people. Usually in Vietnam, we have wood tables. [They are] very strong. The wood is very good. So I told them [grandchildren] to get down under the bed and table. It only happened five to eight minutes and then it stopped. If it was longer, it [would) probably damage the house, [like] collapse...a little damage in the back. Some of the metal roofs were blown away. Usually Vietnamese houses, [the roofs], they have an angle, 45 degrees, so the wind might not be able to pull them out. The wind will not take the whole thing off...That was my first time to experience that...[After the tornado], I just cleaned up the damages. I got my son [to help me].

If a natural disaster occurred in Greensboro, Minh believed his family would help each other and listen to each other to solve the problem. The main thing was to take the family to a safe location and prepare what was necessary to help each other. Tho thought that everyone would be responsible for different things to assist each other. Danh thought each family member would carry the necessary documents and some light supplies like clothes. Ho.c said that as long as he and his family could be together, even if they had to die, he would not be afraid.

It was not uncommon for participants to highlight how they would take care of their children and vulnerable family members in a natural disaster. Chi mentioned that during the previous year's snowstorm, her husband went out to buy the groceries and did not let their children go with him. He told them if anything happened, it would only happen to him. To ai said that if a disaster happened, and they did not have enough food, they would encourage their kids to eat to survive. Bao made it clear that in a disaster they would take care of the kids first. Giang expressed his thoughts thus,

My wife's health is not great. So if something happens, I will take my wife to a safe place first and come back to do what [I] have to do to take care of here. Losing everything is ok. Everything in the house is gone, that is fine. The [my] wife and the [my] children are very important to me.

#### Family Organizational Patterns—Economic Resources and Emergency Supplies

Twelve of the 20 families had a car. A majority of the families often stored bottled water, instant noodles, and rice at home that could last between a week and a month. Some participants said they would like to prepare more emergency supplies. For example, Danh's family would prepare a tent and put it in a bag. They also had raincoats. He and his family would like to have everything together and get ready in advance. Thanh would have some medicine for his family, but he said they only had some "very simple medicines" such as over-the-counter pain relievers, and he and his family were "not ready for a big thing to happen." They already had food available for their kids, specifically milk. However, they also reported that their family financial situation would determine whether they would be able to have these emergency supplies ready.

Duc noted, "Unfortunately, my children, mostly two adults, they don't have a job yet. So because they don't have a job, my car is broken but I cannot fix it. I don't have the money to fix it."

# Discussion

# **Individual Resilience**

Overall, the participants were friendly, hospitable, calm, patient, and persistent. Most, however, were reserved in their interactions. They did not disclose personal issues or express their feelings easily in public. They also maintained a certain degree of caution about both their physical and social environment. This behavior could be linked to their previous traumas such as being in jail for years, fleeing their country, and living in the jungle. Although they agreed that life in the United States did not seem to be as dangerous as their lives before migration, they continually encountered obstacles such as financial distress, acculturation maladjustment, and separation from their families in Vietnam. These cumulative life stressors and traumas might predict lower levels of individual resilience and an increased vulnerability to potential natural disaster.43

Most of the respondents were aware of natural disasters based on what they had experienced, seen, and heard. A further inquiry about disaster-related terminologies, consequences, and preparation was beyond their current knowledge. They also indicated both their problem-solving and coping skills. It appeared, however, that they were more confident about responding to a natural disaster in Vietnam than in the United States, particularly as it related to receiving severe weather warnings, locating a shelter, finding emergency supplies, shoring up their houses, and gaining access to neighbors and other social networks. Their potential responses to a natural disaster have been presented simply and vaguely. The findings suggest that this could be due to their lack of knowledge and skills to cope with a natural disaster as well as their inexperience with natural disasters in the United States, unfamiliarity with their current environment, and lack of information, supplies, and social support.

Strengthening their individual coping strategies and increasing the availability of resources may enhance their resilience and eventually decrease their vulnerability to disaster mental illness in the event of a future natural disaster.<sup>43, 48</sup> The data suggest that the participants would be dependent on the support of the US government, refugee resettlement agencies, ethnic organizations, and churches in the wake of a natural disaster. This finding raises the question of how well these local social entities are prepared for their people during a public emergency.

# **Family Resilience**

Most Vietnamese families could fall into the categories of rhythmic and regenerative families.<sup>31</sup> Family was the core of the refugee participants' life. Family members were strongly connected and living "warmly and tightly together." They were connected both physically, emotionally,<sup>49</sup> and spiritually. They believed in the same God, prayed to him jointly, and were inspired by him. Family members constantly communicated with each other through lunch,

dinner, breaks, regular visits, and phone calls. They lived either together or nearby. They promoted collaborative problem-solving through open family discussion, although men were still in charge of the decision-making. Whether or not this process was effective, the conversation was initiated and maintained at least under a normal circumstance. In a natural disaster, given the time constraint, problems may not be discussed, and decisions may have to be made by men only. However, the participants believed that a collaborative response to a natural disaster would be wiser and more comprehensive. They allocated family responsibilities to individuals based on each person's strength in most situations, including a crisis.

Taking care of the younger generation and vulnerable family members was the family's priority under all circumstances. No family member would be left out. At the same time, participants consistently noted a lack of collective family social and economic resources in general. Although most participants said they were aware of their family's needs in a natural disaster, their families had neither the financial capacity nor the social capital available to meet these needs. For instance, diversity of communication techniques among family members, availability of family emergency supplies, and accessibility of family social networks were significantly lacking.

### Limitations

All the participants lived in Greensboro, and data collected from them may not be generalizable to other refugee groups in other areas. Interviewing Vietnamese refugees in areas with more natural disasters, such as California, could result in different findings. Also, 15 of the 20 participants were men. Finding women who could provide in-depth information on this subject was a challenge. The female participants appeared to be less experienced and to have fewer skills coping with a natural disaster. Even for many of the male participants, this was not a topic they were familiar with and had often thought about. Finally, information could have been lost or distorted during the back and forth interpretation among the interviewer, interviewee, and interpreter.

# Conclusions

This pilot study provides initial insight into Vietnamese refugees' individual and family resilience to a potential natural disaster. To adequately prepare refugee populations, such as the target population in this study, for natural disasters, public health professionals should consider (1) enhancing refugees' existing strengths, for instance, their constructive personal traits, traditional family cohesion, emotional and behavioral family connectedness, and survival skills learned from previous traumatic experiences; (2) increasing their awareness of natural disasters as well as disaster coping strategies through tailored and continuous disaster preparedness training or education (Most participants reported that regardless of the content, paper handouts were usually lost.); and (3) strengthening ties between public health professionals and local refugee resettlement agencies, ethnic organizations, and churches, which have immediate access to refugee communities. Through these groups, large-scale dissemination of disaster-related

information to this population would be possible. However, the organizational, financial, and personnel capacity of many of these agencies and organizations is currently challenged. Building direct relationships between public health professionals and refugee key informants living in the communities may be an alternative.

Finally, it is important to create interdisciplinary collaboration and promote cross-disciplinary advocacy for capacity building to aid refugee populations to develop their social networks and improve their socioeconomic status. Currently, many refugees are underresourced, and communication, social capital, and financial capacity remain major challenges.

### Funding and Support

Montagnard Dega Association, Center for New North Carolinians, and Church World Service at Greensboro, North Carolina.

### References

1. Galea, S, Nandi, A, Vlahov, D. The epidemiology of post-traumatic stress disorder after disasters. Epidemiol Rev. 2005;**27**(1):78-91.

2. Jehel, L, Paterniti, S, Brunet, A, et al.. Prediction of the occurrence and intensity of post-traumatic stress disorder in victims 32 months after bomb attack. Eur Psychiatry. 2003;**18**(4):172-176.

3. Satcher, D, Friel, S, Bell, R. Natural and manmade disasters and mental health. JAMA. 2007;**298**(21):2540-2542.

4. Shevlin, M, Houston, JF, Dorahy, MJ, Adamson, G. Cumulative traumas and psychosis: an analysis of the national comorbidity survey and the British psychiatric morbidity survey. Schizophrenia Bull. 2008;**34**(1):193-199.

5. Mollica, RF, McInnes, K, Poole, C, et al.. Dose-effect relationships of trauma to symptoms of depression and post-traumatic stress disorder among Cambodian survivors of mass violence. Brit J Psychiatry. 1998;**173**:482-488.

6. Neuner, F, Schauer, M, Karunakara, U, et al.. Psychological trauma and evidence for enhanced vulnerability for posttraumatic stress disorder through previous trauma among West Nile refugees. BMC Psychiatry. 2004;**4**(34):1-7.

7. Gabriel, R. Psychopathological consequences after a terrorist attack: an epidemiological study among victims, the general population, and police officers. Eur Psychiatry. 2007;**22**(6):339-346.

8. Mills, MA, Edmondson, D, Park, CL. Trauma and stress response among Hurricane Katrina evacuees. Am J Public Health. 2007;**97**(S1):S116-S123.

9. North, CS, Nixon, SJ, Shariat, S, et al.. Psychiatric disorders among survivors of the Oklahoma City bombing. JAMA. 1999;**282**:755-762.

10. Silver, RC, Holman, EA, McIntosh, DN, et al.. Nationwide longitudinal study of psychological responses to September 11. JAMA. 2002;**288**:1235-1244.

11. Lears, LO, Abbott, J. The most vulnerable among us. Health Prog. 2005;86(1):22-25.

12. Gardozo, BL, Vergara, A, Agani, F, et al.. Mental health, social functioning, and attitudes of Kosovar Albanians following the war in Kosovar. JAMA. 2000;**284**(5):569-577.

13. Karunakara, UK, Neuner, F, Schauer, M, et al.. Traumatic events and symptoms of post-traumatic stress disorder amongst Sudanese nationals, refugees and Ugandans in the West Nile. Afr Health Sci. 2004;**4**(2):83-93.

14. Bolton, EE. PTSD in Refugees. Washington, DC: US Department of Veterans Affairs; July 5, 2012, http://www.ncptsd.va.gov/facts/specific/fs\_refugees.html.

15. Barnes, DM. Mental health screening in a refugee population: a program report. J Immigr Health. 2001;**3**(3):141-149.

16. Carlson, EB, Rosser-Hogan, R. Cross-cultural response to trauma: a study of traumatic experiences and posttraumatic symptoms in Cambodian refugees. J Traum Stress. 1994;**7**(1):43-58.

17. Marshall, GN, Schell, TL, Elliott, MN, et al.. Mental health of Cambodian refugees 2 decades after resettlement in the United States. JAMA. 2005;**294**(5):571-579.

18. Gong-Guy, E, Cravens, RB, Patterson, TE. Clinical issues in mental health service delivery to refugees. Am Psychol. 1991;**46**(6):642-648.

19. Hsu, E, Davies, CA, Hansen, DJ. Understanding mental health needs of Southeast Asian refugees: historical, cultural, and contextual challenges. Clin Psychol Rev. 2004;**24**(2):193-213.

20. Wong, EC, Marshall, GN, Schell, TL, et al.. Barriers to mental health care utilization for U.S. Cambodian refugees. J Consult Clin Psychiatry. 2006;**74**(6):1116-1120.

21. Vanbreda, AD. Resilience Theory: A Literature Review. Pretoria, South Africa: South African Military Health Service; June 14, 2007. http://www.vanbreda.org/adrian/resilience.htm. Accessed August 5, 2009.

22. Connor, KM, Davidson, JR. Development of a new resilience scale: the Connor-Davidson resilience scale (CD-RISC). Depress Anxiety. 2003;**18**:76-82.

23. Connor, KM. Assessment of resilience in the aftermath of trauma. J Clin Psychiatry. 2006;**67**(suppl 2):46-49.

24. Polk, LV. Toward middle range theory of resilience. Adv Nur Sci. 1997;19(3):1-13.

25. Agaibi, CE, Wilson, JP. Trauma, PTSD and resilience: a review of the literature. Trauma Violence Abuse. 2005;**6**:195-216.

26. Rutter, M. Resilience, competence and coping. Child Abuse Neglect. 2007;31(3):205-209.

27. Campbell-Sills, L, Cohan, SL, Stein, MB. Relationship of resilience to personality, coping, and psychiatric symptoms in young adults. Behav Res Ther. 2006;**44**(4):585-599.

28. Hjemdal, O, Friborg, O, Stiles, TC, Rosenvinge, JH, Martinussen, M. Resilience predicting psychiatric symptoms: a prospective study of protective factors and their role in adjustment to stressful life events. Clin Psychol Psychiatry. 2006;**13**(3):194-201.

29. Deegan, PE. The importance of personal medicine: a qualitative study of resilience in people with psychiatric disorders. Scand J Public Health. 2005;**33**(suppl 66):29-35.

30. Walsh, F. The concept of family resilience: crisis and challenge. Fam Process. 1996;**35**:261-281.

31. McCubbin, HI, McCubbin, MA. Typologies of resilient families: emerging roles of social class and ethnicity. Fam Relat. 1998;**37**(3):247-254.

32. McCubbin, HI, Patterson, JM. The family stress process: the Double ABCX model of adjustment and adaptation. In: McCubbin HI, Sussman M, Patterson JM, eds. Social Stress and the Family: Advances in Family Stress Theory and Research. New York: Haworth Press; 1983:7-38.

33. Masten, AS, Obradović, J. Disaster preparation and recovery: lessons from research on resilience in human development. Ecol Soc. 2008;**13**(1):9.

34. Masten, AS, Shaffer, A. How families matter in child development: reflections from research on risk and resilience. In: Clarke-Stewart A, Dunn J, eds. Families Count: Effects on Child and Adolescent Development. Cambridge, UK: Cambridge University Press; 2006:5-25.

35. Walsh, F. A family resilience framework: innovative practice applications. Fam Relat. 2002;**51**(2):130-137.

36. Walsh, F. Family resilience: a framework for clinical practice. Fam Process. 2003;**42**(1):1-18.

37. Center for New North Carolinians. Montagnards. Greensboro, NC: Center for New North Carolinians; 2002.http://cnnc.uncg.edu/wp-content/uploads/2012/08/montagnards.pdf. Accessed November 21, 2008.

38. Center for New North Carolinians. Vietnamese. Greensboro, NC: Center for New North Carolinians; 2002.http://cnnc.uncg.edu/wp-content/uploads/2012/08/vietnamese.pdf. Accessed November 21, 2008.

 Office of Refugee Resettlement. Annual Office of Refugee Resettlement Reports to Congress FY 2007. Washington, DC: US Department of Health and Human Services.http://www.acf.hhs.gov/programs/orr/data/ORR\_2007\_report.pdf. Accessed April 20, 2010.

40. Office of Refugee Resettlement. Annual Office of Refugee Resettlement Reports to Congress FY 2006. Washington, DC: US Department of Health and Human Services.http://www.acf.hhs.gov/sites/default/files/orr/annual\_orr\_report\_to\_congress\_2006.pdf. Accessed August 31, 2009.

41. The Center for New North Carolinians. Immigrant Demographics of Guilford County. Greensboro, NC: University of North Carolina; 2008. http://cnnc.uncg.edu/immigrant-demographics-of-guilford-county/. Accessed February 21, 2008.

42. Folkman, S, Lazarus, RS, Dunkel-Schetter, C, et al.. Dynamics of a stressful encounter: cognitive appraisal, coping, and encounter outcomes. J Pers Soc Psychol. 1986;**50**(5):992-1003.

43. Bonanno, GA, Galea, S, Bucciarelli, A, et al.. What predicts psychological resilience after disaster? the role of demographics, resources, and life stress. J Consult Clin Psychiatry. 2007;**75**(5):671-682.

44. Charney, DS. Psychobiological mechanisms of resilience and vulnerability: implications for successful adaptation to extreme stress. Am J Psychiatry. 2004;**161**:195-216.

45. Clauss-Ehlers, CS. Sociocultural factors, resilience, and coping: support for a culturally sensitive measure of resilience. J Appl Dev Psychol. 2008;**29**(3):197-212.

46. Gillespie, BM, Chaboyer, W, Wallis, M. The influence of personal characteristics on the resilience of operating room nurses: a predictor study. Int J Nur Stud. 2007;**46**(7):968-976.

47. Creswell, JW. Qualitative Inquiry and Research Design: Choosing Among Five Approaches. Thousand Oaks, CA: Sage; 2007.

48. Nucifora, F, Langlieb, AM, Siegal, E, et al.. Building resistance, resilience, and recovery in the wake of school and workplace violence. Disaster Med Public Health Prep. 2007;1(1):S33-S37.

49. Davis, RE. The convergence of health and family in the Vietnamese culture. J Fam Nurs. 2003;6(2):136-156.