



**II CONGRESS ON MENTAL HEALTH:
MEETING THE NEEDS OF THE XXI CENTURY**

SYMPOSIUM

«RESILIENCE AND RECOVERY POST NATURAL/HUMAN-CAUSED DISASTER»

(Congress-Center, World Trade Center, Moscow, Russia)

**The Science of Disasters – Dr. Donald F. Nemeth
The Psychology of Disaster Recovery – Dr. Darlyne G. Nemeth (Chair)
The Educational/Behavioral Interventions - Dr. Judy Kuriansky**

THE SCIENCE OF DISASTERS IN OUR CHANGING CLIMATE

Dr. Donald F. Nemeth

Maintaining the mental health of individuals within a society facing the consequences of environmental change induced by natural or human causes (or a combination of both) has been a challenge throughout the centuries. It now has become increasingly acute with an ever increasing population facing the consequences of a warming planet. Having the knowledge of what to expect in specific environments and a strategy to minimize the effects of change greatly increase the ability to survive and cope with environmental change.

Living on a dynamic planet with specific zones more prone to catastrophic change such as volcanoes, major active faults and earthquakes, are regions where catastrophic change can be expected. The interval between events, however, may have been years or even hundreds of years in the past allowing complacency to replace preparedness and survival strategies.

Today, however, planet Earth is warming as evident by increased average global atmospheric temperature and oceanic warming. Increased atmospheric temperature allows the atmosphere to hold a greater amount of moisture, which fuels increased storm severity and the possibility of flooding. Other changes, such as shifting climatic belts, may cause increased precipitation in some areas and drought in others. This may have detrimental effects on agriculture and food production. In

underdeveloped area of the world this may lead to human conflict and further degrade the environment.

Within a warming planet, significant and far reaching consequences may be and are resulting from the warming of the Poles. Vast quantities of water are locked up in the Greenland and Antarctic ice capes. As these ice capes melt and recede, the potential for significant sea level rise can be expected endangering major coastal cities of the world. One third of the world's population lives within 100 km of the coast line. It is estimated that by 2100 sea level will rise 0.5 meter. With rising sea levels tidal action will also advance landward. If major storms occur at the time of high tide, destruction will be intensified. Cities such as New Orleans, United States; Shanghai, China; St. Petersburg, Russia; and many others are vulnerable to the detrimental effects of sea level rise. Another danger of a defrosting Arctic is the release of greenhouse gases locked up in Arctic permafrost soils, a vast storehouse of greenhouse gases. It has been found that within bubbles rising from Siberian lakes are methane gas (a powerful greenhouse gas) emanating from the defrosting permafrost. This addition of methane gas to the atmosphere further enhances global warming.

The biosphere, the zone in which we live, consist of land, water and the atmosphere. All three realms are interconnected. When one realm is altered, changes occur in the others. The biosphere is a complex system which must be maintained in a homeostatic manner if we are to survive. Maintaining the biosphere requires an educated understanding of both the physical science and psychological science of dealing with our world and our people.

THE PSYCHOLOGY OF DISASTER RECOVERY

Dr. Darlyne G. Nemeth

Whether devastated by hurricanes, earthquakes, wars, or other natural or human-caused disasters, people inevitably find a way to regroup and to rise to the challenge. Their robustness, strength, and ability to endure great tragedy and to survive great hardships are amazing examples of psychological resilience.

According to Cameron (2000), in the final analysis, one of the greatest impacts of environmental trauma is psychological (as cited in Nemeth et al., 2000). This concept is echoed by Onishi, Voitsekhovich and Zheleznyak (2007) in their book reflecting on the twentieth anniversary of the Chernobyl nuclear disaster.

After the basic safety needs of food and shelter have been restored, people must begin anew both physically and emotionally. This requires a psychological process called coping. Coping is the ability to contend with and overcome difficult circumstances quickly. It is the essence of psychological resilience.

In this part of the symposium, we address the importance of coping, resilience, perspective, and hope. We discuss common behavioral adaptations to trauma and change, and we highlight a six-stage recovery process, which we believe to be universal.

RESILIENCE

Zautra, Arewasikporn, and Davis (2010) define resilient adaptations three-dimensionally:

They refer to

- “1) the speed and thoroughness of stress recovery;
- 2) the capacity to sustain purpose under stress; and
- 3) the ability to learn and grow, psychologically from stressful experiences, attaining a greater maturity of mind.”

Most theorists agree that building and maintaining social relations is a key component to resilient adaptations.

Castro and Zautra advocate Social Intelligence Training, which includes four core principles: 1) Humanization, 2) Uniqueness, 3) Automaticity, and 4) Choice. This training highlights a) reflective awareness, b) capacity enhancement for meaningful healing and healthy social connections and c) fostering greater resilience when facing challenges and/or adversity (2016, p. 72). Active listening and acknowledging are key.

The following definitions of Resilience have been offered by major theorists:

- Steven Southwick – “Resilience more likely exists on a continuum that may be present to different degrees across multiple domains of life.
- George Bonanno: “Resilience as a stable trajectory of healthy functioning after an adverse event.”
- Rachel Yehuda: Resilience may co-occur with Posttraumatic Stress Disorder (PTSD). Moving forward in an insightful and integrated positive manner, “as a result of lessons learned from an adverse experience.”
- Ann Masten: Resilience is “the capacity of a dynamic system to adapt successfully to disturbances that threaten the viability, the function, or the development of that system.
- Catherine Panter-Brick: Resilience is a process to harness resources to sustain well-being.

They concluded that being able to use flexible coping strategies to address the specific challenges or traumatic events at hand, to adjust these strategies accordingly, and to alter their use as the situation further develops is the embodiment of true resilience. They also commented that resilience-enhancing interventions can be administered before, during, or after stressful/traumatic situations, but that preparative training is best.

I believe that the hallmark of resilient people is their ability to be firmly grounded in today, to benefit from yesterday, and to imagine themselves in tomorrow.

RECOVERY

The Recovery Process

There appears to be a universal six-stage process that follows environmental trauma. These six stages are: shock, survival mode, basic needs, awareness of loss, susceptibility to spin and fraud, and resolution.

1.Shock

Hurricane Katrina; the Japanese earthquake, tsunami, and Fukushima nuclear disaster; the BP Gulf oil spill; the Tuscaloosa, Alabama, and Joplin, Missouri, tornadoes. These environmental traumas were immediately followed by the **first psychological response: shock**. Shock is a reaction to a sudden physical or mental disturbance. This is a natural response to disruption—no matter how simple or horrific the disruption is.

We tend to view our lives as predictable, stable, and secure. We expect the sun to come up each day, to go about our daily routines, to watch the sun set, to go to bed each night, and to begin the process all over again the next day. We expect to go to

our workplaces and for our lives to continue “as is.” But these are merely expectations that we carry with us. Nothing is guaranteed—except for change. We are vulnerable in so many ways. For example, if we live near water, if we build in earthquake-prone areas, if we work in unstable drilling conditions, we are not safe from environmental trauma. Yet we expect the advantages to outweigh the risks. We are especially unprepared for change when it is more traumatic or intense than we had anticipated.

New Orleanians knew that Hurricane Katrina was coming, but they were not prepared for the human-induced problems that brought about the mass flooding and chaos after Katrina had passed.

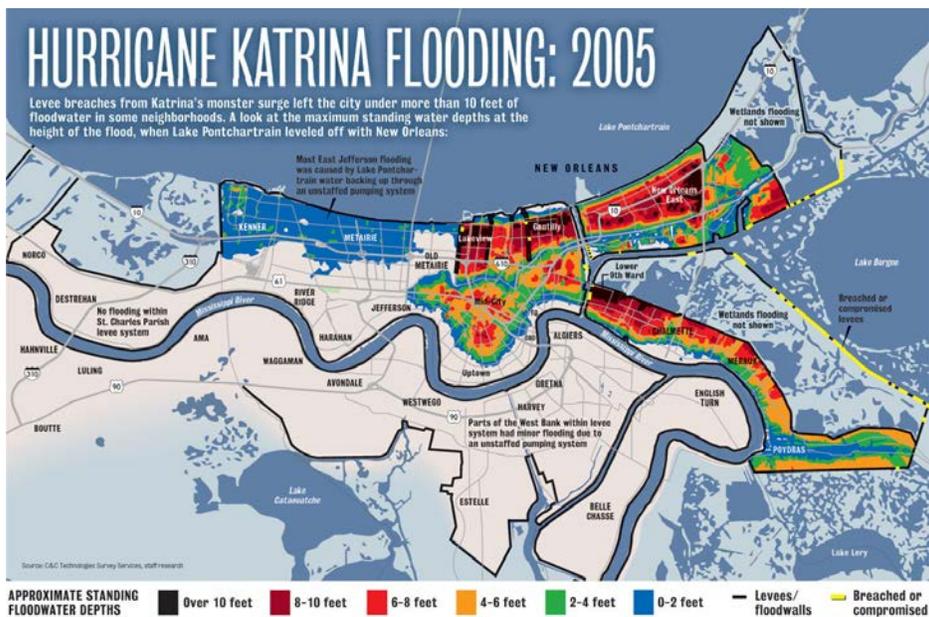


Figure 1. Areas affected by the 2005 Hurricane Katrina flooding.

For example, a well-known artist and friend was riding his bicycle to dialysis treatment when he found himself up to his neck in water. He was eventually rescued and taken to a shelter. He was then bussed to several different medical facilities and died along the way.

The Japanese did not expect a tsunami to extensively damage three nuclear power plants.

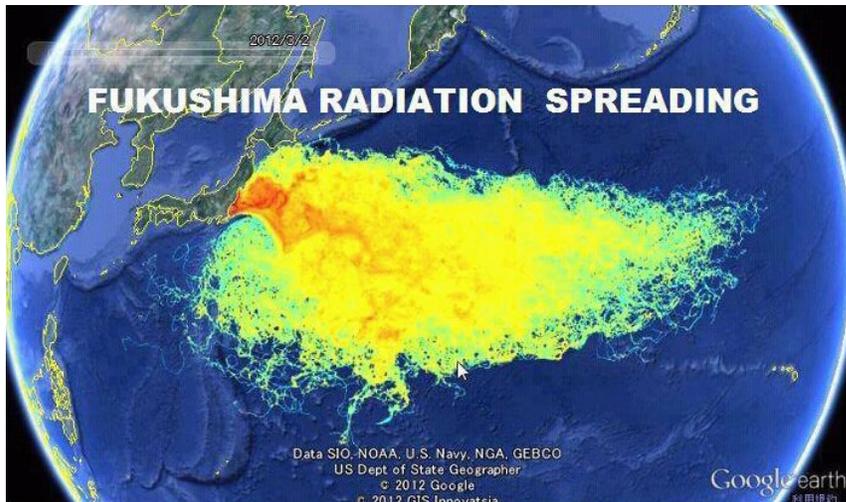


Figure 2. Map of Fukushima Radiation Spreading

In Chernobyl, people had no warning of the disaster to come. Liakhovich (2006) stated, “There was absolutely no warning of the imminent danger. Millions of people in Kiev, and throughout Ukraine and Belarus continued with their daily lives without the slightest notion of spreading radiation”.



Figure 3. Map of Chernobyl Radiation Spreading

Recent tornadoes in the United States did not allow residents enough time to prepare. Some found safety in walk-in refrigerators, basements, and bathrooms. Others, who did not have safe houses, found no safety at all. In Louisiana, residents were given about 20 minutes’ notice. One state governor noted that, “The storm was so loud you probably couldn’t hear the sirens going off”, so the warnings were ineffective.

All of these people lived in danger zones, yet they expected that nothing would happen. They lived under the illusion or expectation of safety. This must change. People need to be educated about how to cope with disaster.

In all of these situations, people, property, and entire communities vanished in minutes. For those who survived, there was shock. Dr. Bar-Levav, an eminent psychiatrist, noted that sudden eruptions and storms of powerful emotions cause people to lose their bearing. For example, in the aftermath of the terrorist attacks of the human-induced 9/11 disaster, in New York City, many people walked around the streets in a zombie-like state—dazed, disoriented, disheveled, and distraught. For those who watched from afar, via television or the Internet, there was disbelief. People were stunned. How could this happen? No one was prepared.

When people are in shock, they act without thinking. Frequently they perform heroic feats at their own peril. These heroic actions, however, may have unintended consequences such as posttraumatic stress disorder and/or long-term health ailments that may cause cancer, stroke, asthma, sleep apnea, neurological problems, cognitive difficulty, and respiratory disease. In the rush to locate loved ones and to help others, many expose themselves to life-threatening air, contaminated water, radiation, and rubble. Often, the effects of this exposure do not show up for years. And when people do get sick, it is not uncommon for authority figures to deny and/or disavow their illnesses.

2. Survival Mode

In a state of panic, most people do whatever it takes to survive. Walking miles without shoes, as so many did after Hurricane Katrina, is just one example. Many came for medical care with little skin left on the bottoms of their feet. Yet, they were alive. They had an opportunity to plan for tomorrow.

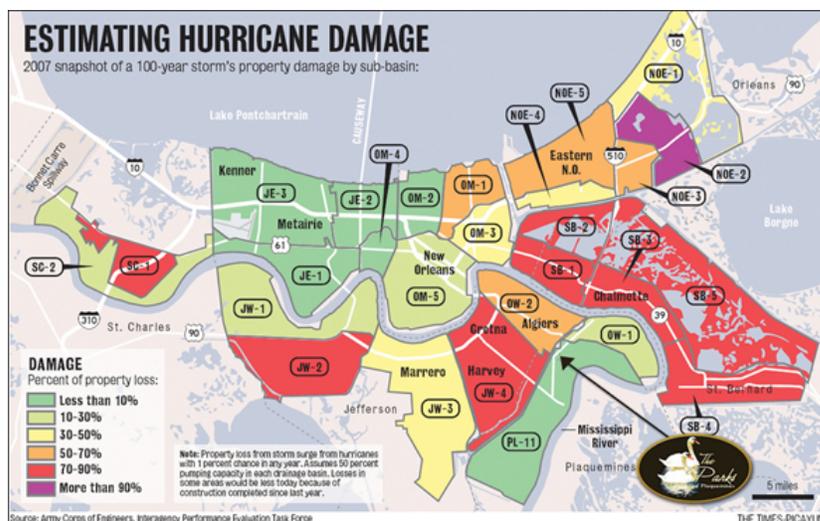


Figure 4. Map of damage caused by Hurricane Katrina.

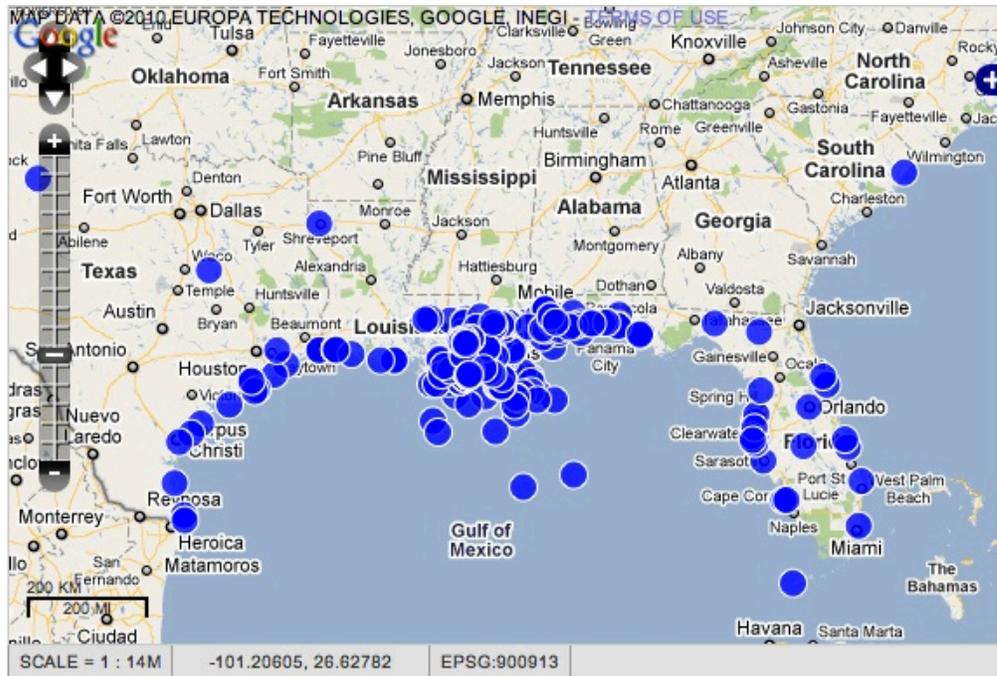


Figure 5. Areas affected by the BP Oil Spill.

For those who died in the April 20, 2010, BP oil explosion in the Gulf Coast waters, there was no warning, no opportunity to survive. This human-induced environmental trauma not only took the lives of 11 people, but it took the livelihoods of thousands of families dependent on the Gulf Coast of the United States for their income. It also severely impacted—and in some instances destroyed—the normal functioning of ecosystems in some very fragile areas. This trauma was totally preventable. For those who died in the explosion, their families do not even have their bodies to bury. What of their losses! **Closure is a basic need for all survivors of trauma.** Otherwise, either directly or indirectly, survivors tend to become victims.

In survivor mode, Dr. Guillermo Garrido, the World Council for Psychotherapy's (WCP's) Co-Secretary General, identified five types of victims: (1) those who are overwhelmed and in shock due to the emotional impact of the trauma; (2) those who tell their horrifying story while displaying no emotion; (3) those who feel guilty for having survived while others died or were injured; (4) those who believe that they (a) made the disaster worse somehow, (b) could have done something to help, (c) could have prevented it from happening, or (d) could have saved someone; and (5) those who were victims of group violence.

According to Dr. Garrido, during his 2007 presentation at the United Nations, in order to address the plight of survivors, it is necessary to understand which of the

aforementioned emotional characteristics they display. By understanding how survivors are coping, responders can better know how to assist them. Thus, **effective intervention can preclude victimization and/or depression.** Ineffective intervention, can increase physical and emotional pain, and forestall recovery. Frequently, simply allowing victims to talk about their story or addressing their survivors' guilt can empower them to become active survivors, rather than passive victims, of their experiences. In either case, the chaos that breeds victimization must be ameliorated as quickly as possible. When basic needs are re-established, victimization can be greatly reduced via this process, and people can begin to find a way to cope.

3. Assessment of Basic Needs

Typically, first or second responders assess basic needs. Initially, these needs include food, clean water, shelter, and safety. *Local people do this best.* They understand the culture of the people, and they know how to assess their basic needs. Yet local people are often trumped by outside organizations that have little understanding of the culture. In the aftermath of Hurricane Katrina, local faith-based groups were extremely effective. In contrast, national organizations were not.

Safety is one of the most difficult conditions to re-establish. People all too quickly learned what it was like to be without real money. One year after Hurricane Katrina, during an Anniversary Workshop Intervention Program, one man spoke of what it was like to be without cash money. Checks were useless. So were credit cards. Another man swore that, in the future, he would always have enough money available for food and lodging.

Lawlessness and looting prevailed during the aftermath of Hurricane Katrina. Many people were harmed, and violent crimes were committed. No meaningful plans to address victims' basic needs had been put in place.

Postdisaster problems exist worldwide. For example, the Fukushima accident has turned into a national disgrace for Japan. **Thus, environmental trauma can be compounded by humans' poorly thought out initiatives and inept responses.** For example, the tsunami and hurricane in Japan were unpreventable, but the conditions of the Fukushima Daiichi Nuclear Power Plant, similar to those inadequate conditions of the canals and levees in New Orleans, Louisiana, were another matter—they were preventable. **Coping becomes more difficult when natural trauma is compounded by humans' shortsighted actions.** By not protecting the natural infrastructure, which shelters people throughout the world, the aftermath of hurricanes, earthquakes, tsunamis, and other natural disasters becomes even more traumatic.

Dr. Garrido, who is a Venezuelan psychiatrist now residing in Panama, presented at our 2007 symposium at the United Nations Department of Public Information Non-Governmental Organizations' (UN/DPI/NGO) Fall Meeting in New York City. This symposium, which I organized on behalf of WCP, was one of the first major presentations at the United Nations to address the effects of environmental trauma on human suffering. As one of the goals of the WCP is to reduce human suffering, this presentation was considered to be a milestone for mental health and well-being. In Dr. Garrido's address titled "Trauma Resolution and Life Style Change," he pointed out that the severity of a great natural disaster lies in its collective tragedy. He noted that it is society's responsibility to create order; reduce chaos; identify, select, and organize available resources; and manage the crisis. Dr. Garrido recommended that people's physical needs must be addressed first. These included: identifying medical problems, providing needed medications, regulating the person's sleep cycle, and providing food that is consistent with the person's medical status (e.g., diabetics require special diets and, possibly, dialysis).

To ameliorate the immediate impact of trauma, Dr. Garrido recommended that the following interventions be implemented as quickly as possible: calm people down, soothe their fears, let them talk, keep them safe and provide food and shelter. The realistic limitations and availabilities of services in crisis situations must also be discussed. For example, we must not promise what we cannot deliver.

4. Awareness of Loss

After passing through the shock of a situation, finding a way to survive, and re-establishing their basic needs, people must become aware of their losses. This phase involves surveying the damage. This typically begins when people endeavor to find their loved ones, to locate their property and pets, and to gain perspective. Then, when a major authority figure comes to acknowledge their pain by his or her presence, people can begin to settle down. For example, when Emperor Akhito of Japan came to address the prefecture of Fukushima and the neighboring areas, people feel reassured. **This settling experience** allows people to face their personal losses, including the loss of people, pets, property, community, and even perhaps culture.

Becoming aware of the potential loss of culture is frightening. Why is it that many New Orleanians are trying so desperately to rebuild in the Lower Ninth Ward, which was devastated by flooding in the aftermath of Hurricane Katrina? Many outsiders would argue that this low-lying area should never have been built on to begin with; therefore, why rebuild it? But, it is not just about a geographic location or the loss of property; it is about the loss of an entire culture. **Culture provides stability.** It symbolizes the past, anchors us to the present, and helps us to prepare for the

future. It is the legacy upon which our hopes and dreams are founded. We can survive the loss of loved ones, for we know how to grieve. We can survive the loss of property, for we know how to rebuild. But we cannot emotionally survive the loss of our culture. History is replete with examples of people being transplanted out of their culture. People who are forcibly displaced usually do not fare well. Often, they perish. People need roots; they need their culture; they need their foundation for living.

5. Susceptibility to Spin and Fraud

Just when people need to rebuild, to repackage themselves, and to reshape their lives and their culture, spin and fraud come knocking on the door, trying to take advantage of people's vulnerabilities, or trying to lie and steal. There are usually perpetrators of spin and fraud on the heels of any environmental disaster. People are then traumatized over and over again.

It appears that some lessons, however, were learned from Hurricane Katrina. But the perpetrators of spin and fraud are ever-present post disaster, and they greatly impede the recovery process for society's most vulnerable individuals.

Who is most vulnerable to such spin and fraud? The most vulnerable are those who have been in the closest proximity to the disaster and who, therefore, have had the greatest exposure. They typically have a lower socioeconomic status and poor coping skills. They may have had a previous history of mental illness and a poor social support system. They may have experienced loss of family members or pets in the disaster. They may have had to relocate. They may have found themselves linguistically (e.g., now interacting with people who speak a different language) or socially isolated. **The most vulnerable individuals have the greatest difficulty achieving resolution.**

6. Resolution

Resolution can take a long time—from many months to many years. The beginning of the resolution phase is typically marked by an anniversary reaction. An anniversary reaction is typically defined as something that occurs on or around the date of a past traumatic event and that involves reactions to an emotionally charged episode that holds tremendous significance for that individual or group. When the initial event is experienced as traumatic, individuals may tend to become sensitized to re-experience those symptoms under reminiscent circumstances.

Anniversary symptoms typically include constant worry, irritability, tension, headaches, restlessness, sleep disturbance, sadness, and fatigue. Intrusive

memories, emotional numbness, and behavioral reactivity may also accompany reminders of the event.

COPING

In order to develop resilience, one must mindfully and actively engage in the following coping strategies. First, it is important that individuals learn how to effectively recognize and face their feelings and share their experiences with others. Second, individuals must learn to acknowledge and affirm both their own feelings and experiences as well as those of others. Only after completion of the first two steps can people begin the third step – identifying and solving problems. Next, individuals must engage in a process of ongoing reassessment and reprioritization of needs to avoid repeating unhelpful aspects and/or mistakes of the past. Lastly, individuals must implement the things they have learned from the previous four steps. This is arguably the most important step, as **knowledge without intervention is useless**. Therefore, educating others as to how to cope with trauma is a major mental health responsibility.

First Coping Step: Facing Feelings and Sharing Experiences

This first coping step should not be an in-depth process. Rather, the purpose of this sharing experience is to assist people in calming down and in learning that they are not alone. It also allows others to bear witness to their tragedies.

Second Coping Step: Acknowledgment and Affirmation

Acknowledgment is taking notice of or recognizing something or someone as genuine or valid, and affirmation is confirming or validating something or someone. To acknowledge the reality of people's experiences is freeing. It helps to melt away denial. Having others acknowledge and understand our pain or loss allows us to admit what we have experienced. As Dr. Bar-Levav points out, understanding can lessen that small portion of our anxiety that results from not knowing. We can then move out of denial and experience the support of others. When unburdened by social support, people can make the decision to move forward. Without the support of others, people lose hope; **yet hope is essential for rebuilding**. Without hope, people become victims. Tragedy itself does not victimize people; rather, falling into a state of hopelessness, despair, and/or depression victimizes people. Depression is not inevitable. Although many people fall into a state of depression after environmental trauma, depression can be dissipated by affirmation. When we

acknowledge **how** people are feeling and affirm, or give legitimacy, to **what** they are feeling, people have permission (yours and theirs) to move forward.

Third Coping Step: Solving Problems

Once people have been able to face their tragic losses and pain, and acknowledge their survivor's guilt, they are more emotionally available to think, to solve problems, and to create a plan for moving forward. Restoration of the environment that was once known and cherished may not be ideal. It may not even be appropriate or feasible. Frequently, people want to rebuild exactly what was lost. But rebuilding in the same physical environment is not always a resilient decision. For example, in the United Kingdom, long-range environmental destruction decisions have been made regarding which historic properties will be maintained and restored and which properties will be let go. These decisions were made at several levels, including environmental issues, available financial resources, and the cultural importance of the structure. In the aftermath of Hurricane Katrina, many continue to wrestle with similar issues. Rethinking priorities and restructuring needs often serve people better than merely rebuilding what was.

Fourth Coping Step: Reassessing and Reprioritizing Needs

Learning from experiences, rather than merely repeating them, is a crucial coping strategy. We must remember the difference between doing what is wanted versus doing what is needed. This requires benefiting from history, but also being willing to change. Often, emotional attachments to the past prevent logical planning for the future. It is not merely a matter of rebuilding a physical or cultural environment. Rather, it is a matter of carefully analyzing the situation, accepting what needs to be done, and reshaping the cultural environment so that people can flourish.

Fifth Coping Step: Implementation

This step involves doing what is needed even though it may not be what is wanted. It is about working toward truth. For example, some Alaskan Eskimo villages are relocating out of necessity. This is being done because of climate change, not because of the villagers' desire to relocate. Louisiana's coastal dwellers have experienced similar phenomena. People must work together in a prosocial manner to achieve their goals. Individual efforts must lead to collective wisdom.

SUMMARY

Successful coping begins with facing one's feelings and experiences, and moving out of denial. This is facilitated by the acknowledgment and affirmation of others. With affirmation, depression can be dissipated and people can begin solving problems. When creative thinking and planning begin, people must focus on their present and future needs. Often, this process is thwarted when people focus on the past and resist change. Lastly, doing what is needed at both an individual level and a community level is always a challenge. But people's resilience is, in the final analysis, determined by their collective wisdom. Knowledge is power. Therefore, building and maintaining our social relations pre-trauma and rebuilding them post-trauma is crucial in promoting knowledge and wisdom. Thus, Educational and Behavioral Interventions are needed pre and post environmental trauma.

References

- (n.d.). Retrieved December 29, 2017, from <https://i.pinimg.com/originals/42/c4/72/42c4726b4cebe8d6d165ff2e40e3c9b8.jpg>
- (n.d.). Retrieved December 29, 2017, from <http://cdns.yournewswire.com/wp-content/uploads/2015/06/Fukushima-radiation-sea-water2.jpg>
- (n.d.). Retrieved December 29, 2017, from http://www.nola.com/hurricane/index.ssf/2013/08/hurricane_katrina_floodwater_d.html
- (n.d.). Retrieved December 29, 2017, from <http://www.theparkslifestyle.com/wp-content/uploads/Hurricane-Estimate-Damage-Map.pdf>
- (n.d.). Retrieved December 29, 2017, from http://www.trsfoundation.org/blog/wp-content/uploads/2010/06/6_10_oil_spill_affected_areas.jpg
- Bar-Levav, R. (1988). *Thinking in the shadow of feelings: A new understanding of the hidden forces that shape individuals and societies*. New York: Simon & Schuster.
- Castro, S. A. & Zautra, A. J. (2016). Humanization of social relations: Nourishing health and resilience through greater humanity. *Journal of Theoretical and Philosophical Psychology*, 36(2), 64-80. doi:<http://dx.doi.org.ezproxylcal.library.nova.edu/10.1037/teo0000040>
- Garrido, G. (2007, September). *Trauma resolution and lifestyle change*. Paper presented at the 60th Annual United Nations DPI/NGO Conference Midday Workshops, New York.
- Liakhovich, O. (2006). *After the blaze: Chernobyl 20 years on*. Retrieved July 23, 2011, from <http://sites.google.com/site/liakhovich/Index/chernobyl>.
- Nemeth, D.G., Cameron, C., Creveling, C.C., Dreger, R.M., & Schexnayder, M.M. (2000, August). *Outcome of millennium 2000: Historical, technical, psychological, and research-based perspectives*. Paper presented at the 108th Annual Convention of the American Psychological Association, Washington, D.C.
- Nemeth, D. G., Hamilton, R., & Kuriansky, J. (2012). *Living in an environmentally traumatized world: healing ourselves and our planet*. Santa Barbara: Praeger.
- Nemeth, D.G., & Olivier, T.W. (2017) *Innovative approaches to individual and community resilience: from theory to practice*. London: Academic Press, an imprint of Elsevier.
- Onishi, Y., Voitsekhovich, O. V., & Zheleznyak, M. J. (2007). *Chernobyl - What Have we Learned?: The Successes and Failures to Mitigate Water Contamination Over 20 Years*. Dordrecht: Springer.
- Zautra, A. J., Arewasikporn, A., & Davis, M. C. (2010). Resilience: Promoting well-being through recovery, sustainability, and growth. *Research in Human Development*, 7, 221-238. <http://dx.doi.org/10.1080/15427609.2010.504431>

THE EDUCATIONAL/BEHAVIORAL INTERVENTIONS

Dr. Judy Kuriansky

In light of the pervasive climate changes and natural disasters prevalent worldwide in these current times, effective means of implementation are essential in order to facilitate resilience and recovery of populations in all regions. These educational and behavioral interventions will be presented in this part of the symposium. All the trainings and workshops involve activities that are immediately applicable to community populations, and are educational as well as intended to facilitate constructive behaviors conducive to increase strengths, self-esteem and empowerment.

The incidences of natural disasters have been prevalent in present times have generated increased interest in the impact and required response to these tragic phenomena. Recent events include those in the United States and the Caribbean Islands (Hurricanes Katrina, Harvey, Maria, Irma, and Superstorm Sandy), Haiti (the earthquake in 2010 and Hurricane Matthew in 2016), and Asia and Japan (the tsunamis of 2004 and 2011). All of these have claimed hundreds of thousands of lives and caused millions of dollars in damage and destruction to business, livelihood, infrastructure, and social cohesion.

Epidemics have also plagued the world population. The Ebola epidemic, hitting hardest in West African countries of Sierra Leone, Liberia, and Guinea, but also with some scattered cases in the Western world, caused over 11,000 deaths with over 28,000 cases (WHO, 2016a). With regard to the devastating outbreak of the Zika virus, causing birth defects, 61 countries and territories have reported continuing mosquito-borne transmission (WHO, 2016b). Other lesser widespread epidemics in recent times include the Chikungunya virus disease, H1N1 virus, West Nile Virus, and Middle East Respiratory Syndrome coronavirus (MERS-CoV). The Severe Acute Respiratory Syndrome (SARS) devastated parts of China and Toronto and other regions, and the HIV/AIDS virus notoriously claimed thousands of lives until medications brought it under control only in recent years.

The prevalence of such disasters has escalated the need for approaches to respond to such events, especially in low-resource nations with inadequate health infrastructure. Additionally, certain issues have become salient in planning such responses, both to be adequately responsive and to be sustainable.

One such response is the application of a train-the-trainers (TTT) model, whereby experts enlist a cohort of people who can be trained in various supportive techniques, who can then administer them to others (e.g., a group of community people) in order continue the perpetuation and cascading of the helpful

interventions.

TTT programs have been implemented globally in post-disaster contexts like the 2004 tsunami in Asia and the 2010 earthquake in Haiti (Becker, 2006, 2007; James & Noel, 2013; James et al., 2012; McCabe et al., 2012; Kuriansky, Zinsou, Arunagiri, et al., 2015). These programs have similarly been implemented to address public health issues created by the spread of communicable diseases, namely HIV/AIDS (Booth-Kewley et al., 2001; Jones, Weiss, & Chitalu, 2015; Tobias et al., 2012; Weiss et al., 2014; Williams et al., 2014; Yarber et al., 2015; Yu et al., 2014). While limited, the body of research evaluating such community-based psychosocial support interventions collectively demonstrates their efficacy, sustainability, and scalability in benefiting both recipients of support and helpers themselves. Indeed, not only are trained lay mental health workers empowered in their ability to address the needs of their community through effective psychosocial care techniques, but they also experience healing indirectly through their interventions.

When applied in a large community population, this stepped training model is most useful and effective when it includes techniques that are easily learned and easily applied, with cultural acceptability (Kuriansky, Polizer, & Zinsou, 2016; Kuriansky, Zinsou, Arunagiri, et al., 2015)

This part of the symposium describes the TTT model applied after natural disasters and also an epidemic, and some allied trainings. They include workshops and trainings in Haiti, Japan, Louisiana, the USA and West Africa, following the model of as part of the (1) Global Kids Project; and (2) Resilience and Emotional Training Workshops.

FOCUS ON CHILDREN

Many of the interventions described in this symposium focus on helping children. Interest in the resilience of children is considerable (Goldstein & Brooks, 2005; Masten, 2011; Wir, 2017). Since the trainings addressed in this chapter are meant to ultimately benefit children, it is relevant to emphasize the importance of interventions for children in natural disasters and epidemics. Children are at risk and especially suffer when it comes to such traumatic events affecting a community. The importance of providing psychosocial assistance to children to aid in their recovery from traumas of wide-ranging nature has been well established (Qian, Gao, Wu, et al., 2011; Silverman & La Greca, 2002). Reports have documented the

necessity to address both immediate and long-term effects, given the long-lasting impact of traumas on children (Liu, Wang, Shi, et al., 2011).

While less research has been done on the effects on children of contagious diseases compared to the amount of research available about natural or large-scale human-made disasters, common aftereffects are apparent in the two situations from other studies and from the chapter authors' vast experiences in both circumstances (Thienkrua, Cardozo, Chakkraband, et al., 2006; Koller, Nicholas, Goldie, et al., 2004). Traditionally, interventions for children have centered on simple supervised play experiences in child-friendly spaces (UNICEF, n.d.; World Vision, 2016).

The model provided in the TTT programs is consistent with the basic emotional needs of children in crisis situations, ranging from safety to security. While children's needs are widely recognized, much research still needs to be done to establish best practices/gold standards for intervention with children in such emergencies.

The specific exercises, and advice for helping children recover from disaster, have been developed and applied over many years and in varied circumstances and cultures and adapted for specific situations and cultural contexts. These include interventions after various natural disasters as well as those from the Global Kids Connect Project (GKCP) designed by this presenter in this symposium, that have been used to train trainers and been applied with youth post-disaster in Haiti, over many years, as well as in China, Japan, and Sri Lanka, and with youth in poverty conditions in African countries (Jean-Charles, 2011a, 2011b; Kuriansky, 2008, 2010a, 2010b, 2010c, 2011a, 2012b, 2013a, 2013b, 2013c, 2013d; Kuriansky & Berry, 2011a, 2011b; Kuriansky & Jean-Charles, 2012; Kuriansky & Nemeth, 2013; Kuriansky, Wu, Bao, et al., 2015; Kuriansky, Zinsou, & Arunagiri, et al., 2015). It also includes exercises applied by IsraAID (2014) in its many interventions worldwide. The exercises in the model are further consistent with the approach to psychosocial support identified by UNICEF (UNICEF & UNISDR, 2011) and the three approaches of psychological first aid in response to Ebola-affected communities, that is, Listen, Look, and Link (Ministry of Social Welfare, Gender and Children's Affairs, 2014; Mohdin, 2014; WHO, 2014).

The resulting training and workshop is intended to be implemented in a group setting with community individuals as trainees, who are identified as potential leaders motivated and capable to implement the workshop for children, even if they have minimal training in psychological techniques. It is further meant to be consistent with the principles of (1) psychosocial support (UNICEF, 2013, n.d.; WHO,

2012), (2) psychological first aid, as identified in the three Ls (Look, Listen and Link) (WHO, 2014), and (3) layers in the intervention pyramid identified by the Inter-Agency Standing Committee (IASC) guidelines for mental health and psychosocial support in emergency settings (IASC Working Group, 2007; Kuriansky, 2011b), for example layer i., basic support and security and layer ii., community and family support, for a wide variety of community groups (not to either stimulate or treat serious psychological problems). As such, the exercises are meant for empowerment and strengths-building.

The intervention protocol has been implemented widely as part of the GKCP, an international project whereby youth from different countries who have been impacted by trauma are connected to each other (Kuriansky, 2010a, 2010c, 2010d, 2012b, 2012c, 2012d; UNISDR, 2015b). Benefits include involving local people to help; following a step model, being culturally sensitive, working in the local language, and being sustainable (IASC Working Group, 2007; Kuriansky, 2010a, 2010c, 2010d; Jean-Charles, 2011a, 2011b; Kuriansky & Jean-Charles, 2012; Kuriansky, Lytle, & Chiu, 2011). As the aim is to provide support, rather than therapy, trainees do not need extensive experience and are given encouragement and reassurance of their ability to offer support.

VALUE OF HELPING AND VOLUNTEERING

Enlisting helpers, particularly who are volunteers, is essential in many crises, especially in low-resource developing countries—as is the case in Haiti and Sierra Leone. While it is increasingly recognized that psychological first aid and psychosocial support are essential after a disaster, capacity to achieve this is often limited. The model of enlisting community volunteers described in this project offers a solution to this problem. Research has shown the positive psychological and physical effects on individuals from volunteering and altruistic behavior (Brown, Nesse, Vinokur, & Smith, 2003; Morrow-Howell, Hinterlong, Rozario, & Tang, 2003; Musick, Herzog, & House, 1999; Schwartz, Keyl, Marcum, & Bode, 2009; Schwartz, Meisenhelder, Ma, & Reed, 2003; Smith, 1981; Willigen, 2000; Young & Glasgow, 1998). Psychological benefits include that helping others can lower one's own depressive symptoms, enhance self-worth, and induce greater calmness (Krause, Herzog, & Baker, 1992; Luks, 1988).

TWO INSTRUMENTS THAT UNDERSCORE THE IMPORTANCE OF THIS APPROACH for the Mental Health Community

The TTT projects and evaluations are relevant in the context of two global instruments that have recently been adopted by the governments of the world. Both

instruments support the value of these trainings targeted at improving the mental health and well-being of affected populations.

The first is the United Nations 2030 Agenda for Sustainable Development that was agreed upon by the member governments of the United Nations (UN) in 2015 to set the global agenda for the years 2015–2030 (UNDESA, n.d., 2015). This instrument includes—for the first time in such a global agreement—the importance of mental health and well-being, which appears in the text in three places. Paragraph 7 of the Preamble envisions a world “where physical, mental, and social well-being are assured.” The title of Sustainable Development Goal (SDG) 3 states: “Ensure healthy lives and promote well-being for all,” and Target 3.4 states “By 2030, ... promote mental health and well-being.” Additionally, paragraph 26 of the introduction states: “To promote physical and mental health and well-being, and to extend life expectancy for all, we must achieve universal health coverage and access to quality health care.” The first author was instrumental in insuring this inclusion, in collaboration with the Ambassador of Palau to the UN (Kuriansky, 2016).

The second is the Sendai Framework for Disaster Risk Reduction, agreed to by governments at the Third World Conference for Disaster Risk Reduction in Sendai Japan in May 2015, which outlines agreements made by the world governments regarding disaster risk reduction (UNISDR, 2015a). Paragraph 33 (o) states the commitment: “To enhance recovery schemes to provide psychosocial support and mental health services for all people in need.”

The interventions using the TTT model described here represent a means of implementation and monitoring of the above commitments. The achievement of sustainable development after a natural disaster or an epidemic requires ensuring and reinforcing the psychosocial resilience and self-efficacy of citizens and the community.

OUTCOMES for the Mental Health Community

The two international instruments described above (the UN Agenda 2030 and the Sendai Framework for Disaster Risk Reduction) are valuable in urging attention by government and nongovernment entities to psychosocial issues and psychosocial resilience-building after both epidemics and natural disasters. In the recent review of SDG 3 by governments in July 2017, some voluntary reviews of governments did mention the importance of psychosocial issues (Otto, Kuriansky, & Otto, 2017; UNDESA, n.d.). While this is somewhat encouraging, much more awareness and advocacy with governments need to be done to heighten their attention to this issue.

The results of the presenter's studies show the impact of the training on skills building, and for diverse beneficiaries; therefore, the TTT approach and specific activities show promise for contributing to the achievement of Goal 4 of the SDGs, namely education for all. This is further supported by the fact that a version of the TTT, as noted above, was applied to an academic training setting (in St. Martin), with teachers and other education staff, who reported that they could see the usefulness of adapting the program to their context. Further, the community cohesion activities (e.g., creating a web with yarn) in the program elicit messages about acceptance and respect for differences among people, that relates to SDG 16 about peaceful societies. Further support for this point is that comments from participants about this activity include, as in the setting mentioned above, variations of the observations that "We are all different sizes, colors and shapes, but we are connected," "We are all together," "We must work together and accept each other as we are," and "We are one world."

Further, while the word "resilience" has become more commonplace in discussions and documents at the UN, this word usually refers to structural resilience, (e.g., distance of buildings to waterfronts and use of disaster-proof materials). Given the extent of human suffering and long-term sequelae compared to the availability and access to mental health support, more advocacy and action must be done to close this gap and highlight the importance of "psychosocial resilience." The first author has done a considerable amount of this advocacy, for example starting from UN Disaster Risk Reduction meetings in 2007 and including at the Third UN World Conference on Disaster Risk Reduction in Sendai Japan in 2014, and with the second author at the World Conference on Disaster Risk Reduction in Cancún, Mexico in 2016. A major lesson long-term and collaborative effort among many stakeholders is necessary.

Based on the above reports, psychosocial support can valuably be provided in the cases of natural disasters or epidemics through TTT programs that offer capacity building especially in low-resource communities and countries. A registry of potential volunteers and community leaders should be kept and adequate funding provided as part of disaster preparedness, such as proposed by Dr. Darlyne Nemeth, Dr. Kelly Ray and this presenter, at many world conferences such as those by the World Council for Psychotherapy. Coordination should be maintained with community resources like schools, hospitals, community centers, and religious institutions, especially in cultures that are religiously oriented.

The present report underscores the importance of community connection in resilience and recovery when facing natural disasters or an epidemic. A resilient and empowered community is capable of collective PTG (Kuriansky, 2012b) in that large-scale destruction in a tragedy or health crisis reminds citizens of the universality of

pain, suffering, and grief, and offers individuals, a community, and a country, a chance to create a new foundation, a stronger commitment to diversity, more connection among the citizens, better health practices, and more awareness of interdependence that redefines social structures, government policies, and how resources are to be used and shared.

This presentation reinforces the authors' position that practical programs, enlightened policies, and a paradigm shift must include psychosocial resilience, which will facilitate the development of sustainable psychosocial resilience and well-being for children and adult survivors of disaster and epidemics who are served, and who can also provide valuable human capital in local communities to provide needed support (Kuriansky, Zinsou, Arunagiri, et al., 2015).

Recommendations for disaster relief policy in the case of natural disasters can similarly be applied in response to epidemics. These include the following: psychosocial relief and psychological first aid should be an integral part of immediate disaster relief operations and integrated into primary health care; interventions specifically tailored to children—who are especially at risk—should be made widely available; plans, programs, and policies need to take a long-term view and to ensure such psychosocial help continues years after a disaster; and research to establish best practices should be conducted.

Advocacy about psychosocial resilience by this presenter has escalated given the tragic hurricanes in the Caribbean region. At a UN ECOSOC meeting in October 2017, and at a 2-day donor conference in November, 2017, about the aftermath, governments' statements focused on funding and "building back better" but not on emotional issues, although one-on-one discussions with the first author acknowledged this importance, including for long-term recovery. Also a few presenters did mention the importance of psychological help, and also "hope." Also, at an event about the disasters convened by the NGO Committee on Sustainable Development-NY, three UN Ambassadors on the panel from Missions in the region (Trinidad and Tobago, Dominica, and Antigua and Barbuda) appreciated the first author's presentation on the psychosocial impact of the disasters, and further discussions are ongoing.

Clearly psycho-educational efforts, as well as very concrete means of implementation for empowerment and resilience, as well as recovery, in the face of extreme climate disasters, is essential and also possible. Recognition of these projects is important; one opportunity for this is at the second Voluntary National Reviews at the United Nations in July 2018. Good news for the promotion of psychosocial resilience is that the Friends of Mental Health Group is being revived, led by this presenter on behalf of civil society and the governments of Canada,

Belgium and Bahrain. Many other missions are joining, including Trinidad and Tobago and Uganda, and others that represent the diverse regions of the world.

(If time permits, videos will be shown and audience participation will be encouraged.)

SYMPOSIUM CONCLUSIONS

Resilience is *the* mental health requirement of our time. We must honor our past, revel in our present, and look forward to our future. We must be fully present, even at times when it is difficult or uncomfortable. We must see what must be seen. We must know what must be known. We must do what must be done. We must resiliently face the requirements of living in and taking care of our ever-changing world.

Nothing stays the same, even though we would like for our world, our families, and, perhaps, ourselves, to remain so. All things and all people evolve. As resilient people, we must equip ourselves with knowledge. We must understand the physical science, the psychological science, and the behavioral interventions that are required to prepare ourselves and our communities to cope with whatever lies ahead. Mental Health Professionals can play a key role in this educational process.

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