

# Individual and Community Psychosocial Support in the Immediate Response and Early Recovery of Hurricane Maria

Joseph O. Prewitt Diaz\*

Center for Psychosocial Support Solutions (CPSS), Alexandria, VA, USA

**ABSTRACT:** *Two hurricanes over a period of less than one month in Puerto Rico have caused catastrophic destruction in terms of infrastructure and the natural environment. After ninety days of field work, this paper provides a follow-up to the Disaster Mental Health and psychosocial support activities that occurred between the immediate response and three months of recovery in communities affected by Hurricane Maria. Community-based psychosocial support during the immediate response and early recovery interventions are discussed. The summary discusses criteria that were used to make these interventions a part of a community-based psychosocial support program.*

**KEYWORDS:** *Community, Psychosocial support, Hurricane Maria, Puerto Rico*

## INTRODUCTION

The purpose of this paper is to describe psychosocial support interventions during the initial response to Hurricane Maria and during the following three months of recovery in Puerto Rico. Psychosocial support interventions refer to any type of local or outside support that aims to protect or promote psychosocial well-being and/or prevent or treat mental disorders (IASC Reference Group, 2017). The goal of this intervention is to include participatory conduct, in addition to socially and culturally acceptable, community-owned activities.

## BACKGROUND

The destruction of two hurricanes (Hurricane Irma and Hurricane Maria) in Puerto Rico in less than one month caused a catastrophe not previously seen in the Caribbean islands. The immediate damage included the destruction of the electrical grid, which has caused a loss of electricity on the island for almost 100 days as of this writing. Potable water was not available in many communities, health facilities were closed, and all communications on the island were lost.

Puerto Rico was initially hit by the Category 5 Hurricane Irma, which left one million people without power. On September 7<sup>th</sup>, 2017, it passed to the north and northwest of Puerto Rico, causing flash floods, heavy rains, and high wind gusts. Waves reached heights of 30 feet, and wind gusts topped 111 miles. Electricity was lost in the hardest hit areas. There were three deaths, over one million people left without electricity, and 56,000 people left

without clean water. Additionally, 40% of the hospitals were only operational with diesel generators (Johnson, Arkin, Cumming, Karins, 2017). The governor declared the islands of Culebras and Vieques to be disaster areas.

On September 20<sup>th</sup>, Hurricane Maria made a direct hit as a Category 4 hurricane on the mountainous American island with winds up to 155 mph. Since then, the 3.4 million United States citizens that live in Puerto Rico have had little in the way of a normal life. Three months later, about half of the population has access to electricity, many health facilities are operating using generators, and main roads have been re-opened. Although access to the interior of the island is challenging, communications are available in areas where telecom towers are back online.

As the infrastructure is restored, attention has been turned to the public health consequences of the hurricane. Chronic illnesses in the elderly and children have worsened. Diarrheal diseases are prevalent, as well as dermatological issues resulting from mosquito bites. A large amount of trash and debris have accumulated, attracting rodents and other vermin that carry diseases and infections.

## INITIAL INDIVIDUAL RESPONSE AND PSYCHOSOCIAL INTERVENTIONS

The Puerto Rican people, all of whom were affected by this catastrophe, are enduring the psychosocial impact of the destruction. Initial interventions by outreach groups from the Red Cross indicated that the survivors reported family and friends missing. Many people left their homes and moved to larger cities or left Puerto Rico for the United States. Since such communications as telecommunications and road systems were interrupted, many

---

\*Correspondence regarding this article should be directed to: jprewitt@cpss.com

reported that the prolonged separation from family, friends, and neighbors made them feel insecure in their neighborhoods and fearful that they would never be the same again.

The destruction was such that most of the survivors experienced the loss of home, property, income, and other financial sources. With over 100,000 houses damaged and major disruption to the island's infrastructure, survivors were displaced. Thousands of people left their neighborhoods, and hundreds of thousands have migrated to the United States. The day after the disaster, people felt uprooted from their homes and neighborhoods because they were completely destroyed.

While most people reported that they sheltered in place, believing that their concrete homes would survive the hurricane, the severity of the events caused people to feel that their lives were threatened. They witnessed injury, death, destruction, and injury. Many reported helping friends, neighbors, and family members. They also experienced feelings of inadequacy and survival guilt from not being able to save family and neighbors.

Prewitt Diaz (2017) reported that in the initial ten days after the hurricane, volunteers interviewed 630 people in 12 communities. Their immediate responses suggested that their social and problem-solving skills were stunted as a result of the hurricane. They lacked realistic plans for approaching recovery efforts. As they told their stories, crying and physical responses suggested that survivors had lost confidence in their abilities and lacked the strength to recover. Many sat in their destroyed properties or walked aimlessly in the neighborhood. Any suggestion that they move to a shelter away from their neighborhood was met with resistance. Many were resistant to change and expressed their feelings by crying or having emotional outbursts.

The emotional toll on the survivor's psychosocial detachment has major implications for the future, raising the following questions:

- How many friends, family members, and known community members died, disappeared, were left for dead, or whose fate is unknown?
- Where are the relatives, friends, and community members who were separated as a result of migration or involuntary movement within Puerto Rico following Hurricane Maria?
- How have the individual lives of the affected people changed after facing death? How many now experience a loss of motivation, enjoyment in daily interactions with family and friends, and community activities if their occupation, homes, neighborhoods, and possessions are no longer considered important?
- How have future ambitions, goals, and life purposes been affected by the hurricane?
- In many individuals, is there a loss of the sense of place? Does preparation for death mean losing one's self, which causes identity problems and survivor's guilt, or has this been influenced by the hurricane?

A closer look at the individual psychological responses to the hurricane leads us to look closer at the literature. The minds and

bodies of the populous entered an unprecedented state of heightened psychological, social, and neurological arousal (Dahlitz, 2015). The affected people were focused on their immediate needs, regardless of pre-existing relationships within the community. High levels of arousal activate survival instincts. The brain focuses on the threat and on survival, so the body releases physical and psychological resources to deal with immediate survival needs (Sherin & Nemeroff, 2011).

The effort is such that the worldview becomes narrow, so the attention to self, neighborhood, and community awareness is reduced. Important matters for affected individuals are to replace the perception of the physical, environmental, and social loss with intense impressions that dominate the experience of hurricane survival. The Puerto Rican people have undergone a radical process of psychosocial reorganization in order to deal with the present, and their perception of this new reality excludes the future and the past.

This process results in a profound interruption of the pre-existing continuity and continued development of the psychosocial aspects of life in their communities. Since detachment is unfamiliar, the affected people could not recognize the psychosocial interruption in their lives or understand its impact on their future psychosocial growth and evolution in place. This psychosocial detachment affected the normally constant, taken for granted, and not consciously experienced continuity of life (Gordon, 2004). In the case of Hurricane Maria survivors, there were three factors that impacted their continuity of life:

- (1) The subjective sense of imminent death, injury and helplessness;
- (2) How immersed the affected people were in the feelings, sounds, and fury of the winds, rain, and waves of destruction; and
- (3) The duration of the perceived threat and identifying when safety and security could be re-established. In the case of Puerto Rico, three months have elapsed, and there is still a lack of basic services, poor infrastructure. A public and mental health crisis continues.

If the human body is expected to be lost in death, it may lead to bodily disconnections (Psychosomatic symptoms), a lack of interest in sensations (Food, warmth, or sexuality), numbness, disassociation, and out-of-body experiences as a result of traditional beliefs (*espiritismo*). These symptoms are associated with traumatic stressors, such as those caused by Hurricane Maria.

Hurricane Maria significantly affected the bodies, minds, and social systems of the Puerto Rican people. Detachment and loss of a sense of place affected the continuity of social relationships. The psychosocial effects of this hurricane ruptured and/or degraded the physical, environmental, and figurative sense of place that supports the affected individuals and sustains their place attachments.

## INITIAL PSYCHOSOCIAL SUPPORT ACTIVITIES

### Fostering Connection and Calmness

The emotional distress caused by Hurricane Maria arises

from complex emotional, social, physical, and spiritual effects resulting from its destruction. Many of these reactions are normal and can be overcome with time. In order to tackle this problem, we relied on the SPHERE Handbook (2011) for guidance. This intervention recognized and was guided by the following principles: (1) The program provides locally appropriate mental health and psychosocial support and promotes self-help, coping and resilience; (2) It has been introduced since the initial response to strengthen recovery by engaging the affected people in guiding and implementing community-based psychosocial interventions; (3) The interventions are delivered in such a way that the affected people will be supported; and (4) The delivery of the psychosocial interventions will enable self-efficacy through meaningful participation, respect the importance of religious and cultural practices, and strengthen the ability of community people to support their own well-being.

### **Psychosocial Fusion**

In the aftermath of the hurricane, and in spite of the slow process of recovery, the affected people who remained in their neighborhoods and villages have begun to re-establish their place by forming a new, survival-oriented communal system in which the high state of detachment has shifted into a stage of high energy re-establishment of place. For example, neighbors are sharing their electricity with neighbors that need to keep medicine in cold storage. In another neighborhood, neighbors share a gas stove to cook household meals. The affected people are sharing disaster experiences and their loss of place. Another example is the number of reported community groups in which the elderly rely on previous disaster experience to join together in celebrating life. There is a renewed focus on values that had been forgotten, such as story-telling, folklore activities, and taking advantage of the Christmas holidays to celebrate their traditions. Typical cultural meals and drinks supported by live music from the neighbors have been observed. One may observe that affected people, families, and communities have a greater collective appreciation for each other ("*Yo no me quito*") (I will stay).

### **Dynamic Interactions of Affected People and Resources in Place**

The welfare and recovery of affected people depend on a dynamic process of interactions between the affected individual's needs and the resources available. To determine the needs of the affected people, the psychosocial support personnel conducted on-site interviews with survivors. They also explored historical images and investigated disaster area maps and photos of the destruction (Prewitt Diaz, 2017).

Community mobilization took into consideration the results of a quantitative assessment of the needs and resources of those in the destruction path of Hurricane Maria, and focus groups with the affected people were performed to identify the geographical, psychological, and social capital available to them. In addition, the focus groups and key informant interviews identified the psychosocial interventions that could address the need for connections and promote calmness, as well as those community needs that would help rebuild the community. A deeper appreciation

of pre-disaster living experiences and place-based experiences of the affected people enabled the stakeholders to consider more ethical and sustainable forms of psychosocial activities.

A cultural sense of place is enhanced by sharing stories and experiences from the past (i.e., Has this happened here before? How did your elders cope with the situation? What do you remember from previous hurricanes?). These will revive lessons learned by the affected people, which will improve feelings of psychosocial well-being. This can evolve into creative practices for re-establishing place. Involving the affected people in psychosocial support activities generates the space for affected people to think differently and identify new possibilities in at least three ways.

First, the inclusion of all affected people creates the feeling of being visible to partners and external stakeholders. Their narratives and performances in writing, painting, and acting in community theaters give the affected people the opportunity to document their presence (How they used, moved through, and made their place, neighborhood and community). The affected people can assert their right to be a part of the recovery (Healing process) of their place, neighborhood, and community.

Second, through psychosocial support activities, the affected people are able to share with others the experiences of their place as inhabited. They also share an understanding based on psychic attachments, bodily and social memories, and fragile social ecologies. The discrepancy between the perception of the affected people and their inhabited neighborhood or community and the destroyed place will lead them to develop the necessary activities to re-establish place. As they consider the emotional tensions associated with the acceptance of the loss of everyday life in their place, affected people are encouraged to remember life in a previously unaffected neighborhood and community.

Third, if the affected people are understood as having been wounded by the recovery activities (or lack thereof) and the devastating power of Hurricane Maria itself, other images of place might focus attention on why places, people, groups, environments, and nature continue to be injured. If the affected people, their place, and neighborhood are wounded through displacement, material devastation, and root shock, so, too, is the whole community and its inhabitants.

Psychosocial support may offer possibilities for place-based mourning and care across generations, which build self-worth, collective security, and social capacity. Materially, psychosocial support activities motivate the creation of social capital, provide a range of memorialization activities, create new forms of public memory, and are committed to intergenerational education and social outreach (Prewitt Diaz & Dayal, 2008). Affected people who stayed in their places and communities have begun to involve themselves with others in the evacuation, registration for Federal Emergency Management Agency (FEMA) and receipt of aid from different sources. They have identified activities that strengthen the community. Their personal experiences have been put aside to focus on the re-establishment of place.

## **INTERVENTIONS**

The teams agreed that they would provide interventions that

include the use of functional and cultural coping mechanisms of the individuals and the communities affected by Hurricane Maria to help the affected people regain control over their circumstances (SPHERE, 2004, p. 293; SPHERE, 2011, Guidance Note 1; SPHERE, 2017, Draft 2: p.62). Community-based self-help groups were encouraged. Schematic of the theoretical framework of mental health and psychosocial interventions in the immediate response to Hurricane Maria in Puerto Rico.

### Early Interventions

Initial teams made field visits to twelve communities in the “swath of destruction” (Hurricane Maria’s path) from the southeast to the northwest side of the island. Early interventions included activities in Tier 1 and Tier 2. These lasted for the initial three weeks of the disaster response. This contact included establishing connections with relatives through the Safe & Well program (American Red Cross) and a quick interview about emotional needs. Each interaction lasted about 30 minutes. Approximately 640 individual interviews were conducted during the initial assessment.

Figure 1 (below) reports on risk factors, inhibitors to recovery, and resilience factors that facilitate the re-establishment of place.

The initial situational assessment suggested that immediate needs included food, water, and first aid. As the teams engaged the affected people and recruited local volunteers, additional information was obtained that identified people in the affected communities with knowledge and skills to assist their community’s immediate recovery (a mid-wife, a community health promoter, three people with first aid skills who were attached to the health teams, a soldier with organizational skills, a retired agronomist, teachers in local schools, and several people who knew about construction). The assistance from the local political figures in terms of transportation facilitated reaching out to the most affected “barrios.”

After the third day, the community mapping exercises were completed in the target communities. Local volunteers were performing peer-to-peer counseling, and a routine had been established to address the most pressing problems as identified by the survivors themselves. In particular, potable water and mosquito repellent were most in need after physical first aid.

By the end of the first week, the ten Red Cross teams had been augmented by community volunteers. The psychological first aid classes had been conducted (UPR Humacao, UPR Cayey, and UPR Utuado). The 16 students who were trained began more detailed community and individual assessments in the target communities. The Red Cross mental health staff were supervising these volunteers and providing crisis intervention as needed. By the end of the second week, the target communities were operating at Tier 2 (see Figure 2).

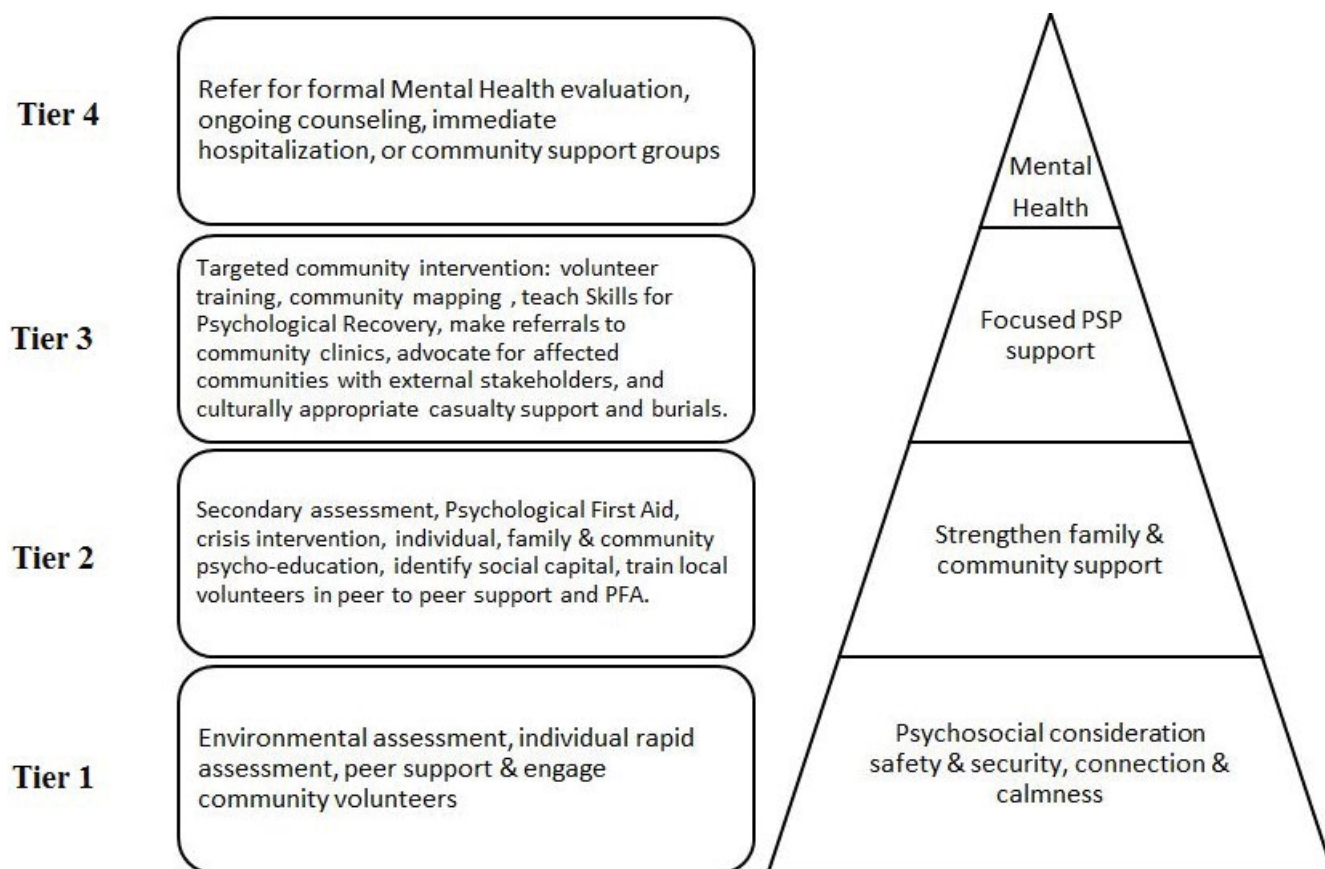
Four post-disaster mental health interventions during the immediate phase are highlighted below. The selection of the sites was determined from the notes obtained by the initial disaster mental health teams that visited the communities during the week after Hurricane Maria. The key criterion used was as follows: at least three or more community members had to have referred to the impact of the hurricane on the loss of sense of community as opposed to a sense of individual losses to the impact of the hurricane.

### Intervention 1

Red Cross health and mental health teams visited affected communities in Cayey during the fourth and fifth day of the response. They identified two “barrios” (communities) as potential places to initiate interventions. On the fifth day, a volunteer conducted a training session with nine community volunteers in the Emergency Center in Cayey and focused on community mapping and peer support. After the training session, the participants planned a community engagement activity.

Risk factors	Inhibiting recovery	Resilience factors
<ul style="list-style-type: none"> <li>• <b>Loss of community</b></li> <li>Houses destroyed</li> <li>Infrastructure</li> <li>Schools</li> <li>Clinics and hospitals</li> <li>• <b>Losses &amp; Transitions</b></li> <li>No electricity</li> <li>No clean water</li> <li>No communications</li> <li>Accurate information</li> <li>• <b>Relational</b></li> <li>Friends and family moved</li> <li>Migration to the U.S.</li> <li>Injured/dead</li> <li>Friends missing</li> </ul>	<ul style="list-style-type: none"> <li>➤ Poor social skills</li> <li>➤ Poor problem-solving skills</li> <li>➤ Deaths of dear ones</li> <li>➤ Destruction</li> <li>➤ Lack of social support</li> </ul>	<ul style="list-style-type: none"> <li>▪ Faith in God &amp; neighbors</li> <li>▪ Previous experience (Hurricane Irma &amp; Andrew)</li> <li>▪ Confidence in personal strengths/skills</li> <li>▪ Problem-solving skills</li> <li>▪ Knowledge of culture &amp; place</li> <li>▪ Awareness of use of social capital</li> <li>▪ Previous training in disaster management</li> </ul>

**Figure 1:** Figure for risk factors, inhibitors to recovery, and resilience factors that facilitate re-establishment of place after Hurricane Maria



**Figure 2:** Modified Pyramid of Services from SPHERE Draft (2017). On the left side are the tiers of services, one being the least comprehensive and four the most comprehensive. The second column includes some key actions for each tier. These actions are not comprehensive, and other actions may be included based on the assessment of cultural, linguistic, or contextual circumstances of the interventions. The intervention pyramid was adapted from existing American Red Cross protocols

This group decided to identify a street-level volunteer in each of the four most affected “barrios,” who would, in turn, visit homes and identify health, emotional, and communication needs. Over the next three weeks, the mayor collected community maps in two communities, which included a total of 550 households or approximately 2,000 affected people. They found that the needs were mostly for insulin, food, and water. In an interview with the Mayor of Cayey, Pares Arroyo (2017) reported that this activity not only identified needs, but also enhanced the interactions amongst neighbors and those identified in the social capital. As a result of this simple psychosocial activity, this paradigm shift resulted in the development of a matrix from the current stage of recovery until the return to normalcy (Pares Arroyo, 2017).

After the initial Red Cross training of community volunteers, who were serving under the community umbrella of INCICOPR (*Instituto de Ciencias para la Conservación de Puerto Rico*), there were three interventions that merit mention (Silva Caraballo, 2017). The psychosocial support strategy referred to as PIES is one of these. The intervention was done in proximity to the affected people and it is Immediate, Experiential, and Simple (PIES).

### **Intervention 2**

El fogón de la comunidad (The community stove/kitchen). (Silva Caraballo, 2017). A group of neighbors in Yabucoa lost their homes. They assessed what they had (Foods and social capital). In

this case, people were accustomed to cooking for large numbers of people. Once the meals were served, the community members had one hot meal per day. A number of lunch boxes were made and distributed to community members, who were bedridden, elderly, or disabled.

This initiative engaged the community in a resilient mode and significantly reduced the need for outside help consisting of canned foods. The community members were able to mobilize their own resources, feel useful during the recovery process, and share common cultural dishes within the community. The strategy guaranteed that the most vulnerable received at least one hot meal per day.

The day-to-day activity allowed the neighbors to begin to re-establish their place. They were able to connect with other neighbors that had moved to other communities within the town and learn about neighbors who had migrated to the United States. The government-run health clinic was only open for 6 hours a day. Neighbors provided transportation for those who were in need of health care.

### **Intervention 3**

Agua segura para vivir (Safe water to survive) (Silva Caraballo, 2017). This intervention was conducted with the external support of an organization called “Wave for Water.” The volunteers

mobilized the neighbors to: (1) Identify the locations of water tanks and to determine where the filters should be placed; (2) Develop rules for the use of clean water; (3) Ensure that the elderly and most vulnerable people received a filter for their water and that the community members helped each household install the water filter. This psychosocial support intervention was undertaken in locations with insecure sources of water, such as creeks, water wells, or water from roofs. The lesson learned was that a community that can secure a clean source of water for themselves is a resilient community.

#### **Intervention 4**

Las tres mosquiteras (The 3 mosquito net makers) (Silva Caraballo, 2017). In the immediate aftermath, a request was sent through various channels to acquire mosquito nets for affected communities. Mosquitoes not only cause fever and infections, but the use of smoke in small shelters caused upper respiratory infections in children, elderly, and people who were already sick. The objective of this activity was to find a quick and effective way to prevent illnesses in the most vulnerable residents of target communities. The intervention began by identifying target members of the community (i.e., Babies, children under four, pregnant or lactating mothers, the elderly, the frail, and the handicapped and/or blind). A group of women got together in each of the target communities, and the Red Cross secured mosquito net material for 60 mosquito nets (For a total of 720 mosquito nets). The important part of this project was the re-connecting effect of the workshops. The neighbors felt that they were empowered to develop their community with their own social capital and the assistance from external partners.

These four activities highlight the impact of psychosocial support activities in the aftermath of a catastrophic event, such as Hurricane Maria. The affected community re-established their family, neighborhood, and community support systems to foster a social environment, which helped affected people, families, and communities realize their potential and begin their road to recovery.

#### **Interventions during Early Recovery**

Three groups of volunteers Event Based Volunteer (EBV's) have continued to provide community assistance through their associations with faith-based groups, local advocacy groups, the municipal government, and community leadership, which emerged since Hurricane Maria. One group was affiliated with UPR-Humacao and continues to volunteer in Yabucoa, the town where Hurricane Maria first made landfall. The second group was affiliated with UPR-Cayey and has remained working in two affected communities in Cayey. The third group was affiliated with UPR-Utuado and has worked in a community in Utuado and visited Morovis and Orocovis.

Most of the participants are re-focusing their energy on re-establishing their places through community clean-up activities, creating safe spaces for the elderly and children, performing home visits for those who are disabled, and preparing for the traditional Christmas festivities. The latter has opened a space for the affected people to express themselves through music, community plays, and neighborhood get-togethers. The affected people show common characteristics for coping and adaptation.

The target communities in Puerto Rico still continue to experience a lack of electricity and potable water. Raw sewage has contaminated potable water, along with piles of refuse, waste, debris, and other pollutants in the neighborhoods. There is also a great need for post-disaster mental health support (Norris, Friedman, Watson, Byrne, & Kaniasty, 2002).

The neighbors in the target communities have reported in community meetings and focused groups' discussions that they feel stressed and experience flashbacks (such as hearing neighbors screaming, gushing water, and howling winds). An older man reported that when it starts raining, he becomes very anxious thinking that his house may flood again. Another person reports becoming nervous and starting to shake as nightfall approaches. Others report that they experience insomnia and feel confused. Crying spells and loud emotional outbursts are frequent in the target communities.

Mental health issues may have been exacerbated by the prolonged period without electricity, accurate information, water, and food. Goldman & Galea (2014) report that exposure to a traumatic event, such as Hurricane Maria, may cause people to re-experience the event. They often report flashbacks, nightmares, and, in the case of Puerto Rico, an increase in "*ataques de nervios*" (Puerto Rican syndrome), which is a physical expression of psychological distress (p. 173). These symptoms may be expected in the target communities because the affected people are still living in the disaster site. They continue to experience severe exposure and they saw, heard, and physically experienced the impact of Hurricane Maria (p. 175).

The recovery program was a participatory, community-owned experience and it was socially and culturally acceptable. The EBVs involved the members of the affected community in planning interventions. The community members volunteered to conduct mapping exercises, and the activities were sensitive to the capacities and circumstances of the affected people. The EBVs were facilitators. The affected people (Including the disabled and elderly) contributed to the prioritizing, planning, and implementing of the initial interventions associated with the psychosocial well-being recovery efforts. The affected people identified and strengthened the capacities of the existing formal and informal community structures. These psychosocial support interventions are sensitive to the norms and values of the affected people. They are planned and executed in a fashion that takes into account the diversity of cultural and social values among the affected people.

#### **Secondary Assessments**

The EBVs participated at least once a week with external stakeholders visiting the communities. These included the Red Cross, Save the Children, Medical Teams, and Mental Health Teams. The UPR-Utuado team visited with families and provided staffing in conjunction with community volunteers for the safe spaces for children in the morning and those for the elderly and disabled in the afternoon. The focus for the children was expressive and physical activities. The focus for the adult groups was what is locally known as "Domino Therapy" (DT). Here, the elderly or disabled were invited to sit at small tables and play dominoes (a favorite in the local communities). An EBV rotated among the tables to assess the participants in order to provide support,

identify individuals needing Psychological First Aid (PFA) and encourage peer support. During these activities, the participants were encouraged to remember how things were in past hurricanes and move forward in recovery.

### ***Psycho-Educational Activities***

The EBVs engaged the community members, including the elderly and disabled. They encouraged participation in safe spaces. The Skills for Psychological Recovery (SPR) is a brief skills-based approach to assist community members in coping after a disaster. It is intended to foster short- and long-term adaptive coping in disaster survivors exhibiting moderate levels of distress by promoting the development of skills that improve recovery in post-disaster settings. These skills include problem-solving, positive activity scheduling, managing reactions, helpful thinking, and building healthy social connections (Berkowitz, Bryant, Brymer, Hamblen, Jacobs, et al., 2010).

### ***Psychological First Aid (PFA)***

The UPR-Cayey team spent most of their days conducting PFA-related activities. There were two activities related to PFA. The first involved EBVs teaching, supporting, and supervising selected community volunteers. PFA has become a preferred post-disaster intervention (Goldmann & Galea, 2014). It has three goals: (1) Establish safety and security (Food, shelter, and connections) to promote adaptive coping and problem-solving; (2) Reduce acute stress by addressing post-disaster stressors; and (3) Help the affected people obtain additional resources to better cope with their current circumstances and regain a feeling of control. The second activity involved community volunteers identifying members of the affected communities that were showing signs of significant distress or who reported that they were experiencing disturbing thoughts, worries, or flashbacks as a result of the hurricane. This enabled the EBV's and community volunteers to refer these individuals to the Community Health Center.

### ***Targeted Community Interventions***

In the "barrios" (neighborhoods) of Cayey, community volunteers were identified on every street or in each sector of the target community. The community volunteers visited each community member in their sector every day. The volunteer identified people expressing negative physical or emotional symptoms. They accompanied the neighbor while they obtained PFA, which was offered in the Community Health Center. If the neighbor continued to express inappropriate thoughts and worries, they were referred to the Community Health Center.

The Community Health Centers in the target municipalities agreed that if volunteers took a referral to the emergency room, they would perform the necessary interventions. In these cases, the Health Center assessed the person, and, if needed, sent him or her to the regional hospital for specialized services. Once the person returned to the community, the volunteer worked with other neighbors to ensure that the affected person had a support network for care.

### ***Building and Strengthening Community Relationships***

All EBVs at the three sites reported that they spent about half of their time establishing relationships with local groups. The

primary group was the emergency management offices in the local municipalities. This group enabled psychosocial support efforts by providing transportation to the target sites and connections with external stakeholders. A second important group was faith-based institutions in the community, which were instrumental in providing locations for the "Safe Space" activities, as well as planning the psychosocial support activities in the target sites. The third source of support was schools. There, the EBVs, community volunteers, and teachers worked together to contact children and their families. Teachers served as volunteer staff for the "Safe Space" program, while the sports team members provided physical activities for children and organized aerobic activities for the elderly and disabled. The fourth group was the cultural center. They were instrumental in getting people together to share stories about the community. They are currently organizing Christmas programs, which serve as a way for affected people to refocus on the future.

## **SUMMARY**

This paper provides an update regarding the psychosocial impact of Hurricane Maria in Puerto Rico. It discusses the psychosocial activities that are being implemented by a group of EBVs in four communities. The focus of this community-based psychosocial support program was to alleviate fear and improve the re-establishment of place amongst neighbors. Based upon the preliminary results from daily logs, the affected people are reporting feeling calmer, safe, strong, hopeful, interested, and engaged in their recovery. These psychosocial interventions have helped the affected people experience an increased connectedness to those in their family, community, and age groups. The majority of the participants in the SPR report that they have improved their ability to cope and solve problems. They have also improved the ways in which they share their feelings.

The article didn't address PTSD in this study although there were comments from the participants in the focus groups that may be congruent with Post-Traumatic Stress Disorder (PTSD) symptom or behaviors". A comprehensive study will be conducted as soon as the recovery process is far enough advanced that electricity, potable water, and communications have been established in the Island.

These psychosocial interventions improved communication among families, neighbors, and communities. They also re-established a sense of meaning in daily activities, which will eventually serve to enhance resilience and improve psychosocial well-being. Finally, the psychosocial response has been in line with the threats to the emotional, social, and psychological well-being.

## **REFERENCES**

- American Red Cross. (2010). *Coping in Today's World: Psychological First Aid and Resilience for Families, Friends and Neighbors* (Spanish version). Washington, DC: American Red Cross.
- Berkowitz, S., Bryant, R., Brymer, M., Hamblen, J., Jacobs, A., Layne, C., et al. (2010). *Skills for Psychological Recovery: Field operations guide*. Washington, DC: The National Center for PTSD & The National Child Traumatic Stress Network.

- Conelly Holmes, R. (2017). *Is been 10 weeks since Hurricane Maria hit Puerto Rico. Here's where recovery stands*. Washington, D.C., USA: PBS/WETA.
- Dahlitz, M.J. (2015). Neuropsychotherapy: Defining the emerging paradigm of neurobiologically informed psychotherapy. *Int J Neuropsychother*, 3(1), 47-69.
- Goldman, E., & Galea, S.D. (2014). Mental health consequences of disasters. *Ann Rev Public Health*, 35, 161-183.
- Gordon, R. (2004). The social system as site of disaster impact and resource for recovery. *Aust J Emerg Manage*, 19(4), 16-22.
- Inter-Agency Standing Committee (IASC). (2017). A common monitoring and evaluation framework for Mental Health and Psychosocial support in emergencies. Geneva: IASC, Reference Group for Mental Health and Psychosocial Support in Emergency Settings.
- <https://www.nbcnews.com/storyline/hurricane-irma/hurricane-irma-skirts-puerto-rico-lashing-it-powerful-winds-flooding-n799086>.
- MHPSS. (2010). Mental Health and Psychosocial Support in Humanitarian Emergencies: What should humanitarian health actors should know? Geneva, Switzerland: IASC Reference Group for Mental Health and Psychosocial Support in Emergency Settings, Interagency Standing Committee.
- Norris, F., Friedman M.J., Watson, P.J., Byrne, C., & Kaniasty, K. (2002). 60,000 disaster victims speak. Part I. An empirical review of the empirical literature: 1981-2001. *Psychiatry*, 65(3): 207-239.
- <https://www.elnuevodia.com/noticias/locales/nota/unejercitodelideresseuneparalevantaracayey-2369978/>
- Prewitt Diaz, J., & Dayal, A. (2008). Sense of place: A model for community based psychosocial support programs. *Australas J Disaster Trauma Stud*, 2008-1.
- Prewitt Diaz, J.O. (2017). Hurricane Maria, personal and collective suffering, and psychosocial support as a cross-cutting intervention. *J Trop Psychol*, 7, 1-7.
- Sherin, J.E., & Nemeroff, C.B. (2011). Post-traumatic stress disorder: The neurobiological impact of psychological trauma. *Dialogues Clin Neurosci*, 13(3), 263-278.
- Silva Caraballo, F. (2017). Intervention of In CiCo in community response and recovery initiatives before the effects of Hurricane Maria on the Island of Puerto Rico. Trujillo Alto, PR: Institute of Sciences for the Conservation of Puerto Rico. Evaluative Report.