Developing a Comprehensive Trauma- and Resiliency- Focused Program After Superstorm Sandy in New York City

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ABSTRACT

To contribute to the ongoing discourse about successful programming supporting intermediate behavioral and mental health needs of vulnerable communities affected by disaster, this article presents the Children's Health Fund (CHF) Sandy Recovery and Resiliency Program as a descriptive case study for a multifaceted, community-based approach to building resiliency, coping, and socioemotional skills in an underserved community in New York City that was affected by Superstorm Sandy. The case study involves retrospective review and analysis of qualitative and quantitative data that were collected as part of routine care and program implementation. From the analysis emerged a program consisting of 3 components: (1) delivery of workshops and community events to decrease stigma and build community-wide resilience, (2) delivery of workshops for students and educators in the local school to increase coping skills as well as referrals to clinical mental health care, and (3) provision of mental health care via a mobile mental health clinic. As a result, we found that following periods of excessive trauma, children and families require a broad-based approach to mental health support. Additionally, the use of the mobile clinic abated most common access barriers and served as a proxy of the concern of the organization for the community. (*Disaster Med Public Health Preparedness*. 2019;13:613-617)

Key Words: resilience, psychological, community mental health services, disasters

After the most immediate and life-threatening disaster-related medical emergencies resolve, health care providers often encounter a secondary surge of unmet mental health care needs. Depending on a disaster's severity and duration, survivors may suffer anxiety, depression, mood disorders, and posttraumatic stress reactions/disorder.[1] These needs may last for months to years after the initial incident, and may often go unreported, depending on local resources, stigma, and available programming. Certain populations have been identified to be at increased vulnerability for behavioral disorders caused or exacerbated by the disaster, as they have access and functional barriers that may interfere with their ability to access or receive medical care before, during, or after a disaster or emergency. Among these groups are people living in poverty or near poverty, children and youth, individuals with preexisting behavioral health concerns, and those who have experienced prior trauma.[2] Also, in the intermediate- to long-term recovery period, social service providers themselves, from teachers to case managers to psychologists, often experience burnout and "compassion fatigue." Compassion fatigue is the cumulative physical, emotional, and psychological effect of exposure to traumatic stories or events when working in a helping capacity, combined with the strain and stress of everyday life.[3] As identified by Pfefferbaum, timely and appropriate mental and behavioral health interventions can help affected populations recover and adjust successfully to changed circumstances.[4] In order for this to happen, sustained, high-quality behavioral mental health services should be provided not just in the immediate aftermath of a disaster but throughout the recovery period, especially when working with at-risk groups and vulnerable communities. However, despite this evidence, little guidance exists on how to meet increased behavioral health needs that arise during the recovery period. Also, little information is present in the literature on how to specifically serve vulnerable populations who tend to experience difficulty accessing services or may refrain from doing so because of associated stigma.[5]

In order to contribute to the ongoing discourse about successful programming supporting intermediate behavioral and mental health needs of vulnerable communities affected by disaster, this article presents the Children's Health Fund (CHF) Sandy Recovery and Resiliency Program as a case study for a multifaceted, community-based approach to building resiliency, coping, and socioemotional skills in an underserved community in New York City that was affected by Superstorm Sandy. In order to build strong and evidence-based knowledge and to successfully provide the disaster relief workforce with effective

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strategies to act in the recovery of a disaster, the sharing of best practices, successes, and lessons learned in the field is crucial. Dissemination of such knowledge may be used to strengthen disaster preparedness plans and design more effective disaster relief programs.

METHODS

This program description in context involves the retrospective review and analysis of the programmatic data that was collected by the CHF provider, program, and evaluation teams as part of routine care and program implementation, internal quality assurance, and impact assessment conducted for the purposes of internal monitoring and evaluation and funder reporting. Data were collected for the duration of the program, starting in January 2013 and ending in January 2015. Qualitative data include program implementation notes and observations, internal reports and reports to funders, and informal feedback from program beneficiaries. Quantitative data include patient diagnoses collected within the provision of the individual counseling services provided by the program. Qualitative information was reviewed to present the CHF Sandy Recovery and Resiliency Program as a case study to explore challenges and share best practices related to implementation of a behavioral and mental health care program in the context of an underserved community affected by natural disaster. Patient diagnosis data were de-identified and analyzed in aggregate to identify the initial status and most common issues in the patient population. Data analysis was conducted in SPSS V.2.1. The study was approved by the Institutional Review Board of the Quiet Mind Foundation.

Superstorm Sandy

Superstorm Sandy made landfall in New York and New Jersey on October 29, 2012. As a hurricane and post tropical cyclone (termed "Superstorm"), Sandy was responsible for the deaths of 147 people in the United States, Canada, and the Caribbean,[6] and caused $65 billion in damage in the United States.[6] In New York City, 600 million gallons of water flooded roads, airport runways, subway tunnels, sidewalks, and private properties. Superstorm Sandy's water surge cut power for 700,000 New Yorkers and 8.5 million people in total.[7] Sandy set historical maximum recorded water levels in multiple neighborhoods in New York, New Jersey, and Connecticut.

New York City experienced flooding of the subway system, the New York Stock Exchange was closed for 2 consecutive days, many major hospitals were closed and evacuated, and voice and data communication was disrupted in many areas of New York City. Numerous homes and businesses were destroyed by fires, including over 100 homes in Breezy Point, Queens. Emergency services also suffered a setback as many Fire Department of New York Emergency Medical Services stations were evacuated. In addition to the damage sustained during the storm, looting and burglary became a problem in many of the evacuated and damaged communities, as well as criminal syphoning of gas out of vehicle gas tanks. The storm also exposed flaws in New York City's Office of Emergency Management zones used to order evacuations. Numerous communities that were hit by the storm were in fact not in mandatory evacuation zones prior to the storm.

The Disaster-Affected Community

The community where the CHF Sandy Recovery and Resiliency Program operated is among those that were not in mandatory evacuation zones prior to Superstorm Sandy. Relatively isolated from public transportation when compared to others in New York City, the area is almost entirely surrounded by water and was devastated by the storm. A 10-foot surge flooded cars, homes, and communal buildings. Many residents stayed in their homes during the storm, or needed last-minute evacuation support.

Even prior to the storm, the community was underserved. The number of residents that required income support in the form of Temporary Assistance for Needy Families, supplemental social security, or Medicaid doubled (16.1% to 33.9%) from 2000 to 2010, and in terms of Medicaid alone, the community district's Medicaid population quadrupled from 2000 to 2010.[8] Also, nearly half of the students attending the local public elementary school in 2012 were eligible for federal free or reduced-price lunch.[9]

After the storm, many community members did not receive substantial US Federal Emergency Management Agency (FEMA) support and had no choice but to pay completely or significantly out of pocket for rebuilding houses, temporary housing, and replacing clothes, furniture, and basic household items destroyed by Sandy, exhausting savings and resources. The presence of mold further exacerbated financial strains on the community. Finally, new flood maps requiring for structures to be raised were released after community members had already expended their insurance money on repairs.

Two experienced disaster response specialists were deployed by CHF to assess FEMA claims, neighborhood demographics, and available mass transit and social services, as well as gaps in medical and/or mental health care safety nets. These factors allowed CHF's assessment team to determine where recovery and resiliency teams could be deployed most effectively. While the community was serviced by medical providers, a number of barriers made access to appropriate behavioral mental health services a challenge for the members of the affected community. The observations of CHF's Community Support and Resiliency Unit (CSRU) staff suggest that these barriers were largely due to stigma, financial burden, and lack of trained professionals. Significant stigma was associated with seeking mental health services, and community members reported being worried

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about being seen accessing the services provided by the CHF program. Also, given the financial strains put on the community by the burden of rebuilding and restoring houses and facilities affected by the storm, lack of insurance and high copayments were indicated as barriers to the access of services. Finally, few child mental health professionals available to the community were trained in trauma therapy, which resulted in a gap in providing appropriate services to this affected group.

The Children's Health Fund Sandy Recovery and Resiliency Program

CHF has been using mobile medical clinics to deliver medical and mental health care to children and families living in poverty for over 30 years. According to the literature, mobile clinics are successful in reaching vulnerable populations by delivering services directly to communities of need and flexibly adapting their services based on the changing needs of the target community. As a link between clinical and community settings, mobile clinics address both medical and social determinants of health, tackling health issues on a community-wide level.[10] CHF's mobile health clinic model was adapted for disaster response in 1992 when CHF sent its mobile units to provide health care for the survivors of Hurricane Andrew in Florida.

In 2005, CHF deployed mobile medical clinics to help families hit by Hurricane Katrina in the Gulf Coast region. In addition to medical care, CHF teams provided counseling for traumatized children and their families and professional support and training for mental health professionals, on a second type of mobile clinic, the CSRU. Specifically designed for delivery of medium- to long-term mental health services, the CSRU can accommodate individual, family, or group therapy and has an area in the rear that can be used for therapeutic play.[11] This unit was used again in 2012 for the Superstorm Sandy response.

Sandy Recovery and Resiliency Program Development and Components

Participatory Program Development

In order to develop the long-term response program, the CHF chief medical officer, program officer, and CSRU staff composed of 2 psychologists, 1 clinical social worker, and 1 case manager held a series of meetings with key local mental health officials, private and community-based mental health providers and agencies, local elementary and high school officials, day treatment centers, and community hospital staff. CHF's experience made it evident that successful contact and engagement hinged on our mental health team being able to successfully integrate into the community. CHF has developed an approach of working through local community leaders and organizations to gain buy-in and trust prior to initiation of services. Through interactions in these casual settings, our team gained trust and recognition. This facilitated our integration into other community domains and enhanced our ability to informally assess the mental health needs of community members. Through these interactions, team members were able to have conversations with key community members and partner with local organizations witnessing on-going distress for referrals. In addition, in order to maximize the participation of the local affected population in program planning, CHF staff engaged with parents, a local community nonprofit, and organizers of the local emergency food and services distribution site. This allowed the program staff to connect with and gain an introduction to the community through trusted locals and elicit their feedback on the needs of the community. A specific feature of the participatory design of the program was the addition of yearly "Family Fun Days," carnival-like events recommended by the head of the parent group at the local elementary school, who told the program staff, "The kids just need something that helps them forget about it all for a little while, and to have fun." These festivals gathered over 100 participants every time and were a crucial step in overcoming the mistrust of a mental health service new to the community.

Building Community-Wide Resilience

In order to decrease stigma associated with mental health care and to build community-wide resilience by fostering a better local understanding of children and families' psychosocial strengths and needs, the program's licensed mental health professionals conducted 24 workshops and outreach events aimed to help reduce the stigma of mental health services, as well as help community members cope with stress. The workshops specifically discussed issues of stigma, provided psychoeducation about normal posttrauma and stress reactions, allowed for participants to discuss their thoughts and fears about mental health treatment with licensed professionals, and trained participants to identify behavioral "red flags" so they could better support their families, friends, and neighbors. Also, to sensitize the local community to the mental health burden among children following the hurricane, CHF staff participated in a radio program from a local radio station. Finally, in order to strengthen the ability of the local mental health workforce to cope with the disaster and be better prepared to serve the local population, CHF organized 2 "Compassion Fatigue" workshops for local mental health professionals on self-care skills to avoid burnout. CHF included compassion fatigue care in its Superstorm Sandy model to help local professionals establish support systems and to help them manage the emotional strain of working with those suffering from traumatic events.

Integration With the Local School System

To further bridge the gap in access caused by lack of awareness and distrust of mental health services, CHF sought to enable the local elementary school to better identify and address children's emotional needs and provide school-based support, as well as referrals to care when needed. The

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program's licensed clinical social worker and case manager conducted training sessions for educators and workshops for students and accepted patient/child referrals from school staff. Five teacher trainings covering topics such as stress management and education techniques were conducted for the educators at the local school to foster coping skills and resiliency in school staff. Early in the intervention, the program distributed "coping kits," which had been designed as part of CHF's response work following Hurricane Katrina. The coping kits were created as an innovative way to build resilience in children in the wake of disasters. The coping kits included carefully chosen items including a flashlight, stress ball, finger puppets, and a coloring book. While providing children with a platform to express and cope with their trauma, the coping kits were also a source of playfulness and joy for the children and furthered relationships with the families in the community. Two workshops were delivered to the school's prekindergarten cohort, covering mind-body techniques such as belly breathing and awareness of body signals of stress.

Clinical Mental Health Care

CHF deployed a CSRU staffed with 3 licensed mental health professionals (2 psychologists and 1 licensed clinical social worker) to offer supportive and cognitive behavioral therapy including trauma-focused cognitive behavioral therapy. Trauma-focused cognitive behavioral therapy is an evidence-based treatment approach shown to help children, adolescents, and their caregivers overcome trauma-related difficulties. It is designed to decrease negative emotional and behavioral responses following child sexual abuse, domestic violence, traumatic loss, and other traumatic events. The treatment, based on learning and cognitive theories, provides a supportive environment in which patients are encouraged to talk about their traumatic experience while improving their ability to manage symptoms associated with its recall as well as their ability to cope with stress.[12] A total of 1456 individual and 1437 group clinical encounters were delivered over the course of the intervention. Diagnosis data were analyzed for the 115 patients who received a diagnosis during individual psychotherapy on the CSRU from September 2013 onwards. Of these patients, 29 were pediatric (<21) and 81 were adult. Amongst the adults, the majority of patients (83%) suffered from 1 mental health disturbance, while 10% of patients suffered from 2.[a] The most common diagnoses were adjustment disorders (39% of diagnoses), anxiety disorders (24% of diagnoses), and mood disorders (27% of diagnoses).[b] Amongst the children served, the majority of patients (66%) suffered from 1 mental health disturbance, while 14% of patients suffered from 2.[a] The most common diagnoses were adjustment disorders (30% of diagnoses), anxiety disorders (26% of diagnoses), oppositional defiant disorder (15% of diagnoses), and attention-deficit/hyperactivity disorder (ADHD) (11% of diagnoses).[c] These results are consistent with those of other studies of postflooding populations that identify adjustment, anxiety, and mood disorders amongst the main impacts of this kind of natural disasters.[13] A total of 10 multisession therapy groups were formed in the course of the intervention, targeting various sections of the community to make sure that services were provided at all levels. Three groups were dedicated to parents, 2 groups targeted children, 1 group was provided to seniors from the local retirement home, 2 groups were dedicated to local social and mental health workers, and 2 groups were open to the broader community.

Ramp Down

The long-term goals for this program were to support children and families to overcome mental health challenges related to Superstorm Sandy and to build the resiliency necessary to face future trials. CHF spent 2 years in this community and ended services in mid-January 2015. The program was extended beyond the initial 1-year funding grants, as the field team felt that the patients needed more time. Over the 2 years following the event, the community stabilized. As the program ramp down period approached, many patients were coming to the natural end of their therapy sessions. Those who needed additional care, many with issues that predated or were less directly related to the disaster, were referred to appropriate providers. To ensure that any unexpected needs were met, the program was designed to continue case management services for several months after the direct mental health care was phased out.

DISCUSSION

In working with the people hit by Superstorm Sandy in New York City, the CHF Sandy Recovery and Resiliency Program sought to actively engage with a variety of different groups and institutions. This had the double scope of resolving stigma concerns and distrust towards a behavioral and mental health program that was external to the community and fostering community-wide resilience. In order to achieve both of these goals, CHF maximized the participation of stakeholders from the local affected populations in program design, thus integrating venues for informal and nontherapeutic introduction of the program and the recipient community. CHF also worked in the schools and at the local library and was present during festivities to foster an in-depth relationship between the program and the community that efficaciously resolved stigma concerns. A community-based approach can bring together a wide array of stakeholders, increase levels of community empowerment, leverage existing

[a]Please note that 1 patient may have more than 1 diagnosis.

[b]Six of the adult patients that sought care from the program were not formally diagnosed, but were reported to seek care for solely relational problems. Six patients who received a formal diagnosis also reported relational problems, 2 patients with formal diagnoses also reported a social stressor, and 1 patient with a formal diagnosis reported both a stressor and a relational problem.

[c]Six of the pediatric patients that sought care from the program were not formally diagnosed. Their treatment focused on relational problems (4 patients) or solely social stressors (2 patients). One patient who received a diagnosis also reported relational problems, and 2 patients with diagnoses also reported a social stressor.

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resources, and develop a new network for information dissemination. The protective effect of social support on mental health after a natural disaster has been demonstrated across several studies. Research has demonstrated that increased perceived support from social networks (individual and a larger community) reduced the long-term effects of disaster exposure on mental health in a sample of hurricane survivors.[14] Similarly, increased social support can be associated with reduced symptoms of posttraumatic stress disorder (PTSD), depression, and generalized anxiety disorder in adults who were exposed to Hurricane Andrew. Social support also was found to be related to measures of general distress in a sample of individuals exposed to Hurricane Katrina.[14]

The use of the CSRU in the CHF Sandy Recovery and Resiliency Program not only abated the most common access barriers such as transportation and insurance, but also served as a token of the concern of the organization for a community that otherwise reported feeling "abandoned" by institutions and relief organizations alike. Mobile clinics have been proven to be successful in building trusting relationships with the communities they serve because of their physical presence in the community.[15]

CONCLUSION

Families living in poverty or near poverty are extremely vulnerable during and after a natural disaster, which often exacerbates already existing health issues, access barriers to care, and financial problems. We propose that posttrauma communities require a broad-based approach to mental health support to reduce stigma of needing and/or receipt of services and to decrease other barriers to access. Despite the limitations, this report has important implications regarding mental health consequences of Superstorm Sandy and supportive program design and implementation. As natural disasters are continuing to strike across the globe, it is more important than ever to develop, test, refine, and document effective program models for disaster relief and recovery.

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