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The Impact of Hurricanes on Children and Families and Interconnected Systems

Hurricanes can have a significant impact on children and their families and related interconnected systems. Major hurricanes (category 3 and above) often lead to tremendous physical destruction and interruption of local services, and take an economic toll on communities. From an ecological perspective, the devastation and the related impacts of hurricanes can have a significant effect on child, family, and community well-being. The articles in this special issue on the impact of hurricanes on children and families and interconnected systems build upon the lessons learned from past disasters and focuses on some of the advances and work being conducted with children and their families in light of catastrophic hurricanes in the past few years (Hurricanes Harvey 2017, Maria 2017, Irma 2017, Michael 2018 and Florence 2018).

Research on the psychological impact of natural disasters on children suggests that most children post-disaster are quite resilient. In a recent analysis including 8,306 children (age 3 to 18) from eight studies post-disaster, six of which were after Hurricanes, Lai, Lewis, Livings, La Greca and Esnard (2017) found that most children were in the resilience trajectory (i.e., persistent low posttraumatic stress symptoms (PTSS) over time) within the first year after the disaster, as well as after the first year. Nonetheless, there were substantial percentages of children who were within the chronic trajectory, defined as persistent elevated PTSS within the year post-disaster and after one year (3.9% to 38%; 4% to 23%, respectively), and within the recovery trajectory, defined as initially elevated PTSS, followed by a decrease in PTSS within the first year after the disaster, as well as after one year (7.3% to 43%; 16.4% to 27.1%, respectively). Similar to the adult literature, findings indicated that social support is a core protective factor suggesting that interventions should bolster social support for children and families. Findings also revealed risk factors for chronic trajectories in children included low social support and family connectedness, perceived life threat, perceived threat to parents, experience of evacuation, housing disruption, and violence exposure (p. 580). Factors distinguishing recovery versus resilience trajectories were general anxiety, age, gender, loss of family members, prior trauma/loss and exposure to hurricanes.

Understanding the impact of hurricanes on children, their families and related systems will help us better target risk factors and promote protective factors during hurricane preparedness and recovery. The identification of the risk factors for children's trajectories post-disaster

provides hope in that many of the factors are malleable and can be addressed during hurricane preparedness and recovery. However, there are still many questions to be addressed, such as:

(1) What types of screening and on-going assessment processes and tools are available to effectively identify children within the resilience, recovery and chronic trajectories and changes that occur over time, and do these assessments go beyond only identifying PTSS?; (2) What intervention models are available to meet the unique needs of children post-hurricane?; (3) Are there certain groups of children that might be more vulnerable than others based on environmental, cultural or historical factors?; (4) How might families rely on current technology to help them rebuild post-hurricane?; and (5) What is the impact of hurricanes on the helpers who are working with children with resilient, recovery or chronic trajectories, and how can we best support community providers? The articles in this special issue attempt to answer some of these questions.

This special issue includes research on two assessment tools to use with children after hurricanes: 1) Specialized Crisis Counseling Services (SCCS) interview form called the Child and Adolescent Assessment and Referral Tool (Brymer, Hansel, Steinberg, Speier, Osofsky, & Osofsky, 2018) and 2) Hurricane Exposure, Adversity, and Recovery Tool (HEART; Dodd, Hill, Oosterhoff, Layne, & Kaplow, 2018). Both of these assessment tools recognize the need to limit the burden associated with lengthy assessment and are inclusive of assessment of risk factors and behavioral reactions and symptoms. Brymer et al. (2018) used the Child/Adolescent Risk Screening and Referral Tool to identify children affected by Hurricanes Katrina and Rita. Based on the assessment results children were provided *Skills for Psychological Recovery* (SPR; Berkowitz et al., 2010) which included problem-solving problems related to home, school and community, anxiety, worry and traumatic symptoms, and ways to increase support. The Substance Abuse and Mental Health Services Administration's Regular Services have now incorporated the Child/Adolescent Risk Screening and Referral Tool and the *Skills for Psychological Recovery* intervention into their Crisis Counseling Program. The screening tool also includes additional questions for parents of children age 0-7. Building on this work and other assessment approaches, Dodd et al. (2019) developed and rigorously tested the HEART, a brief, 29-item screening tool for children (7-17) post-hurricane with a diverse sample of children after Hurricane Harvey. The HEART is well grounded in the research related to post-war and post-disaster settings to capture hurricane exposure, post-hurricane adversities, pre-existing risk factors, and on-going adversities. Providers

are encouraged to use these screening tools to identify children's needs post-hurricane.

Two innovative intervention models are discussed in this special issue, and provide useful frameworks for implementation of behavioral health in school settings as well as other settings such as primary care. Hana and colleagues (2019) describe a multi-component assessment and treatment program called Project REACH. Project REACH was provided to children and youth after Hurricane Harvey in the Houston area. In conjunction with utilizing a multi-disciplinary team with a care coordinator, an evidence-based transdiagnostic treatment was provided for youth and adults. A major advantage is that, based on screening for hurricane exposure and mental health, the transdiagnostic treatment called the Unified Protocol (Barlow et al, 2017; Ehrenreich-May, 2017) can target a range of emotional disorders including comorbidity in children and adults. The treatment was also tailored to address the relevant problems for each individual person. The second model discussed is the Puerto Rico Outreach Model in Schools- Esperanza (PROMISE), which is a multi-phase, trauma-focused intervention that was implemented post-Hurricane Maria in Puerto Rico. Orengo-Aguayo et al. (2019) discuss 22 lessons learned when providing specific interventions three weeks post-hurricane (e.g., Psychological First Aid; Brymer et al., 2006), six months post-hurricane (e.g., Skills for Psychological Recovery; Berkowitz et al., 2010) and one year post-hurricane (e.g., Trauma-Focused Cognitive Behavioral Therapy; Cohen, Mannarino, & Deblinger, 2017). Both Project REACH and PROMISE provide frameworks for future implementation and evaluation of intervention services post-disaster for children.

Understanding children and their families' hurricane preparedness and recovery must be viewed within one's culture and within a historical and current setting context. Burnette and colleagues (2019) provide a mixed-methods study with 208 participants from a coastal indigenous community to elucidate how federal recognition, coastal erosion, history of hurricanes and current hurricane experience, post trauma, interpersonal partner violence, discrimination and resilience shape children's and families' experiences of hurricanes. Billiot, Kwon, and Burnette (2019) and colleagues report on an ethnographic in-depth qualitative study with 19 tribal members to highlight the impact of repeated disasters, loss of land, climate change, pollution, and the interconnections with structural discrimination, connections with land, culture and well-being. Lewis, Rappe, Tierney and Albury (2019) discuss challenges related to hurricane preparedness for Hispanic/Latino families due to past state and federal policies and practices, and provide suggestions for practice and

intervention strategies. Burnette et al. (2019), Billiot et al. (2019), and Lewis et al. (2019) recognize the importance of understanding history, culture, environmental factors, access to resources and inequities as well as resilience when working with marginalized communities affected by hurricanes.

Children and families living in coastal regions are often used to preparing for hurricanes. However, when there are consecutive major hurricanes, the effects on the child may be even more devastating and one's childhood becomes defined by preparing for and recovering from natural disasters. Mohammad and Peek (2019) interviewed nine parent-child dyads who lived through three or more disasters, referred to as "exposure outliers," to examine the repeated disaster impact on the child and the household. These interviews remind us that after the initial hurricane exposure, secondary stressors and losses and limited available resources including financial and social resources can lead to problems "piling up." Children who are considered "exposure outliers" and who are from families with lower resources and less social connectedness are at-risk for more chronic trajectories. If climate change leads to more major hurricanes, there may be many more children and families in coastal areas who are hurricane "exposure outliers." We need to learn from these "outlier" parent-child dyads ways to lessen the impact, but given the catastrophic destruction and enormous toll on children, families and their communities, questions about the role of climate change in leading to more intense and frequent hurricanes must also be examined.

Integrating technology to advance hurricane preparedness and recovery can help children, families, communities and the interrelated systems. This special issue includes one example of how the use of technology through crowdfunding (i.e., GoFundMe.com requests post hurricane) is connected to multiple ecological contexts. Bixby Radu and McManus (2019) examined the webpages of 26 requests for financial assistance for people who were affected by Hurricane Florence which caused significant damage in North and South Carolina and was associated with 51 fatalities. The authors describe the "techno-subsystem" where individuals request financial assistance on their behalf, or in most cases, on behalf of others who were affected by the hurricane. They posit that crowdfunding operating at the techno-subsystem can create social connectedness with the person's various ecological systems to assist with disaster recovery. However, the benefits and utilization of the techno-subsystem post-disaster may vary based on family demographics and thus all may not benefit equally. More research in the use of crowdfunding, social media, information technology and other uses of technology to

improve hurricane preparedness and mobilize swift recovery is needed (Bixby Radu & McManus, 2019).

The helpers within the interconnected systems who assist children and families post-hurricanes are often impacted by the devastation of the storm and on-going stressors. In this special issue, Yuma, Powell, Scott, and Vinton (2019) present a theoretically-grounded, evidence-informed intervention called *Resilience and Coping for the Healthcare Community (RCHC)* to support healthcare and social service providers. RCHC has been evaluated and provided after numerous natural disasters and was recently revised to incorporate lessons learned and results, and additional research is underway. Similar to the intervention models for children, a tiered approach is provided based on community and individual needs. The two “Perspectives from the Field” (Allen, Daniels, Lee, Tasker, & Woffard, 2019; Prewitt & Richards, 2019) highlight the massive undertaking of service providers to meet the needs of children, families and communities. While work with others post-disaster can be rewarding it can also take a toll on the helper, especially when the helper is from the same community and has many of the “shared experiences” of those who lost everything, had someone close die and/or experienced numerous disruptions and on-going stressors. It is imperative that while advances for helping children and families with hurricane preparedness and recovery occur, we must find ways to help community providers with hurricane preparedness and recovery so that providers have trajectories of resilience in order to have the capacity and resources needed to serve others.

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