

Social Policy Report

Giving Child and Youth Development Knowledge Away

Volume XXI, Number I

2007

Katrina's Children: Social Policy Considerations for Children in Disasters

Joy D. Osofsky, Howard J. Osofsky, and William W. Harris

Abstract

Hurricane Katrina resulted in a disaster of proportions not previously known in the United States. The traumatic experiences of children and families during Hurricane Katrina, the flooding that resulted from the breach of the levees, the evacuation, and the aftermath are unprecedented. In responding to the enormous mental health needs of children post-Katrina, the Trauma Team of skilled mental health professionals from the Louisiana State University Health Sciences Center (LSUHSC) Department of Psychiatry provided crisis intervention and services. This paper discusses the work of the LSUHSC Trauma Team and provides a snapshot of the current mental health status of several thousand children and adolescents in post-Katrina New Orleans (not including those who were still displaced). Almost one half of the 4th to 12th grade students and over one quarter of younger children (based on parental report) met criteria for mental health services, based on the number and severity of their behavioral symptoms. Children who were separated from their parents or who had experienced previous trauma or loss were most likely to meet criteria. Ongoing risk relates to poverty, slowness of recovery, job loss, and family problems. Recommendations for rapid deployment of mental health services to children are provided, based on the Trauma Team's experiences. Educational efforts, school-based services, after-school care, resilience-enhancing programs, and community-building strategies are also discussed. Most important, a clearly articulated national disaster plan for children and families is urgently needed. This plan should be trauma-focused and based on developmental principles, research, and lessons learned from this and prior disasters. Knowledge gained from this disaster can aid in understanding and meeting the needs of children and families impacted by disasters, promoting resilience and self-efficacy, and providing evidence-based therapeutic services.

Social Policy Report

Editor

Lonnie Sherrod, Ph.D.
sherrod@fordham.edu

Associate Editor

Jeanne Brooks-Gunn, Ph.D.
brooks-gunn@columbia.edu

Director of SRCD Office for Policy and Communications

Mary Ann McCabe, Ph.D.
mmccabe@srcd.org

Managing Editor

Stephanie J. Church



GOVERNING COUNCIL

Aletha Huston	Jeanne Brooks-Gunn
Arnold Sameroff	Greg J. Duncan
Ross D. Parke	John W. Hagen
Judith G. Smetana	Suniya Luthar
Ronald G. Barr	Ann Masten
Marc H. Bornstein	Robert B. McCall
Alysia Blandon	Ellen E. Pinderhughes
	J. Steven Reznick

POLICY AND COMMUNICATIONS COMMITTEE

Marilou Hyson	John W. Hagen
Martha Zazlow	Bonnie Leadbeater
Cheryl Boyce	Karlen Lyons-Ruth
Jeanne Brooks-Gunn	Mary Ann McCabe
Kristen Bub	Cybele Raver
Greg J. Duncan	Anthony Salandy
Dale Farran	Lonnie Sherrod
Barbara H. Fiese	

PUBLICATIONS COMMITTEE

Rachel Keen	John W. Hagen
Mary Cwik	Anne D. Pick
Sandra Graham	J. Steven Reznick
Joan Grusec	Gene Sackett
Aletha Huston	Judith G. Smetana
Brenda Jones Harden	

From the Editor

Certainly the destruction caused by Hurricane Katrina and the flooding resulting from breakage of the levees in New Orleans was one of the greatest disasters and human tragedies in generations. As developmental scientists, it behooves us to consider how the consequences of such a disaster may differentially impact children. Joy and Howard Osofsky and William Harris do just that in the current issue of the *SPR*. There has been a lot of public attention to relief efforts but few have focused specifically on children and families. The one exception that I know is the fall issue of APA's Division 37 newsletter, *The Advocate*, which also addresses Katrina.

The authors begin by documenting the human dimensions of this tragedy. It is difficult to fathom what a devastating event this disaster was. Anyone who has since visited New Orleans can attest to its magnitude and to the toll on human displacement and suffering. What is especially important when addressing implications for children are the policy recommendations that are specific to children of different ages. That is one main goal of the current issue of the *SPR*.

This article provides statistics on the number of children of different ages showing behavioral symptoms of trauma that required some type of mental health services. This number varies from one quarter to one half of children! Obviously the demand for services and the drain on available resources was substantial. The authors argue that this country needs a national disaster plan that includes provisions to meet the needs of children and families. This disaster provides considerable information on lessons learned. For example, response to such an event requires a multi-pronged and multi-level approach. Education on preparedness is one piece, as is capacity for response from schools, after-school programs, and community organizations. A national plan also needs to be based on what we know from research about the development of children and the impact of events such as separation from parents.

The article also makes clear that risk factors related to poverty and the disadvantaged lives of many who experienced this disaster made the impact far worse than might otherwise have been the case. In fact, the aftermath of Katrina is an astounding example of what happens when a nation and a community allow poverty and disadvantage to fester unchecked. I would argue that Katrina should provide a much wider wake-up call than the need for a national disaster plan, although of course that is also needed. The consequences of poverty and inequality are pervasive and affect us all, not just the victims. This point could not have been made more effectively than by the aftermath of Katrina. Now, almost a year and a half later, we as a nation are still trying to cope with the consequences. Yes, Katrina demonstrates convincingly the need for a national disaster plan, a plan that attends to developmental needs. It also demonstrates the need to work harder as a nation to reduce poverty and disadvantage, especially in children and families.

Lonnie Sherrod, Ph.D., Editor
Fordham University

Katrina's Children: Social Policy Considerations for Children in Disasters*

**Joy D. Osofsky and Howard J. Osofsky,
Louisiana State University
Health Sciences Center**

**William W. Harris, Children's Research and
Education Institute**

Hurricane Katrina resulted in a disaster of proportions not previously known in the United States. The winds and flooding resulted in the evacuation and destruction of 80% of New Orleans. In neighboring St. Bernard Parish, 95% of the homes, schools, and businesses were destroyed by the flooding. Hurricane Katrina displaced 650,000 people from their homes in Louisiana alone and many more were displaced from Mississippi and the Gulf Coast. Additional children and families in Louisiana and Texas were affected by Hurricane Rita in subsequent weeks. Not only were homes destroyed by the wind and flooding, but 875 schools in Louisiana were also damaged and 40 were totally destroyed. The experiences of children and families during Hurricane Katrina, the flooding that resulted from the breach of the levees, the evacuation, and the aftermath are unprecedented. One major lesson learned is that our country has no clear disaster plan for children.

Think for a moment of what it was like for the children, many of whom had previously experienced hurricanes. As with past hurricanes, if families evacuated, they left their homes with a day or two of clothes and supplies—obviously inadequate for this disaster. If, consistent with prior experience, they did not leave, they experienced a terrible nightmare—overwhelming flooding, witnessing death, seeing their homes and community destroyed, and being trapped in shelters of last resort (the Superdome and New Orleans Conven-

tion Center) in stifling heat, without communication, electricity, and adequate sewerage and food and water for days. Family members were separated from one another, often being put on buses or planes alone and having no idea where they were going. Even one fifth of children under the age of 10 were separated from their parents (as estimated from our survey of post-Katrina children in New Orleans).

What followed the hurricane, for both children who left New Orleans and those who did not, was living in overcrowded homes and trailers, moving frequently, being separated from relatives and friends (and often not knowing where they were), having unemployed and distressed caregivers, and having inadequate money, clothing, and food. Essentially, children were torn away from everything familiar in their lives, from support and stability. Both during the crisis and the slow and limited recovery, children learned that many of the adults around them had no clear plan for achieving safety, stability, recovery, rebuilding, and re-establishing all that was familiar. The traumatic events experienced by these children are unprecedented in this country.

Children's Plight in New Orleans Before and After Katrina

Children in Louisiana were not faring well even before the hurricane. Louisiana ranked 49th in the United States (and Mississippi ranked 50th) of the 50 states on measures of child well-being (Annie E. Casey Foundation, 2005; Kids Count). Within the city of New Orleans, 30% of children were living in poverty, including 43% of the children under 5 years of age in 2000 (US Census Report, 2000). Two thirds of families living below the poverty level were headed by a single mother. Children who live in poor and in single-parent families have experienced more trauma than children whose families are more advantaged, placing them at risk for even more negative outcomes.

Following the landfall of Hurricane Katrina on August 29, 2005, and the subsequent flooding of nearly 80% of the city, the demographic and social characteristics of the city changed. Recent statistics from the U.S. Census Bureau (Lyman, 2006) indicate that the population of the New Orleans Metropolitan area dropped from 1,190,615 people in August 2005 to 723,830 in December 2005. In December 2005, it

*Appreciation is expressed to the Trauma Team staff in the Department of Psychiatry at Louisiana State University Health Sciences Center in New Orleans and to Anthony Speier, Ph.D., Disaster Mental Health Director for the Department of Health and Hospital's Office of Mental Health and Program Director for Louisiana Spirit. Corresponding author: Joy D. Osofsky, Ph.D., Professor of Pediatrics and Psychiatry, Louisiana State University Health Sciences Center, 719 Camp Street, New Orleans, LA 70130; josofs@lsuhsc.edu.

was estimated that approximately 181,400 individuals had returned and were living in Orleans Parish (City of New Orleans Emergency Operations Center, 2006).

We still are not sure how many children are in New Orleans or how many are returning (although estimates should become more accurate as 2006-2007 school enrollment figures are available). It was initially expected that there would be approximately 34,000 children in New Orleans Public Schools by January 2007. This number included students in the Recovery District Schools, the 102 underperforming schools in New Orleans pre-Katrina over which the State Department of Education assumed control in 2005. It did not include students in charter schools, parochial schools, or independent schools. More recent estimates indicate that this figure may be an overestimation; current data suggest approximately 25,000 students will have enrolled in public schools for the fall semester with some increase in numbers expected prior to the spring semester. Providing classrooms, teachers, and services for even the 25,000 is proving to be a challenge.

The child care situation is similar. It is critical to provide support for young children and their parents and to allow parents to be able to go to work to support their families. Pre-Katrina, 271 child care centers were operating in New Orleans, including Head Start and Early Head Start. As of July 2006, 58 child care centers were open, one fifth of the pre-Katrina total. Few are providing extended hours for working parents. Pre-Katrina, 2,618 children ages three and four and 204 toddlers were enrolled in 32 Head Start and Early Head Start Centers. Currently, only 700 children, ages three and four, and 72 toddlers are enrolled in nine Head Start and Early Head Start Centers (again, about one fifth to one fourth of the pre-Katrina enrollment; in St. Tammany Parish, just outside of New Orleans, without additional funding, enrollment in Head Start following the hurricane was about 50% higher due to the number of displaced children). Discussions are underway to establish addi-

tional Head Start and Early Head Start centers in New Orleans as part of a unified, comprehensive school plan. Replacement of over 200 child care centers is a huge task.

The need for additional schools and child care centers is paralleled in the housing sector. Children in New Orleans are living in crowded apartments and houses, and many are still in trailers. Due to the extent of the devastation and slowness of recovery, many children are still displaced and unable to return.

The Experiences of the Children of Katrina

The experiences of the children and youth of New Orleans have been documented through our work in the field. The Trauma Team from the Louisiana State University Health Sciences Center (LSUHSC) Department of Psychiatry provided crisis intervention and services immediately through the National Child Traumatic Stress Network Center, the Louisiana Rural Trauma Services Center, and faculty in the department skilled in working with children, youth, and families who have experienced trauma. Reports from their experiences are presented, as well as the re-

The experiences of children and families during Hurricane Katrina, the flooding that resulted from the breach of the levees, the evacuation, and the aftermath are unprecedented. One major lesson learned is that our country has no clear disaster plan for children.

sults of a survey.

Reports From the Trauma Team in the Field

Our experiences with children and parents following Katrina as part of a Trauma Team bring the situation into focus. They also may help in designing a national plan for responding to children and families in the wake of future disasters. In the immediate aftermath, many children who had been displaced appeared dazed or listless. Younger children, especially, demonstrated regressed, clingy, and anxious behaviors. Some children (even older children) whose homes had been destroyed appeared to use magical thinking to fill in gaps in understanding, repeatedly telling us and parents "It will be all right. We can go home and sweep up the floor and it will be ok." Older children worried about themselves, their futures, their friends, parents, and other family members (for example, whether they would ever see their grandma again, whose home they

went to for every Sunday supper).

First responder parents—who had experienced so much themselves and had lost their homes, and did not know the whereabouts or safety of their family members—described conflicted loyalties between their jobs and family responsibilities. They even worried about how to provide funds to family members when they were finally paid. A mother of a teenager, who was quadriplegic from a previous accident fell to her knees praising the Lord when she recognized us and pleaded for help from us and the police to go back to her flooded home for her son’s mechanized wheelchair. He was currently bedridden in a relative’s home and could not be moved or obtain the medical care that he needed. A child, initially described as doing well, would not go out or go to school; he described how guilty he felt now, that he pleaded with his father to evacuate—and then his father was killed in an accident during the evacuation. A disorganized, aggressive 5-year-old child had been separated from two loving foster parents and was not able to be reunited with them. We know how important it is for resilience, especially for younger children, to have the consistent support and protection of parents and caregivers.

In the fall and early spring of 2006, as children returned to the New Orleans Metropolitan area, some described being called “trailer trash” when they enrolled in other schools and were teased about not having a permanent address, home, or adequate clothes. A five-year-old, whose protective and well-meaning older brother described him as doing fine, sadly told us that the children in the new school and community did not like him. One bright 13-year-old told us about needing to be brave, but that she was not certain she could be that way much longer. Her family had lost their home and all possessions; her parents could not live together; and her father had no job. She frequently cried but tried to do it when she was alone.

In December 2005, just before Christmas, a griev-

ing grandparent wanted to know whether to take her young grandchild with her—she needed to identify the child’s dead mother and see their destroyed home. Trembling and experiencing suicidal thoughts, she worried about whether she could be strong enough for her grandchild when she was so shaken that she could barely stand. Parents and children described their panic at evacuation sites, hot and exhausted, crowds milling about, some separated from one another, and frantic about when, where, and if they would be reunited.

Children and adolescents in crowded quarters, many in trailers, experienced parents who were fighting or no longer wanted to live together. Children who had lived in inner city neighborhoods in New Orleans, often in an environment of violence and drugs, lost even those routines and had no place to live. Children and adolescents were living with friends and relatives because devoted parents, who could not return, wanted them to be in schools with their friends. Children, who had temporary declines in school performance due to trauma and displacement, now feared being labeled as dumb because of needing remediation after having been in several schools since their displacement. High school students, who lost their senior year, worried that they had no future. They had not completed student loan forms for college before the hurricane; their academic performance had declined; they felt ill prepared for examinations and applications; and they worried about whether they would be able to go to the college they desired. They worried about the needs of their parents and whether they should even be leaving home to go off to college. They also worried about financial issues related to college and whether the part-time job they counted on to help support them would still be available.

A few examples of the remarkable resilience of children and families to cope in the face of adversity should also be noted. We think of a young father, who in comforting his two-year-old bewildered son explained the loss of their home as follows: “Remember

Some children (even older children) whose homes had been destroyed appeared to use magical thinking to fill in gaps in understanding, repeatedly telling us and parents “It will be all right. We can go home and sweep up the floor and it will be ok.”

when your toy broke last year? Well, now, it is a little like that as our house is broken and can't be repaired." There was also the first responder, who initially tearfully pleaded, "Make it go away." She talked sadly about how much she missed her flooded home and being able to take care of her children, even missing doing the washing and ironing. She then drew on the words of Martin Luther King and her religious grounding to move forward and bring her family together. High school seniors wanted to graduate with their classmates even if their school could not reopen. Students sufficiently symptomatic to qualify for mental health services frequently described their first concern as "how can I rebuild my community?" Adolescents in our Youth Leadership Program, carried out collaboratively with St. Bernard Parish Unified School in the summer of 2006, developed supportive programs and services for newly returning students and younger children.

Survey of Children and Adolescents in New Orleans Post-Katrina

In responding to the enormous needs of children in the aftermath of Hurricane Katrina, the Trauma Team of skilled mental health professionals from LSUHSC Department of Psychiatry provided crisis intervention and services immediately through our National Child Traumatic Stress Network Center, the Louisiana Rural Trauma Services Center, and faculty in the department skilled in working with children, adolescents, and families following trauma. The goal was to do what we could to help with the short-term needs for stability and re-establishing safety, routines, and a sense of normalcy in a now abnormal environment. Mental health professionals worked in unconventional ways (outside of offices doing whatever was needed) with families and children on the streets of the Metropolitan New Orleans area, in shelters, and on the cruise ships that were docked temporarily at Julia Street Harbor. The cruise ships housed first responders, 80% of whom had lost their homes but still had to work in New Orleans. Quickly established makeshift offices and playrooms

were put in place on the cruise ships. Working with SAMHSA volunteers and with Louisiana Spirit Crisis Counselors, much was accomplished in the immediate aftermath by providing psychological first aid, a basic intervention strategy designed to reduce initial distress caused by traumatic events and foster short- and long-term adaptive functioning (NCTSN, 2005), and other crisis intervention services. The LSUHSC Department of Psychiatry also provided more intensive evidence-based screening, evaluation, and therapeutic services as needed. More extensive and comprehensive resilience building interventions and therapeutic services were planned and implemented to prevent serious long-term problems.

The LSUHSC Department of Psychiatry faculty used the National Child Traumatic Stress Network Screening Instrument, which was modified collaboratively with reopening schools to learn more about experiences and reactions of the returning children and adolescents to the New Orleans Metropolitan area. The initial research included a cross section of all children affected, primarily those returning to the most heavily impacted areas. It was designed to help in the development of responses to needs, including resilience building and therapeutic services. The assessment, which allowed children and adolescents to describe their experiences during and after the hurricane and to report their symptoms, was completed by 2192 children, all of whom had been displaced and were currently in 4th through 12th grades in Orleans Parish, St. Bernard Parish (almost completely destroyed by the hurricane), and St. John the Baptist Parish. The sample was 48% Caucasian, 42% African American, and 4% Hispanic, with the remainder representing other ethnic and racial groups. The majority of the children (56%) were living with both parents; 36% were living with either mother or father.

One third of these 4th through 12th grade students said that they had been separated from their caregivers during or after the hurricane. The children and adolescents reported that they attended as many

First responder parents who had experienced so much themselves, had lost their homes, and did not know the whereabouts or safety of their family members, described conflicted loyalties between their jobs and family responsibilities.

as nine schools since the hurricane (with the average being two schools). Almost all (95%) saw damage to their homes and neighborhoods; 75% reported losing personal belongings. In addition, one third reported being separated from a pet. One fifth reported that a family member had been injured and 15% reported that a family member had been killed. Almost one half said that one of their parents was unemployed as a result of Hurricane Katrina.

About one half of the children and adolescents met the cut-off for referral for mental health services. Common symptoms were depression, loneliness (many missed friends), sadness, and anger (one third of the respondents). Similar percentages of children reported feeling upset when thinking about Hurricane Katrina and tried not to think about it, said that nothing was fun anymore, and that they had difficulty concentrating. Twenty-seven percent reported increased headaches or stomachaches. Almost one half worried about what might happen; with many living in devastated areas and with hurricane season approaching, these worries were not surprising.

Children who have experienced previous trauma or loss are at higher risk for mental health problems than those who have not experienced trauma or loss (Bowlby, 1973; Loar, Wolmer, Mayes et al, 1997; Osofsky, 2004; Pynoos, 1993; Pynoos, Steinberg, & Goenjian, 1996; Voget & Venberg, 1993). Thirty-seven percent of the children and youth in New Orleans reported previous trauma or loss. (This figure is likely to be an underestimate because many of the children and families who were still displaced and did not have the resources to return to New Orleans may represent an even higher risk group.) Children reported trauma symptoms consistent with depression and posttraumatic stress disorder (PTSD). Symptoms were higher

among children separated from caregivers during the evacuation and displacement.

Parent reports were obtained for 787 children in Head Start, pre-kindergarten, and grades 1 through 3.

These children were unable to fill out the screener themselves so it was modified to have their parents complete the forms. Parents reported that their young children attended as many as four schools or centers because of the displacement, the

average being two. Many lived in at least one shelter and some were in many shelters. About 1 in 10 were still living in shelters half a year after the hurricane.

When children returned, they had to live in trailers, tents, or crowded quarters with relatives or friends. One fifth of the parents reported that their young children were separated from them during the storm. About 1 in 10 of

the young children witnessed the injury of a family member. A previous trauma or loss was described for the child by 16% of the parents (this figure is likely an underestimate).

Recognizing that younger children may have fewer symptoms, and that parents consistently tend to underreport their children's trauma exposure compared with direct child reports, it is striking that 27% of the parent reports indicated their

children met the cut-off qualifying for mental health services. The primary behaviors reported, quite understandably, were clinginess and separation anxiety. Children exhibited both PTSD symptoms and depressive symptoms. Over one third of the parents reported that they would like their child to speak to a counselor. Parents understood that even young children are affected by trauma; a high percentage of parents requesting help may also relate to their own stresses and desire to talk to a counselor.

Students sufficiently symptomatic to qualify for mental health services frequently described their first concern as "how can I rebuild my community?"

Children with previous trauma or loss, or an earlier history of problems, are at higher risk to show symptoms of traumatic stress, depression, anxiety, or other mental health problems.

Common symptoms reported in over 30% of the children were depression, loneliness (many missed friends), sadness, and anger.

While this data provides a snapshot of the mental health status of returning children to the greater New Orleans area, it does not tell us how displaced children are doing in their new environments. Some families would like to return but continue to have economic difficulties and live in crowded environments. Children living in these difficult situations miss their friends and familiar environment and may be doing worse. In contrast, others, if their families have relocated successfully, may be adapting well and doing better.

One year after the disaster, it is clear that families and communities will never be the same and that culturally sensitive prevention and intervention efforts are needed to support children of all ages and their caregivers. Without developmentally appropriate, trauma-focused resilience building support and therapeutic services, both the short- and long-term emotional and social well-being of children may be in jeopardy.

Unfortunately, disaster emergency agencies, while well meaning, still fail to understand and, at times, respond appropriately to the impact of the trauma on children and families. For example, because of limitations of the Stafford Act, FEMA specifies that paraprofessionals—not mental health professionals—provide needed trauma-informed services. This grossly underestimates the magnitude of the mental health problems resulting from such a devastating hurricane and the services needed. Another example relates to the crowded trailer communities that are being put in place without adequate community space to congregate, play areas for children, and convenient access to services such as grocery stores and schools. Although the intent is for these living arrangements to be temporary, the reality is that for many families, trailers will be their homes for an extended period of time because of the extensive devastation caused by the massive hurricane and flooding. The trailers are small and cannot withstand major thunderstorms. Families, already stressed, have little personal space. There are already reports of domestic violence, adolescent fights, and sexual assaults in the trailer parks. What is still continuing for many families is the oppressive poverty, lack of financial and other resources, and lack of jobs.

About one half of the children and adolescents met the cut-off for referral for mental health services.

Responses to Disaster and Trauma

What is known about how children and youth respond to disasters and trauma? First, developmentally specific responses to disasters and trauma vary for children of different ages. Younger children commonly express new fears, separation anxiety, clinginess, and show regressive behaviors. School age children frequently describe difficulty concentrating or having fun. Learning and behavioral problems may be noted in school with aggressive behaviors and withdrawal frequently reported. Adolescents are at particularly high risk as their reactions can include increased risk-taking behaviors such as fighting, substance and alcohol abuse, heightened sexual activity, and suicidal thoughts.

Second, children appear more vulnerable if they have experienced previous trauma, loss, or mental health difficulties.

Third, children with greater proximity to the event and those who experience direct traumatic impact are more likely to demonstrate a greater number of symptoms and distress. Fourth, the types of worries reported include those centering on safety and security, loss of friends, adjustment to new schools, missing relatives who used to live nearby, and residence in new communities.

Fifth, if parents or caregivers are not doing well due to the circumstances of their own lives, depression, other mental disorders, or prior exposure to violence, children and adolescents may experience increased distress and symptoms (even though they sometimes mask their stress). With stress, depression, anxiety, and other problems, parents may be less emotionally available to the children (Beardslee, Keller, Lvaori, Klerman, Dorer, & Samuelson, 1988; Shalev, Freedman, Peri et al., 1998; Silverstein, Augustyn, Cabral, & Zuckerman, 2006). Parents have reported that because of what they have experienced, they do not have energy for their children. It is crucial that support and services be provided for parents and other adults in children's lives, such as teachers, to build resilience in children.

Data from a number of studies demonstrate higher incidences of emotional, behavioral, developmental,

and academic difficulties following trauma exposure (Cicchetti & Toth, 1997; DeBellis & Van Dillen, 2005; Eckenrode, Laird, & Doris, 1993; Garbarino, Eckenrode, & Powers, 1997; Fullerton & Ursano, 2005; Osofsky, 1997; 1999; 2004; Molicca, Cardozo, Osofsky et al., 2004; Pynoos, Steinberg, & Piacentina, 1999; Goenjian, Walling, Steinberg et al., 2005; Pfefferbaum, Nizon, & Krug, 1999a; 1999b). The literature on complex trauma, including natural and manmade disasters, terrorist attacks, wars, and non-war violence, consistently describes immediate needs and longer-term reactions and documents a range of outcomes that include expectable stress reactions and elevated behavioral and mental health difficulties. Surveys of 8,226 children and adolescents carried out six months after 9/11 focused national attention on the impact of trauma exposure on children. Data showed considerably elevated rates of mental health problems, including PTSD, major depression, separation anxiety, agoraphobia, conduct disorder, and alcohol use when compared with nationally established prevalence figures (Hoven, Duarte, & Mandell, 2003; Schaffer, Fisher, Dulkan et al., 1996). The New York Survey data further indicated that nearly two thirds of children had experienced exposure to trauma prior to 9/11 and that such exposure contributed to current symptoms. In the disaster literature, the level of symptomatology is associated with the presence of physical injury, fear of death, and property loss (Assanangkornchai & Tangboonngam, 2004; Briere & Elliott, 2000). Increased symptoms are associated with degree of personal and economic loss, proximity to the event, displacement, a lessened sense of self efficacy, psychosocial resource loss, feelings of being out of control, lack of knowledge about coping with the crisis, and a relative lack of family and community support. This work is consistent with the assumption of Hobfoll's stress theory (1989), positing that a real or potential loss of resources is a major stressor contributing to negative outcomes.

The limited literature on reactions of children after hurricanes and flooding is particularly relevant to understand the aftermath of Hurricanes Katrina and Rita for children. Previous exposure to trauma predicts increased symptoms following a hurricane (Sutker, Corrigan, Sundgaard-Riise et al., 2002; Smith & Feedy, 2000). Living in shelters and under stress for an extended period of time further predicts

increased emotional difficulties (Gittelman, 2003). Higher incidences of PTSD, major depressive disorder, and symptoms consistent with both disorders are seen following hurricanes and flooding (North, Kawasaki, Spitznagel et al., 2004; Norris, Murphy, Baker et al., 2004). Common symptoms of anxiety, sadness, numbness, anger, disorientation, grief, and overwhelming loss of control also are evident (Shelby & Tredinnick, 1995). This literature, especially related to the impact on children, provides a more complete perspective on factors that contribute to resilience and, alternatively, those that may lead to more symptomatic and problematic reactions.

La Greca, Silverman, and Vernberg et al. (1996) and Vernberg, La Greca, and Silverman et al. (1996) used an integrative conceptual model to examine the emergence of PTSD symptoms in 568 elementary school children three months after Hurricane Andrew and also examined symptoms of posttraumatic stress in 3rd through 5th grade children during the school year after the hurricane (assessing 442 children at 3, 7, and 10 months post-disaster). They found, first, that this conceptual model may be helpful in organizing research and intervention efforts post-disaster and, second, that although symptoms of PTSD declined over time, substantial symptomatology was evident 10 months after the disaster. Bokszczanin (2002) examined the impact of the 1997 flood, which was the most devastating natural disaster in Poland, on 335 students ages 11 to 20. The research was done 20 months following the flood to determine the longer-term effects. The results from the questionnaires concerning their experiences and reactions indicated that extent of exposure to the disaster was a strong predictor of symptoms of PTSD, depression, and feelings of loneliness. More negative effects were found in those who had experienced great danger or losses. Russoniello, Skalko, and O'Brien et al. (2002) examined the impact of Hurricane Floyd. In their study of 150 fourth grade students six months following the hurricane, they found more symptoms of posttraumatic stress in children who were directly impacted and displaced by the flooding. Although many of these children came from distressed environments with extreme poverty, the impact of previous trauma experienced was not measured in this study. Chemtob, Nakashimo, and Hamada (2002) used school-based community-wide

Commentary
James Garbarino, Loyola University Chicago

Osofsky and her colleagues have seized the opportunity presented by the awful “experiment of nature” that was Hurricane Katrina to explore the traumatic impact of catastrophe. We can all thank the Osofsky group for this effort. Reading the report reminded me of an earlier time when I found her group useful in sorting out issues in what might be called “developmental sociopathology” (as a play on “developmental psychopathology,” with the change from “psycho” to “socio” indicating the opportunity to learn about how normal social settings function from examining the developmental consequences of abnormal social settings).

Back in the late 1980s I traveled to Thailand to visit Cambodian refugee camps, camps that were created to deal with the displacement of Cambodians during the barbaric Khmer Rouge regime—which was responsible for the death of nearly one in five Cambodians during a period of less than a decade. I was struck by the stressful nature of the social environment in the camps—owing in part to the high levels of trauma among parents who had escaped from Cambodia. A recent survey of the camp’s mothers had revealed that 50% were seriously depressed. Why would they not be, with the unstable living arrangements, the legacy of trauma among them and their children, the disappearance of men to either go back into Cambodia to fight or to seek economic advancement elsewhere, and the highest level of violence directed at women? Such a high level of maternal depression meant, of course, as it usually does, serious risk of neglect and abuse to children.

And indeed children were suffering from the psychological unavailability of their mothers: they were prone to drowning in irrigation ditches, being burned in fires, getting run over by trucks operating in the camps, and being injured playing with guns and military ordnance. I had a strong sense of *deja vu* as I walked through the camps that stayed with me as I traveled back home. Upon my arrival I was searching for a framework within which to understand how this high-stress environment affected the long-term development of kids growing up there when I returned to the United States. The proverbial light bulb went off when I read a report from Joy Osofsky’s group about maternal depression in New Orleans public housing projects. The key finding was that 50% of the mothers were seriously depressed. I realized that my own *deja vu* derived from my professional experiences in Chicago public housing projects. The conceptual juxtaposition of these two socially toxic environments was made possible by Osofsky’s work, and explicating the parallels between “war zones at home” and “war zones abroad” became part of my intellectual mission. The new work on the traumatic effects of Hurricane Katrina bring new focus to those same comparative concerns that motivated me years ago.

Much was made of American shock at the thought that we were witnessing displaced persons and internal refugees in the wake of Hurricane Katrina. Getting beyond the narcissistic wound to America’s sense of superiority, the phenomena illuminated by Osofsky’s work once again offers us an opportunity to undertake a comparative examination of the role of poverty and racism in the playing out of kids’ lives, another example of developmental sociopathology at work. For in my own international work I have seen these same influences at work in war zones and social catastrophes around the world. Exploring the how and why will occupy us for years to come. But having this work by Joy Osofsky and her group advances that work in important ways, and once again I am grateful to her for her insightful leadership in providing it.

screening of 4258 2nd through 6th grade students to assess the impact of Hurricane Iniki two years after the storm. They reported persistent posttraumatic symptoms as well as beneficial effects of structured individual and group treatments.

Resilience and Recovery After Trauma

Not all children and youth experience distress, symptoms, and worries; even those who do may experience a reduction in them, based on time since the event and support from parents and other caring adults. Programs are needed to foster resilience and recovery. For adolescents, being a part of the recovery, building support in communities, and having responsibility for outcomes is very important. School age children depend not only on parents but peers to help them gain a sense of normalcy. Younger children are in some ways more protected as they may have a limited understanding of the scope of the disaster; however, they can also be more vulnerable as they depend on adults and often reflect their securities and insecurities.

Despite the difficulties, most children and adolescents cope successfully and demonstrate adaptive skills following traumatic exposure. Masten describes the “ordinary magic” of resilience (Masten, 2001) and Benight and Bandura (2004) refer to such responses as defining “self-efficacy.” Strategies to enhance resilience and positive coping have been described by these and other authors (Norris, Friedman & Watson, 2002; Wadsworth, Gudmundsen, Raviv et al, 2004).

Lack of Response to the Katrina Disaster

Why were so many children and families in the United States left so vulnerable in the wake of a major hurricane? Why did this happen? Several conditions are relevant—one that relates to the approach of our country to disaster planning, another to racism and discrimination, and yet a third to the situation in New Orleans and Louisiana.

First, our country does not have a clear, articulated plan for children and families that can be implemented when a major disaster strikes. In planning for communities and special needs populations, the developmental needs of children receive little focus. Only recently has more attention been paid to children’s developmental needs in first responder training and in psychological first aid (NCTSN, 2005).

Second, the history of New Orleans is relevant. Hurricane Katrina did not discriminate, as she devastated poor, middle class, and upper class neighborhoods in her path. The images that the world viewed in horror were of people neglected, suffering, and dying in and around the Convention Center, most of whom were poor and African American. While culturally rich, New Orleans is a predominantly poor community, with a majority of its citizens African American.

The history of racism and poverty in New Orleans and the Gulf South and the apparent tolerance of these conditions nationally is part of the story. Until relatively recently, segregation and overt discrimination were experienced by many African Americans in the community. With court decisions outlawing segregation and many forms of discrimination, more mobile citizens were able to leave inner cities for better neighborhoods, homes, and schools. As a well-known African American leader in New Orleans pointed out, people leave not because they have forgotten the injustices they experienced in growing up, but because they remember them every day. Yet, while the opportunities were just and long overdue, for those remaining in impoverished inner city neighborhoods, supports and options were, if anything, even more limited. These individuals were more likely to seek shelter at the Superdome and Convention Center. Referring to racism in New Orleans, Brett Anderson, food critic for the *Times Picayune*, stated, “It’s an awful legacy, and it’s left wounds that haven’t healed, but it is—like the receding coastline that has made the city so vulnerable, and the Corps of Engineer’s flawed levee system—a problem whose roots extend deep into the country’s history, not just the city’s. Yet, people (nationally) didn’t see their own country when they saw those images” (*New York Times*, September 4, 2006, article by David Carr); it was too alien to them.

Third, New Orleans citizens, like many others in hurricane-prone areas such as Florida, do not regularly evacuate for hurricanes. There are many false alarms and people feel safe in their homes with enough water, flashlights, and sometimes generators. Even with a mandatory evacuation, some prefer to ride it out. As noted, others, due to poverty, illness, and lack of transportation, cannot evacuate if they do not have money to buy a ticket or gas, or find some other way to evacuate. Many citizens evacuate to a shelter of last

Commentary

Christina W. Hoven and Judith Wicks

Based on Hurricane Katrina, the *Social Policy Report* by Osofsky, Osofsky, and Harris, delineates important policy gaps addressing the psychological impact of disasters on children, identifying a coherent, developmentally appropriate approach for policy. The authors also make a substantial contribution to the disaster planning discourse by outlining programs based on children's developmental levels and suggest a number of approaches, including the training of all levels of first responders and service providers in applying developmentally grounded approaches to children following traumatic events.

Hurricane Katrina provided the most severe, direct disaster exposure to the largest number of children at any single time in American history. However, preliminary research findings regarding psychological sequelae in the exposed are consistent with other major disasters, like the Oklahoma City bombing in 1995 (Pfefferbaum et al., 2003) and the 2001 attack on the World Trade Center (Hoven et al., 2005). Yet, in spite of accumulated evidence over these 10 years, the authors demonstrate that the United States has lacked and continues to lack national, state, or local disaster plans adequate to meet the child mental health consequences of Hurricane Katrina. Unfortunately, such important policies have still not emerged. Thus, this paper now joins other calls for corrective post-disaster action based on the development of sound child-focused policy (Hoven 2002).

As in other post-disaster assessments, family factors such as death of a family member, injury to a family member, and separation from a family member were also found to be associated with heightened risk for mental health problems following Hurricane Katrina. As the authors note, responding to disaster-exposed children requires designing interventions that meet their particular needs. Young children are cognitively and physically vulnerable. Children may neither understand the extent of risk nor have motor skills enabling escape from a hazardous situation. Most children are dependent on their parents, but adolescents have slightly higher levels of independence and can be called upon to share adult responsibilities in the home by caring for siblings, preparing meals, doing general housework, or caring for sick family members. Thus, focusing on the well-being of entire families constitutes an appropriate post-disaster child mental health policy.

We particularly endorse the authors' recommendation for additional research related to the psychological effects of disaster and support the suggestion that such research can contribute to better prepare for disasters and their aftermath. In this regard, we believe a key area of disaster research, currently absent, is the collection of pre- and post-disaster data to help drive policy and to refine the focus of post-disaster interventions. Due to the current lack of pre-disaster information, post-9/11 and post-Katrina data have been sorely deficient in helping us understand specific disorders, especially their developmental pathways. Longitudinal research with representative samples, examining the full range of different types of disasters (e.g., flood, hurricane, tornado, terrorism, fire) is needed. The authors' laudable advocacy of developmentally appropriate disaster interventions for children remains incomplete since pre-disaster levels of psychopathology are seldom available, precluding comparative assessment of post-disaster status. Lacking knowledge of pre-disaster vulnerabilities significantly compromises successful post-disaster policy and intervention. Furthermore, our understanding of possible mediating effects of commonplace disaster preparedness, including knowledge, awareness, and risk assessment is currently based largely on conjecture. Though called for in recent literature, pre- and post-disaster assessments on the same individuals, over time, addressing these important phenomena, have not been undertaken. This woeful lack of information will continue to limit the utility of any new post-disaster child mental health policy, even one designed to be developmentally appropriate, because without such information, policy will necessarily be incomplete.

References

- Hoven, C. W. (2002). *Testimony to United States Senate Field Hearing (Chair, Hillary Rodham Clinton) Senate Health, ELP Committee Regarding the Unmet Mental Health Needs of New York City Public School Children as a Result of the September 11th Attacks on the World Trade Center: NYC, June 10, 2002*. (Rep. No. Senate Hearing No. 107-540, Document No. 552-070-29-035-4). New York: U.S. Government Printing Office.
- Hoven, C. W., Duarte, C. S., Lucas, C. P., Wu, P., Mandell, D. J. et al. (2005). Psychopathology among New York City public school children six months after September 11. *Archives of General Psychiatry*, 62, 545-552.
- Pfefferbaum, B., Gurwitsch, R. H., McDonald, N. B., Leftwich, M. J., Sconzo, G. M. et al. (2000a). Posttraumatic stress among young children after the death of a friend or acquaintance in a terrorist bombing. *Psychiatric Services*, 51, 386-388.

resort as happened for many New Orleans citizens who went to the Superdome. When Hurricane Katrina hit and breached the levees, known by the Army Corps of Engineers to be inadequate for a Category 3 Hurricane, no plan was in place to prepare and protect the city. This hurricane blatantly and boldly showed the years of neglect and total lack of planning at all levels—governmental, institutional, community (both official and unofficial)—that contributed to the worst disaster in our country’s history. Despite this failure at all levels, one must be careful not to merely assign blame and not focus sufficiently on lessons that can be learned from this terrible disaster.

While neither local, state, nor national officials prepared for or responded adequately to the disaster caused by Hurricane Katrina, this is the first time in the United States that a major city and region has experienced the immense devastation that resulted from Hurricane Katrina. Leadership failures at all levels are contributing to the continuing slow and disorganized response in developing a plan for the city and region, helping children and families restore their homes and lives, and providing greater environmental safety and a secure levee system that meets international standards. We must move forward constructively to prepare better for the next time so that local, state, and national officials can reach out with available knowledge to help children and families.

Recommendations

National Disaster Plan for Children, Youth, and Families

Our experiences following Hurricane Katrina strongly support the importance of our country having a clearly articulated disaster plan for children and families. This disaster response plan and policy should be based on lessons learned from prior experience and needs to be based on sound developmental principles. A major priority for planning is ensuring that children are evacuated safely with their parents or caregivers. Separation of children and parents may at times be crucial for child safety and survival; however, the at-

tachment literature is grounded on the potential deleterious implications of these separations. Special needs populations, such as children in foster care and those with developmental or medical disabilities, should be specifically addressed. We also need to recognize the need to re-establish routines providing safety, support, and stability for children as soon as possible after the immediate disaster.

Training of first responders, health and mental health providers, crisis responders, and volunteers should include trauma-focused, developmentally grounded components relevant to their backgrounds and roles. A family-centered approach is critical in shelters. Plans need to be in place to ensure the safety and knowledge of whereabouts of families. Mental health professionals with child- and trauma-focused

experience are required to respond to major disasters. In addition to rotating shifts of volunteers, priority should be given to rebuilding infrastructure with providers who can be consistently available for the long run. These providers need to be comfortable working not only in traditional office settings but also in the field and on the front line. Services should be provided collaboratively with schools, community agencies, and other settings where children and families spend time. In sum, trauma-focused and developmentally informed considerations are crucial in formulating disaster plans that address the needs of children. It is required that the funding for the planning and response be provided federally and administered locally. It is also crucial to consider that when disaster strikes, for those already living in poverty, more resources and services are needed to meet their needs. In the aftermath of a disaster, policies are needed to help support children and adolescents build resilience and self-efficacy to prevent scarring that limits developmental functioning and achievement of potential.

State and Local Educational Plans

Educators need to develop plans for the provision

Our experiences following Hurricane Katrina strongly support the importance of our country having a clearly articulated disaster plan for children and families.

In sum, trauma-focused and developmentally informed considerations are crucial in formulating disaster plans that address the needs of children.

Perils and Promise for the Mental Health of Children and Families Post-Katrina*
Cheryl A. Boyce, National Institute of Mental Health, National Institutes of Health,
Department of Health and Human Services

The wake of Katrina left not only overwhelming and unforeseen physical damage to the Gulf Coast region, but also short- and long-term effects on the mental health of a diverse population of children and their families (e.g. Golden, 2006; Kessler, Galea, Jones & Parker, 2006; Madrid, Grant, Reilly, & Redlener, 2006). Previous research from natural disasters and terrorism predicts the adversities that children and families face post-Katrina, as well as the need for increased culturally relevant mental health services among those with various levels of pre-disaster functioning (e.g. Freddy, Kilpatrick, & Resnick, 1993; Pfefferbaum, 1997, 2003; Norris, Friedman, Watson, Byrne, Diaz, & Kaniasty, 2002a, 2002b; Ozer, Best, Lipsey, Weiss, 2003; Rabalais, Ruggiero, Scotti, 2003; Rubonis & Bickman, 1991; Stuber, Galea, Boscarino, & Schlesinger, 2006). In this *Social Policy Report*, Osofsky, Osofsky, and Harris (this issue) summarize the potential traumatic effects to children who survive disasters, but also the hope and resilience demonstrated by children and their families throughout the region.

Research, planning, and policy for the Katrina disaster received a boost before the fact as a result of responses to the events of September 11th, 2001. The Institute of Medicine provided guidance for a public health strategy in a report that addressed the psychological effects of terrorism and intervention options through recommendations for the training and education of service providers, appropriate guidelines for the protection of service providers, and public health surveillance for factors related to psychological consequences (Butler, Panzer, Goldfrank, 2003). A conference sponsored by the National Center for Disaster Preparedness (2003) in New York also challenged the public health system infrastructure to prepare for the needs of children who experience disasters. Collaboratively, NIMH; the U.S. Departments of Defense, Justice; Veterans Affairs; and the American Red Cross held a workshop to reach consensus on best evidence-based practices for early psychological interventions for mental health and mass violence (NIMH, 2002). In 2003, The National Advisory Committee on Children and Terrorism (NACCT, 2003) made similar recommendations to the Secretary of the U.S. Department of Health and Human Services (DHHS) regarding the need for a comprehensive public health strategy, including plans for prioritized funding decisions, oversight, and new pediatric and psychosocial initiatives as an essential part of the American national security response to terrorism. Unfortunately, Hurricanes Rita and Katrina caused damage in 2005 before many recommendations could be fully evaluated and implemented within public health systems.

The investment in research and program responses to disasters across federal agencies has been unprecedented (e.g. Rapid Assessment in Post-Impact Disaster [RAPID] Research Grant Program, NIH, 2006; U.S. Department of Homeland Security [USDHS], 2006). For example, The National Institute of Mental Health within the National Institutes of Health, DHHS, has provided grant support for time-sensitive research on response to recent disasters, which has included attention to mothers and infants (Buekens, Xiong & Harville, 2006), children's behavioral and academic functioning (Kelley, 2006), health disparities, and serious mental illness (e.g., Kessler, Galea, Jones & Parker, 2006). The Substance Abuse and Mental Health Services Administration's Center for Mental Health Services (SAMHSA CMHS), in partnership with Federal Emergency Management Administration (FEMA), awarded over \$100 million in funds to administer crisis counseling programs in the aftermath of Hurricanes Katrina and Rita (USDHS, 2006).

The promise of the resilience observed so far in children who survived Katrina's wake has yet to be fully realized in the long term, but the hope and spirit of the survivors in the Gulf Coast region remains strong. To avert the future perils of disasters that threaten the mental health of children, research and subsequent implications for mental health will need implementation, monitoring, and evaluation for effectiveness within a culturally and developmentally sensitive context. As Osofsky and colleagues note, these include real-world settings, such as early care and education programs (e.g., Head Start, Early Head Start), schools, and other community-based outreach efforts. While we cannot predict with certainty when and where the next disaster may strike, we have a knowledge base that can inform future preparation, preventive interventions, and treatment for the mental health of children through research and health policies. Although adversities continue, we can reward the resilience of the children and families of the Gulf Coast region with our best efforts to improve their lives in the present and protect their hopes for the unpredictable future.

References

- Buekens, P., Xiong, X., Harville, E. W. (2006). Hurricanes and pregnancy. *Birth*, 33, 91-93. A. S. Butler, A. M. Panzer, & L. R. Goldfrank (2003). *Preparing for the Psychological Consequences of Terrorism: A Public Health Strategy*. Washington, D.C.: The National Academies Press.
- Freedly, J. R., Kilpatrick, D. G., Resnick, H. S. (1993). Natural disasters and mental health: Theory, assessment, and intervention. In R. Allen (Ed.). *Handbook of post-disaster interventions*. [Special issue]. *Journal of Social Behavior and Personality*, 8(5):49-103
- Golden, O. (2006, February). *Young children after Katrina: A proposal to heal the damage and create opportunity in New Orleans*. Washington, DC: Urban Institute.
- Kelley, M. L. (2006). Children's Adjustment in the Aftermath of Hurricane Katrina. Accessed on December 5, 2006, at <http://www.lsu.edu/psychology/faculty/Katrina%20research.pdf> . R. C. Kessler, S. Galea, R. T. Jones, H. A. Parker (2006, August 28). Mental illness and suicidality after Hurricane Katrina. *WHO Bulletin*.
- Madrid, P. A., Grant, R., Reilly, M. J., & Redlener, N. B. (2006). Short-term Impact of a Major Disaster on Children's Mental Health: Building Resiliency in the Aftermath of Hurricane Katrina. *Pediatrics*, 117, 448-453.
- National Center for Disaster Preparedness (2003). *Pediatric preparedness for disasters and terrorism: A national consensus conference: Executive summary*.
- National Institute of Mental Health (2002). *Mental Health and Mass Violence: Evidence-Based Early Psychological Intervention for Victims/Survivors of Mass Violence. A Workshop to Reach Consensus on Best Practices*. NIH Publication No. 02-5138, Washington, D.C.: U.S. Government Printing Office. F. H. Norris (1992). Epidemiology of trauma: frequency and impact of different potentially traumatic events on different demographic groups. *Journal of Consulting and Clinical Psychology*, 60, 409-418.
- Norris, F. H., Friedman, M. J., Watson, P. J., Byrne, C. M., Diaz, E., & Kaniasty, K. (2002). 60,000 disaster victims speak: Part I. An empirical review of the empirical literature, 1981-2001. *Psychiatry*, 282(8), 755-762.
- Norris, F. H., Friedman, M. J., Watson, P. J., Byrne, C. M., Diaz, E., & Kaniasty, K. (2002). 60,000 disaster victims speak: Part II. Summary and implications of the disaster mental health research. *Psychiatry*. 65(3), 240-260.
- Ozer, E. J., Best C., Lipsey, J., & Weiss, D. S. (2003). Predictors of Post traumatic stress disorder: A metanalysis. *Psychological Bulletin*, 129(1), 52-73.
- Pfefferbaum, B. (1997). Posttraumatic stress disorder in children: a review of the past 10 years. *Journal of the American Academy of Child and Adolescent Psychiatry*, 36(11), 1103-1111.
- Pfefferbaum, G. (2003). The children of Oklahoma City. In R. Ursano, C. S. Fullerton & A. E. Norward (Eds). *Terrorism and Disaster* (pp. 58-70.) New York: Cambridge University Press.
- Rabalais, A. E., Ruggerio, K. J., & Scotti, J. R., (2003) Multicultural issues in the response of children to disasters. In A. LaGreca, W. Silverman, E. Vernberg & M. C. Roberts (Eds). *Helping Children Cope With Disasters and Terrorism*. (pp. 73-100). Washington, D.C.: American Psychological Association.
- Rubonis, A. V. & Bickman, L. (1991). Psychological impairment in the wake of disaster: The disaster-psychopathology relationship. *Psychological Bulletin*, 109(3), 384-399.
- U. S. Department of Homeland Security (2006). *Hurricane Katrina: What Government Is Doing?* Retrieved on November 26, 2006 at http://www.dhs.gov/xprepresp/programs/gc_1157649340100.shtm

of elementary, junior, and high schools for children and youth after disaster. The same is true for child care centers, including public and private preschools. Centers and schools need to be reopened as rapidly as possible.¹

Education is needed for school and child care personnel on the impact of trauma on children and adolescents, recognition of red flags, effective interventions and resilience building, and availability of services.

Educational policy should address the needs of providers, including teachers and first responders, and recognize that they and their families may have been traumatized, experienced vicarious traumatization and compassion fatigue, and that self care is essential.

Classroom and after-school programs need to be developed immediately to support displaced children with their academic and social needs and to build resilience and self-efficacy.

Post-disaster, adolescents are especially vulner-

able to alcohol and substance abuse and risk-taking behaviors with ongoing personal and family stress. Programs are needed to raise awareness and provided needed supports.

Conclusion

In this paper, we have described many of the developmental considerations that need to be taken into account in helping children, adolescents and families during and after a disaster. The success of a disaster plan for children is predicated on preparation, which includes training at all levels, to build capacity to be able to implement such a plan at the time of a disaster. As mentioned previously, we have sound scientific knowledge about the developmental needs of children and families; however, science can only go so far. The knowledge resulting from the trauma literature and from lessons learned from 9/11, previous disasters, and traumatic events are not enough if the political decisions are not made to develop and fund adequate plans to meet the needs of children and families. Decisions are required about how to best allocate scarce federal resources to support the necessary local infrastructure and capacity building that includes both extensive training and development of services.

We have learned much in the first year post-Katrina about the current and long-term needs of children, adolescents, and families. We also recognize the continuing need for research related to disasters,

to the developmental and emotional needs of children impacted by disasters, and the most effective resilience building and therapeutic services for children and families. While many believe that the devastation caused by Hurricane Katrina is over, it is not. Recovery is slow, and for the hundreds of thousands of children and families traumatized by the loss of homes, loved ones, and communities, the impact will be with them for the rest of their lives and perhaps will continue for generations to follow.

But the trauma resulting from Hurricane Katrina does not have to preclude resilience and strength. Developmentally appropriate supports and services can aid greatly in the psychological rebuilding, while the physical rebuilding and recovery of the region occurs. We have the opportunity to utilize the knowledge gained from this unprecedented natural and man-made disaster to recognize the important, and often unmet, needs of children and families at such times of overwhelming difficulty. Research coming out of this disaster is not just academic, but can be used as lessons learned to guide more effective ways to prepare and support children and families in future disasters. Hopefully, in addition to the increased knowledge that can be learned from this devastating hurricane, there is the political will to move the process forward and finally develop a national disaster plan for children and families.

Endnotes

¹For an excellent resource on young children, see ZERO TO THREE Policy Center Fact Sheet, Hurricane Relief for Infants, Toddlers, and Their Families, September 2005.

References

- Annie Casey Foundation. KidsCount (2005). (Accessed at www.aecf.org/kidscount July 2006)
- Assanangkornchai, S., Tangboonngam, S. & Edwards, J.G. (2004). The flooding of Hai Tai: predictors of adverse emotional responses to a natural disaster. *Stress and Health, 20*, 81-89.
- Beardslee, W. R., Keller, M. B., Lavori, P. W., Klerman, G. K., Dorer, D. J., & Samuelson, H. (1988). Psychiatric disorder in adolescent offspring of parents with affective disorder in a non-referred sample. *Journal of Affective Disorders, 15*, 313-322.
- Benight, C. C. & Bandura, A. (2004). Social cognitive theory of posttraumatic recovery: The role of perceived self-efficacy. *Behaviour Research and Therapy, 42*, 1129-1148.
- Bokszczanin, A. (2002). Long-term negative psychological effects of a flood on adolescents. *Polish Psychological Bulletin, 33(1)*, 55-61.
- Bowlby, J. (1973). Separation: *Anxiety & Anger. Vol. 2 of*

- Attachment and loss* London: Hogarth Press; New York: Basic Books; Harmondsworth: Penguin (1975)
- Briere, J. & Elliot, D. (2000). Prevalence, characteristics, and long-term sequelae of natural disaster exposure in the general population. *Journal of Traumatic Stress, 13*(4), 661-679.
- Chemtob, C. M., Nakashima, J. P., & Hamada, R. S. (2002). Psychosocial intervention for postdisaster trauma symptoms in elementary school children. *Archives of Pediatrics and Adolescent Medicine, 156*, 211-216.
- Cicchetti, D., & Toth, S. L. (1997). *Developmental perspectives on trauma: Theory, research and intervention*. Rochester, NY: University of Rochester Press.
- De Bellis, M. D. & Van Dillen, T. (2005). Childhood Post-Traumatic Stress Disorder: an overview. *Child and Adolescent Psychiatric Clinics of North America, 14*, 745-772.
- Eckenrode, J., Laird, M., and Doris, J. (1993). School performance and disciplinary problems among abused and neglected children. *Developmental Psychology, 29*, 53-62.
- Fullerton, C. S. & Ursano, R. J. (2005). Psychological and Psychopathological Consequences of Disasters. In *Disasters and Mental Health* (Eds: Lopez-Ibor, J.J., Christodoulou, G., Maj, M., Satorius, N, & Okasha, A.) John Wiley and Sons Ltd.
- Garbarino, J., Eckenrode, J., and Powers, J. L. (1997) The maltreatment of youth. In J. Garbarino and J. Eckenrode (Eds). *Understanding Abusive Families: an Ecological Approach to Theory and Practice*. San Francisco: Jossey & Bass, 145-165.
- Gittelman (2003). Disasters and Psychosocial Rehabilitation. *International Journal of Mental Health, 32*(4), 51-69.
- Goenjian, A. K., Walling, D., Steinberg, A. M., Karayan, I., Najarian, L. M., & Pynoos, R. (2005). A prospective study of posttraumatic stress and depressive reactions among treated and untreated adolescents 5 years after a catastrophic disaster. *The American Journal of Psychiatry, 162*.
- Hobfoll, W. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist, 44*, 513-524.
- Hoven, C.W., Duarte, C.S., and Mandell, D.J. (2003). Children's mental health after disasters: The impact of the World Trade Center attack. *Current Psychiatry Reports, 5*(2):101-7.
- La Greca, A., Silverman, W., Vernberg, E., & Prinstein, M. (1996). Symptoms of posttraumatic stress in children after Hurricane Andrew: A prospective study. *Journal of Consulting and Clinical Psychology, 64*(4), 712-723.
- Laor, N., Wolmer, L., Mayes, L., Gershon, A., Weizman, R., & Cohen, D. (1007) Israeli Preschool Children Under Scuds: A 30-Month Follow-up. *Journal of the American Academy of Child & Adolescent Psychiatry, 36*, 349-356.
- Louisiana Department of Education (2006). (Accessed www.doe.state.la.us/lde/index.html July 2006).
- Lyman, R. (2006). Reports reveal hurricanes' impact on human landscape. *New York Times*, June 7, 2006.
- Masten, A. (2001). Ordinary magic: Resilience processes in development. *American Psychologist, 56*, 227-238.
- Mollica, R. F., Lopes Cardozo, B., Osofsky, H., Raphael, B., Ager, A., Salama, P. (2004) Mental health in complex humanitarian emergencies. *Lancet, 364*(9450), 2058-2067.
- National Child Traumatic Stress Network and National Center for PTSD, *Psychological First Aid: Field Operations Guide*, September 2005.
- North, C. S., Kawasaki, A., Spitznagel, E.L., & Hong, B.A. (2004). The course of PTSD, major depression, substance abuse, and somatization after a natural disaster. *The Journal of Nervous and Mental Disease, 192*(12), 823-829.
- Norris, F. H., Murphy, A. D., Baker, C. K., & Perilla, J. L. (2004). Postdisaster PTSD over four waves of a panel study of Mexico's 1999 flood. *Journal of Traumatic Stress, 17*(4), 283-292.
- Norris, F. H., Murphy, A.D., Baker, C.K., & Perilla, J. L. (2004). Postdisaster PTSD over four waves of a panel study of Mexico's 1999 flood. *Journal of Traumatic Stress, 17*(4), 283-292.
- Norris, F. (March 2005). Range, magnitude, and duration of the effects of disasters on mental health: Review update 2005. *Research Education Disaster Mental Health* (Review posted to www.redmh.org March 2005).
- Norris, F. (Spring 2002). Psychosocial consequences of disasters. *PTSD Research Quarterly, 13*(2), 1-8.
- Norris, F., Friedman, M. J., & Watson, P. J. (2002). 60,000 Disaster victims speak: Part II. Summary and implications of the disaster mental health research. *Psychiatry, 65*, 240-260
- North, C.S., Kawasaki, A., Spitznagel, E.L., & Hong, B.A. (2004). The course of PTSD, major depression, substance abuse, and somatization after a natural disaster. *The Journal of Nervous and Mental Disease, 192*(12), 823-829.
- Norris, F. H., Murphy, A.D., Baker, C.K., & Perilla, J.L. (2004). Postdisaster PTSD over four waves of a panel study of Mexico's 1999 flood. *Journal of Traumatic Stress, 17*(4), 283-292.
- Osofsky, J. D. (Ed.) (1997). *Children in a Violent Society*. New York: Guilford
- Osofsky, J. D. (1999). The impact of violence on children, *The Future of Children: Domestic Violence and Children* Vol. 9, No. 3, 33-49.
- Osofsky, J.D. (2004). *Young children and trauma: Interventions and treatment*. New York: Guilford Publishers.
- Pfefferbaum, B., Nixon, S. J., Krug, R. S. (1999a). Clinical

- needs assessment of middle and high school students following the 1995 Oklahoma City bombing. *American Journal of Psychiatry*, 156, 1069-1074.
- Pfefferbaum, B., Nixon, S.J, Tucker, P.M. (1999b). Posttraumatic stress responses in bereaved children after the Oklahoma City bombing. *Journal of the American Academy of Child and Adolescent Psychiatry*, 38, 1372-1379.
- Pynoos, R. S. (1993). Traumatic Stress and Developmental Psychopathology in Children and Adolescents, *American Psychiatric Press Review of Psychiatry*, 12, 205-238.
- Pynoos, P., Steinberg, A., & Goenjian, A. (1996). Traumatic Stress in Childhood and Adolescence: Recent Developments and Current Controversies in B. van der Kolk, A. McFarlane, & L. Weisaeth (Eds) *Traumatic Stress: The Effects of Overwhelming Experience on the Mind, Body, and Society*, (pp. 331-358). New York: Guilford Publishers.
- Pynoos, R. S., Steinberg, A., & Piacentini, J. C. (1999). A developmental model of childhood traumatic stress and intersection with anxiety disorders. *Biological Psychiatry*, 46, 1542-1554.
- Russoniello, C., Skalko, T., O'Brien, K., McGhee, S., Bingham-Alexander, D., Beatley, J. (2002). Childhood post-traumatic stress disorder and efforts to cope after Hurricane Floyd. *Behavioral Medicine*, 28, 61-71.
- Schaffer, D., Fisher, P., Dulcan, M. K., et al. (1996). The NIMH Diagnostic Interview Schedule for Children Version 2.3 (DISC-2.3): description, acceptability, prevalence rates and performance in the MECA study. *Journal of the American Academy of Child and Adolescent Psychiatry*, 35(7), 865-77.
- Shalev, A. Y., Freeman, S., Peri, T., Brandes, D., Sahar, T., Scott, P. O., Pitman, R. (1998). Prospective study of post-traumatic stress disorder and depression following trauma. *American Journal of Psychiatry*, 155, 630-637.
- Shelby, J. S. & Tredinnick, M. G. (1995). Crisis interventions with survivors of natural disaster: lessons from Hurricane Andrew. *Journal of Counseling and Development*, 73, 491-497.
- Silverstein, M., Augustyn, M., Cabral, H., & Zuckerman, B. (2006). Maternal depression and violence exposure: Double jeopardy for child school functioning. *Pediatrics*, 118, 792-800.
- Sutker, P. B., Corrigan, S. A., Sundgaard-Riise, K., Uddo, M., & Allain, A. N. (2002). Exposure to war trauma, war-related PTSD, and psychological impact of subsequent hurricane. *Journal of Psychopathology and Behavioral Assessment*, 24(1), 25-37.
- Smith, B. W. & Freedy, J. R. (2000). Psychosocial resource loss as a mediator of the effects of flood exposure on psychological distress and physical symptoms. *Journal of Traumatic Stress*, 13(2), 349-357.
- Trautman, R., Tucker, P., Pfefferbaum, B., Lensgraf, S. J., Doughty, D. E., Buksh, A., & Miller, P. D. (2002). Effects of prior trauma and age on posttraumatic stress symptoms in Asian and Middle Eastern immigrants after terrorism in the community. *Behavioral Science*, 38, 459-474.
- US Census Bureau (2000) (Accessed www.census.gov/main/www/cen2000.html, July 2006).
- Vernberg, E., La Greca, A., Silverman, W., & Prinstein, M. (1996). Prediction of posttraumatic stress symptoms in children after Hurricane Andres. *Journal of Abnormal Psychology*, 105, 237-248.
- Vogel, J. M., & Venberg, E. M. (1993). Psychological responses of children to natural and human-made disasters. I. Children's psychological responses to disasters. *Journal of Clinical Child Psychology*, 22, 464-484.
- Wadsworth, M. E., Gudmundsen, G. R., Raviv, T., Ahlkvist, J. A., McIntosh, D. N., Kline, G.H., Rea, J., Burwell, R.A. (2004). Coping with terrorism: Age and gender differences in effortful and involuntary responses to September 11th. *Applied Developmental Science*, 8(3), 143-157.

About the Authors

Cheryl A. Boyce, Ph.D., is currently the Associate Director for Pediatric Research Training and Career Development and Chief of the Child Abuse and Neglect Program within the Division of Pediatric Translational Research and Treatment Development (DPTR) at the National Institute of Mental Health (NIMH), National Institutes of Health (NIH), Department of Health and Human Services (DHHS). In this capacity she serves as the project officer for numerous research projects and collaborates and consults with Federal agencies, research investigators, those in clinical practice, and the Nation's public regarding issues of research training, career development, child abuse and neglect, early childhood, health disparities, social and cultural issues, and developmental psychopathology. She is a member of the technical working group for the National Survey of Child and Adolescent Well-Being (NASCAW) and scientific collaborator for the Family Research Consortium IV on Transitions, Family Processes and Mental Health. Boyce also co-chairs the NIH Child Abuse and Neglect Working Group and Federal Child Neglect Research Consortium.

James Garbarino holds the Maude C. Clarke Chair in Humanistic Psychology and is Director of the Center for the Rights of Children at Loyola University Chicago. Previously he was Elizabeth Lee Vincent Professor of Human Development and Co-Director of the Family Life Development Center at Cornell University. He is a Fellow of the American Psychological Association. In 1991 he undertook missions for UNICEF to assess the impact of the Gulf War upon children in Kuwait and Iraq, and he has served as a consultant for programs serving Vietnamese, Bosnian, and Croatian child refugees. Books he has authored or edited include: *See Jane Hit: Why Girls Are Growing More Violent and What We Can Do About It* (2006); *Words Can Hurt Forever: How to Protect Adolescents From Bullying, Harassment, and Emotional Violence* (2002); *Parents Under Siege: Why You Are the Solution, Not the Problem, in Your Child's Life* (2001); and *Lost Boys: Why Our Sons Turn Violent and How We Can Save Them* (1999). The National Conference on Child Abuse and Neglect honored Garbarino in 1985 with its first C. Henry Kempe Award in recognition of his efforts on behalf of abused and neglected children. In 1989, he received the American Psychological Association's Award for Distinguished Professional Contributions to Public Service. In 1994, he received the Dale Richmond Award from the American Academy of Pediatrics Section on Behavioral and Developmental Pediatrics, and, in 2000, he received the President's Celebrating Success Award from the National Association of School Psychologists.

William W. Harris received his Ph.D. in urban studies from the Massachusetts Institute of Technology and an honorary Doctor of Humane Letters from Lesley College. He currently is a senior fellow at the Jonathan M. Tisch College of Citizenship and Public Service at Tufts University. In 1981 Harris founded, and continues to head, KidsPac, a political action committee dedicated to sound public policies for poor children from birth to age six and their families. He speaks frequently about children and politics and has authored or co-authored articles on public policy and childhood trauma. He has received several awards for his work on behalf of children, including the Advocacy Award, Division of Child, Youth, and Family Services, from the American Psychological Association; the Dale Richmond Award from the American Academy of Pediatrics; the Distinguished Alumnus Award from Wesleyan University; and the Public Advocacy Award from the International Society for Traumatic Stress Studies.

Christina Hoven, Dr.P.H., MPH, is Director of the Child Psychiatric Epidemiology Group, Mailman School of Public Health and the College of Physicians and Surgeons, Columbia University, and a Research Scientist, Division of Child and Adolescent Psychiatry, New York State Psychiatric Institute. She was Principal Investigator of the 2002 post 9/11 NYC Board of Education Survey. That investigation, which provided a comprehensive evaluation of a representative sample of children to the WTC 9/11 disaster, received national and international recognition for its being the first large, comprehensive epidemiological study of children post-disaster. Hoven recently completed a study, based on her 9/11 study findings, with World Trade Center evacuees and matched community controls examining parental transmission of psychopathology across three generations. Currently, Hoven is conducting a study of the transmission of trauma among first responder families in New York and Tel Aviv.

Howard J. Osofsky, M.D., Ph.D., is a psychiatrist, psychologist, psychoanalyst, and Professor and Chair of the Department of Psychiatry at LSU Health Sciences Center and John and Kathleen Bricker Chair of Psychiatry. He has developed behavioral health and psychosocial preparedness programs both for first responders and mental health professionals to improve responses following disaster, terrorism, and complex emergencies. In 1998, he received the first award as Best Department Chair by the American Academy of Child and Adolescent Psychiatry in recognition of his efforts for children and adolescents. In 2002, he was awarded the Medal of Honor by the Mayor of New Orleans for his work with the police and community. In the aftermath of Hurricane Katrina, he was asked to be Clinical Director for Louisiana Spirit and to provide services for first responders and their families in Metropolitan New Orleans. On August 29, 2006, he was honored with a Proclamation from the New Orleans City Council recognizing his work helping children and families in the aftermath of Hurricane Katrina.

Joy D. Osofsky, Ph.D., is a psychologist and psychoanalyst and Professor of Pediatrics and Psychiatry at Louisiana State University Health Sciences Center in New Orleans. Osofsky is Director of the Violence Intervention Program for Children and Families and the LSUHSC Harris Center for Infant Mental Health at Louisiana State University Health Sciences Center. Her edited book, *Young Children and Trauma: Intervention and Treatment* (2004), includes contributions related to mental health, child welfare, the judiciary, and law enforcement. Osofsky is President of Zero to Three: National Center for Infants, Toddlers, and Families; Past-President of the World Association for Infant Mental Health; and served on the Pew Commission for Children in Foster Care. In 2002, she was awarded the Medal of Honor by the Mayor of New Orleans for her work with the police and community, and in 2005, she was awarded the Nicholas Hobbs Award for her contributions to public policy by Division 37 of the American Psychological Association. Following Hurricane Katrina, Osofsky was asked to serve as Clinical Director for Child and Adolescent Initiatives for Louisiana Spirit. On August 29, 2006, she was honored with a Proclamation from the New Orleans City Council recognizing her work helping children and families in the aftermath of Hurricane Katrina.

Judith Wicks, B.A., is Field Director and Trainer for the Child Psychiatric Epidemiology Group, providing such supervision to the 2002 WTC Study of NYC school children. She is a co-author of the Diagnostic Interview Schedule for Children (DISC), Version 2.1, and a substantial contributor to the development of the NIMH DISC 2.3. Wicks is the author of the SURF Interviewer Manual and a co-author of the DISC Interviewer Manual for the MECA Study Field Trials. Wicks is an important contributor to the Columbia University School of Public Health's field methods in epidemiology course, which addresses data collection problems pre-, post- and during disaster.

Social Policy Report is a quarterly publication of the Society for Research in Child Development. The *Report* provides a forum for scholarly reviews and discussions of developmental research and its implications for the policies affecting children. Copyright of the articles published in the *Report* is maintained by SRCD. Statements appearing in the *Report* are the views of the author(s) and do not imply endorsement by the Editors or by SRCD.

Electronic access to the *Social Policy Report* is available at the *Report's* website:
<http://www.srcd.org/spr.html>

Subscriptions available at \$20.00 to nonmembers of SRCD, single issues at \$5.00, and multiple copies at reduced rates. Write SRCD Executive Office (info@srcd.org) or phone (734) 998-6578.

Purpose

Social Policy Report (ISSN 1075-7031) is published four times a year by the Society for Research in Child Development. Its purpose is twofold: (1) to provide policymakers with objective reviews of research findings on topics of current national interest, and (2) to inform the SRCD membership about current policy issues relating to children and about the state of relevant research.

Content

The *Report* provides a forum for scholarly reviews and discussions of developmental research and its implications for policies affecting children. The Society recognizes that few policy issues are noncontroversial, that authors may well have a "point of view," but the *Report* is not intended to be a vehicle for authors to advocate particular positions on issues. Presentations should be balanced, accurate, and inclusive. The publication nonetheless includes the disclaimer that the views expressed do not necessarily reflect those of the Society or the editors.

Procedures for Submission and Manuscript Preparation

Articles originate from a variety of sources. Some are solicited, but authors interested in submitting a manuscript are urged to propose timely topics to the editors. Manuscripts vary in length ranging from 20 to 30 pages of double-spaced text (approximately 8,000 to 14,000 words) plus references. Authors are asked to submit manuscripts electronically, if possible, but hard copy may be submitted with disk. Manuscripts should adhere to APA style and include text, references, and a brief biographical statement limited to the author's current position and special activities related to the topic. (See page 2, this issue, for the editors' email addresses.)

Three or four reviews are obtained from academic or policy specialists with relevant expertise and different perspectives. Authors then make revisions based on these reviews and the editors' queries, working closely with the editors to arrive at the final form for publication.

The Committee on Child Development, Public Policy, and Public Information, which founded the *Report*, serves as an advisory body to all activities related to its publication.