
SOCIAL IMPACTS OF HURRICANE KATRINA ON DISPLACED K–12 STUDENTS AND EDUCATIONAL INSTITUTIONS IN COASTAL ALABAMA COUNTIES: SOME PRELIMINARY OBSERVATIONS

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Hurricane Katrina devastated communities along the Louisiana, Mississippi, and Alabama Gulf coast. Over 300,000 students were displaced and evacuees relocated throughout the United States. K–12 schools in Mobile and Baldwin counties, situated along coastal Alabama, hosted 3,681 students from the devastated areas. From an analysis of quantitative data and qualitative information obtained from school personnel, we summarize problems and issues that characterized displaced students, families, and host schools. Suggestions for immediate and long-term support for host K–12 schools and displaced families are provided along with suggestions for future research.

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Hurricane Katrina devastated communities along the Louisiana, Mississippi, and Alabama coast. On August 29, 2005, the storm traveled north along the Louisiana-Mississippi border with winds over 140 mph and storm surges that measured from 20 to 32 feet. The death toll from Katrina exceeded 1,800 and damage estimates may exceed three hundred billion dollars (Burton and Hicks 2005). The catastrophic damage unleashed by Katrina caused flooding and/or structural damage to the homes of 2.5 million people (Gabe, Falk, McCarty, and Mason 2005). Katrina's economic impacts may exceed three hundred billion dollars, far surpassing Hurricane Andrew (thirty-five billion dollars) as the most expensive natural disaster in U.S. history. Considering the global reach of the mass media and 24/7 news cycle, the horrific images of damage caused by Hurricane Katrina, and other recent catastrophes (e.g., 9/11 terrorist attacks of 2001 and the Asian Tsunami of 2004) will be etched in the minds of people worldwide for some time to come. It is apparent that disasters, experienced either directly or indirectly via the media, will be significant features of social life in the twenty-first century.

As a "manufactured disaster" (Beck 2006), the long-term effects of Katrina on individuals and communities will be varied and complex (Picou and Marshall 2007). While decades of research on natural and technological disasters may help us understand the short-term and potential long-term human impacts of the Hurricane Katrina, certain aspects of this disaster are unique. For example, the hurricane displaced between 700,000 and 1.2 million people (Gabe, Falk, McCarty, and Mason 2005) and approximately 300,000 of those displaced were students (Hunter 2005). Anderson (2005) has noted that disaster research has generally overlooked impacts and consequences for children. Fothergill and Peek's (2006) ethnographic analysis found that a broad array of mental, physical, and social problems were identifiable for children (also see Breed 2006). The present research offers preliminary observations regarding issues and problems associated with the transition of displaced K-12 students into host schools in Coastal Alabama following the massive forced evacuation caused by Katrina.

DISASTER RESEARCH

The systematic study of disasters began in the late 1940s with researchers examining the relatively short-term recovery process that typically follows natural disasters, such as fires, floods, hurricanes, and tornadoes (see, e.g., Lemons 1957). While the distinction between disasters perceived as "acts of God" and as "human-caused" was

acknowledged in early disaster studies (Fritz 1961; Barkun 1974), this distinction became much more salient with the emergence of large-scale, human-caused disasters, such as the Santa Barbara Oil Spill (1969), Love Canal (1978), and Three Mile Island (1979). After the publication of seminal research on technological disasters (Erikson 1976; Levine 1982), the practice of defining disasters as either natural or technological became commonplace among disaster practitioners and researchers. This dichotomy is supported empirically with evidence that a therapeutic community emerges in the aftermath of a natural disaster, whereas a corrosive community emerges after a technological disaster (for a review, see Freudenburg 1997). The social psychological impact of natural disasters tends to be short-term, as neighbors help neighbors and government (at all levels) supports the recovery effort (Dynes 1998). A “corrosive” community emerges when the negative effects of a technological disaster impacts individuals and the community over a long period of time (Freudenburg 1997; Picou, Marshall, and Gill 2004).

The natural-technological dichotomy, and the debate regarding its utility, has pervaded much of the disaster literature. We argue that the *a priori* classification of a disaster as either natural or technological is possible analytically, but increasingly problematic empirically for three reasons. First, as it becomes more apparent that human activity has degraded ecological systems worldwide, disasters historically viewed as natural (e.g., meteorological disasters) increasingly may be viewed as partially human-caused. Second, although some disasters may viewed as natural, blame for the severity of the disaster and long-term recovery issues may be ascribed to the government and/or corporations. Third, the effects of recent disasters in the United States—September 11 terrorist attacks (2001) and Hurricane Katrina (2005)—are sufficiently complex and anomalous to defy efforts at simple classification (Marshall, Picou, and Gill 2003; Marshall and Picou 2007; Picou and Marshall 2007).

As such, rather than classifying events, we should be identifying and distinguishing between postdisaster processes that are corrosive and therapeutic (Marshall et al. 2003; Picou and Marshall 2007). Evidence from the technological disaster literature suggests that the recovery process will be stalled or delayed when people lose trust in government, seek redress through the legal system, and are uncertain regarding exposure to harmful chemicals (Marshall et al. 2003; Picou and Marshall 2007). Clearly, postdisaster processes that are therapeutic would include effective government emergency response and volunteerism. Identifying processes is only the first step, as we need to develop policies and postdisaster intervention programs that

include techniques designed to disable corrosive processes and enable therapeutic processes (Marshall et al. 2003; Picou and Marshall 2007).

DISASTERS AND CHILDREN

Anderson (2005, p. 160) contends that “empirical knowledge on the behavior of the full range of groups in society vulnerable to hazards and disasters is necessary to develop robust theories and models.” Furthermore, in highly stratified and diverse nations like the U.S., the lack of empirical research on certain groups may lead to these groups being “underserved” (Anderson 2005, p. 160; Fothergill and Peek 2006). Despite some gains in the study of the impact of disasters on racial and ethnic minorities and women, there is a paucity of disaster research on children and adolescents (Anderson 2005; Fothergill and Peek 2006). Research indicates that children are generally more at-risk for developing posttraumatic stress disorders (PTSD) than adults (Davidson and Foa 1991; Pynoos 1994) and this finding is also supported by research on disasters (Fletcher 1996; Garrison, Weinrich, Hardin, Weinrich, and Wang 1993; Garrison et al. 1995; Heft 1993; Lonigan, Anthony, and Shannon 1998; Mercuri and Angelique 2004; Pynoos et al. 1993). In an analysis of twenty-two studies published in the last thirty years, Mercuri and Angelique (2004) found consistent evidence that observing scenes of destruction and/or experiencing a life threatening event (regardless of the type of disaster) was a significant predictor of elevated levels of PTSD in children. Also, evidence indicates that negative behavioral and emotional responses will increase when the extreme event causes considerable damage to the child’s home and community and the child is separated from family members (Fothergill and Peek 2006).

In sum, in the aftermath of a disaster, the psychological well-being of children will likely suffer when they have observed scenes of destruction, they have experienced a life threatening event, there is considerable damage to their home and community, and they are separated from family members. It is likely that children displaced by Hurricane Katrina experienced most, if not all, of these factors. For displaced college students, research indicates the experience was very disruptive and stressful (Ladd, Gill, and Marszalek 2006; Gill et al. 2006; Ladd, Gill, and Marszalek forthcoming). Fothergill and Peek (2006), using ethnographic methods, interviewed thirty-eight adults which included parents, grandparents, and various service providers (daycare, school, mental health, evacuee shelters), who had insight into children’s experience during and after Hurricane

Katrina. They found that displaced children in host schools struggled with reestablishing a routine, adjusting to a different racial/ethnic and socioeconomic environment, forming new friendships, and coping with disaster-related anxiety. The authors conclude that restoring children's health and placing them back in schools is critical for community recovery (Fothergill and Peek 2006).

In the aftermath of Hurricane Katrina, the K–12 educational system, schools, and teachers must play a critical role in promoting long-term recovery by setting in motion processes that are therapeutic for displaced children. It is clear that community recovery will not occur in the impacted communities without rebuilding the schools and recruiting qualified teachers. Furthermore, recovery for displaced families and students will be delayed unless the schools in host communities are able to create a “safe” place, or sanctuary, for the displaced students. This research explores some of these issues through preliminary observations regarding displaced students attending schools in Mobile and Baldwin counties located on the Alabama gulf coast. We also identify and discuss challenges that emerged for the teachers, counselors, and administrators at the host schools.

METHODOLOGY

This study documents problems and issues that characterized displaced K–12 students who evacuated to Mobile and Baldwin Counties (Alabama). Mobile County is adjacent to the eastern Mississippi coastal border, while Baldwin County is the next county to the east, across Mobile Bay. Both Mobile and Baldwin counties are in close proximity to Harrison, Hancock, and Jackson counties in Mississippi, where Katrina's impacts were devastating to residences, schools, businesses, and casinos.

Data on the number of displaced students that enrolled in K–12 schools in Mobile and Baldwin counties was obtained directly from each county school district. In addition, discussions were held with one school administrator (Mobile), two teachers (Mobile and Baldwin), and two school social workers (Mobile and Baldwin). These discussions were informal and each focused on the staff members' perceptions of issues and problems that were associated with the migration of displaced students into the host school district. These discussions broadly addressed the perceptions of mental health problems of displaced students, the stability of displaced families and resource strain experienced by host schools. We acknowledge that these observations are limited and not generalizable to the population of displaced students and families; however, given the limited amount

of information on the impacts of disasters on children in general and, specifically, the relative dearth of research on displaced K–12 students from Katrina, we present our findings as a preliminary assessment of potential social problems and social issues that characterized displaced K–12 students and host schools in the aftermath of the worst natural disaster in the history of the U.S.

CHARACTERISTICS OF DISPLACED K–12 STUDENTS

The local school systems in coastal Alabama enrolled 3,681 students who were displaced by Hurricane Katrina. In addition to hosting displaced students, Mobile County schools were also adversely affected, with local students missing at least two weeks of school following the storm. According to school officials, damage estimates for Mobile County schools exceeded thirty million dollars.

Table 1 reveals that the vast majority of K–12 students displaced by Katrina were originally located in Louisiana (187,000) and Mississippi (160,000). For host schools in Mobile and Baldwin Counties, the majority of displaced students originated from these two states; however, approximately one thousand students were displaced from the west side of Mobile Bay, which included the communities of Bayou La Batre and Coden. Primarily as a result of damage inflicted by Hurricane Rita, a very small number of students enrolled in Mobile County schools were from Texas.

Table 2 provides more detailed information on the K–12 enrollments of displaced students in Baldwin and Mobile County schools. Enrollments were considerably higher in Mobile County schools with approximately 3,100 displaced students enrolled following Katrina's devastation. Baldwin County enrolled approximately 581 students and by the end of January 2006 this total had dropped to 327. In contrast, Mobile County maintained most of their displaced students. By the end of May 2006 only fifty-eight students had left Mobile County

Table 1. An overview of displaced K–12 students*

Total Number of Displaced students, LA*	187,000
Total Number of Displaced students, MS*	160,000
Total Number of Displaced students, AL*	1,000
Displaced Students enrolled in Baldwin County**	581
Displaced Students enrolled in Mobile County**	3,100
Total Displaced Students enrolled in the State of Alabama	5,434

*Adding up the Damage (2005).

**Mobile and Baldwin County School District Data.

Table 2. Mobile and Baldwin County estimates of displaced K–12 student enrollment from Hurricane Katrina*

County	Date	Number of displaced students enrolled
Baldwin	9/21/05	581
Baldwin	1/23/06	327
Mobile	12/07/05	3,100
Mobile	5/31/06	3,042
• Elementary school	5/31/06	1,328
• Middle school	5/31/06	1,309
• High school	5/31/06	405

*Mobile and Baldwin County School District Data.

schools with the overwhelming majority enrolled at the elementary and middle school levels.

OVERVIEW OF EDUCATIONAL IMPACTS

As with any disaster, both short-term and long-term consequences impact survivors (Picou et al. 2004). Hurricane Katrina resulted in the massive displacement of over 348,000 K–12 students and their families to school districts throughout Louisiana, Mississippi, and Alabama (Adding Up the Damage 2005). This rapid influx of “new” students produced a variety of acute stress-producing situations, not only for students, but also for teachers, school staff, and administrators. In general, disasters produce emotional, cognitive, interpersonal, and physical problems for children (Green et al. 1991; Vogel and Vernberg 1993; Mercuri and Angelique 2004). Our discussions with school district social work counselors revealed that some displaced students seemed to have lost their ability to concentrate on assignments and manifested symptoms of clinical depression. It was also documented that host teachers went to extraordinary lengths to create a supportive classroom environment for displaced students. Teachers were encouraged to make personal efforts to stay calm, focus on the psychosocial needs of new students, provide encouragement for academic success, and identify severe reactions among the most seriously impacted students (Millner 2006).

One important initial impact on the K–12 school systems in Mobile and Baldwin counties related to problems experienced by teachers. Teachers in all grades had to modify their lesson plans in terms of time spent on subject matter and the content of the subject matter. As displaced students continued to relocate throughout

the fall semester to Mobile and Baldwin County schools, teachers found that their academic abilities were varied. This required some teachers to modify the introduction of standard course material. This pattern of disruption seemed to impact math and science courses more than other courses in the curriculum of host schools. Furthermore, teachers had to be aware of symptoms of trauma among displaced students and had to reorganize classroom activities, as well as the learning environment, to promote academic success. Extra time was allotted by teachers to displaced students and several innovative strategies, such as assigning “local buddies” to promote social adjustment in the new classroom environment, were implemented (Millner 2006). Indeed, there was a significant amount of classroom disruption experienced by teachers, administrators, and students of local host schools in Mobile and Baldwin counties which resulted from the influx of traumatized students (Millner 2006).

Teachers were also monitors for identifying specific pathological reactions among individual displaced students. Displaced students who exhibited prolonged sadness, extreme nervousness, withdrawal, emotional outbursts, and preoccupation with the storm’s impact on their relatives, domiciles, or their former schools, as well as other signs of negative psychosocial impacts, were identified and counseling support was recommended; however, given the limited counseling staff available in Mobile and Baldwin county schools, only a few displaced students were referred and treated.

Displaced students not only suffered mental health problems from Katrina, but their peer-group structure and family structure were drastically altered by their migration out of severely damaged neighborhoods (Breed 2006). Oftentimes, students were living with relatives in crowded housing conditions or in strange communities with different sociocultural contexts (Fothergill and Peek 2006). In Mobile and Baldwin Counties, parents were also often separated, with one parent traveling back and forth to New Orleans or the Mississippi Gulf Coast to manage home repairs. Constant negotiation with insurance companies, state and federal agencies, and employers placed severe hardships on family relationships, which in turn resulted in distractions and stress for displaced students.

LOCAL ISSUES AND IMPACTS

More specifically, for Mobile and Baldwin County schools, a number of critical issues emerged that were directly related to the academic, medical, mental health, and housing needs of displaced students.

Initially, Mobile County school officials provided displaced students with over two thousand uniforms and new backpacks. Many displaced students evacuated with limited school supplies and clothing; so, their basic needs had to be immediately supported by the host school district. Furthermore, Mobile County experienced a continuous influx of displaced students throughout fall 2005, resulting in an ever-changing classroom environment. This steady flow of displaced students created a burden in the classroom, making it difficult for teachers to maintain progress in covering course material and providing tutorial services for incoming students who were out of school for varying lengths of time. Based on discussions with local school personnel, displaced students and families, the host school districts, and teachers were challenged by the following:

1. Displaced students lacked reliable access to transportation resources. This fact, when coupled with the very unstable housing problems experienced by evacuated families, led to attendance problems and negatively impacted academic performance.
2. The Mobile County School District experienced problems in accessing and verifying school records for displaced students from other states. This problem was particularly acute for high school seniors. Communication barriers between local, state and federal educational agencies exacerbated this basic need for new students.
3. Both school districts experienced poor access to displaced students' medical records; therefore, the continuity of medical care for a minority of the displaced students was significantly disrupted, resulting in delays in diagnosis, treatment, and the issuing of prescription drugs.
4. Families of displaced students suffered severe financial burdens that were directly associated with the high cost of temporary housing and the simultaneous repair of permanent housing in other states. These financial strains were often manifested in lack of financial support for the daily needs of many displaced students. In turn, these financial strains had negative effects on students' classroom behavior, academic performances, and attendance.
5. Families of most displaced students experienced a general lack of adequate and affordable housing in Mobile and Baldwin counties. Oftentimes, displaced families were in a pattern of "serial relocation," that is, they moved from school to school within the school district. This constant relocation of family

residence negatively impacted academic performance and timely arrival to host schools.

6. Difficulties were experienced by displaced families and students due to living in substandard housing. Families residing in hotels; FEMA trailers; tents; cruise ships; and mold-infested, damaged homes experienced great difficulty in providing their children with a home-environment conducive to completing homework, working on the Internet, and participating in school-sponsored extracurricular activities.
7. There was a general shortage of contractors and workers for repairing and rebuilding damaged homes in the immediate Alabama and Mississippi coastal areas. This fact has prolonged the negative impacts resulting from housing issues over the last year.
8. Home repairs have also been delayed due to new federal and state building codes. Furthermore, many families of displaced students experienced problems collecting insurance claims and/or obtaining adequate insurance coverage for present housing.
9. Families of displaced students who lacked adequate home/flood insurance and who did not meet FEMA criteria for disaster assistance have experienced long-term (12–15 months) social disruption. In these cases students are still characterized by poor academic performance and attendance problems.

MENTAL HEALTH IMPACTS

In terms of mental health impacts, a number of serious consequences were perceived by school personnel for displaced students. These psychosocial impacts had negative consequences for academic performance, attendance, and participation in extracurricular activities and supportive peer-group environments. Specific problems are listed below:

1. Because of physical, environmental, and emotional instability, classroom attendance has been, at best, irregular for displaced students. This general pattern has negatively impacted academic performance and extracurricular activity participation rates.
2. There was a scarcity of mental health providers available for displaced students. This lack of mental health counselors reduced the school systems' ability to identify, diagnose and treat the immediate and delayed psychological, stress-related

problems. Oftentimes, these negative psychological impacts were displayed in terms of classroom discipline and attendance problems.

3. A general sense of uncertainty and hopelessness characterized displaced students whose families continue to experience economic and housing problems.
4. Community and public health officials need to be trained and educated regarding the sustained and chronic psychosocial impacts of disasters. Given that the last day of the 2006 school year was also the first day of the new Hurricane season, coping skills need to be developed for parents and students who reside in high-risk hurricane areas.
5. Over time, there appears to be a developing social context for displaced students to suffer from posttraumatic stress disorder (PTSD), anxiety, depression, and other mental health problems. These symptoms may become more prevalent in the future.

SUMMARY AND CONCLUSION

Hurricane Katrina forced primary and secondary schools in Mobile and Baldwin counties into a pattern of immediate and ongoing accommodation to thousands of displaced families and students. Specifically, the educational resource impacts were more severe in Mobile County, where approximately 3,100 students enrolled throughout grades K–12. The continuous influx of students over the fall of 2005 into Mobile County schools placed new demands on teachers and strained educational resources. Teachers had to modify lesson plans, monitor displaced students for mental health problems, devise innovative classroom techniques to help evacuees cope with day-to-day problems, and operate without accurate student medical and academic records. In addition, displaced students were significantly burdened by housing and transportation problems, which, in turn, negatively impacted school attendance, academic performance, and participation in extracurricular activities.

The lack of available mental health counselors also resulted in lingering psychological impacts for many displaced students in both counties. Observations of teachers, counselors, and administrators suggest that a significant proportion of the displaced students continue to suffer from event-related psychological stress, depression, anxiety, and uncertainty about their future. This fact has perpetuated poor academic performance, discipline problems, and irregular school attendance. In general, these negative social, psychological,

and educational impacts may continue for some students well into the future.

Our preliminary observations in this article and the ethnographic research of Fothergill and Peek (2006) support Anderson's (2005) claim that children are an "underserved" group in the aftermath of disasters. In catastrophic disasters, like Hurricane Katrina, where schools are destroyed and thousands of families are displaced, the K-12 school system in host communities can play a pivotal role by providing a stable and therapeutic environment for displaced children. Immediate aid in the form of school supplies, additional mental health counselors, and additional teachers should be provided to host schools who receive students displaced by disasters.

It is also apparent that more research is needed to fully understand the long-term social psychological impacts of displacement on families, students, and teachers at host schools. Future studies should attempt to collect systematic data on the educational impacts of disasters directly from students, families, teachers, and administrators, and on the social problems associated with the transition to host school systems. Such data would be critical for policymakers, educators, and social scientists that need to better understand the dynamics of recovery for school-aged children and for planning for future disruptive disasters. We welcome the somewhat recent policy and research focus on issues of vulnerability and resiliency at the community-level, but we suggest this line of inquiry needs to be expanded by addressing these issues at the regional-level. For example, cities or communities that are likely to receive the largest numbers of student evacuees need to be identified and host school districts near vulnerable communities should be prepared for an influx of displaced students when the next disaster strikes. Resources needed for host school districts to enable therapeutic processes and to disable corrosive processes should be made available as part of broad preparation plans along coastal areas. Support for host educational institutions and teachers would provide important resources that would facilitate family recovery and reduce long-term social disruption and negative mental health impacts for children.

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