

8-2019

Stay or Go! Challenges for Hispanic Families Preceding Hurricanes: Lessons Learned

Melinda L. Lewis PhD
University of West Florida, mlewis1@uwf.edu

Paula T. Rappe MSW, LCSW
University of West Florida, prappe@uwf.edu

Linda K. Tierney MSW
Adult and Child Mental Health Care, Pace, Florida, Ltierney.acmhc@gmail.com

Janet D. Albury MSW
University of West Florida, jalbury@uwf.edu

Follow this and additional works at: <https://digitalcommons.library.tmc.edu/jfs>

Recommended Citation

Lewis, Melinda L. PhD; Rappe, Paula T. MSW, LCSW; Tierney, Linda K. MSW; and Albury, Janet D. MSW (2019) "Stay or Go! Challenges for Hispanic Families Preceding Hurricanes: Lessons Learned," *Journal of Family Strengths*: Vol. 19 : Iss. 1 , Article 3.

Available at: <https://digitalcommons.library.tmc.edu/jfs/vol19/iss1/3>

The *Journal of Family Strengths* is brought to you for free and open access by CHILDREN AT RISK at DigitalCommons@The Texas Medical Center. It has a "cc by-nc-nd" Creative Commons license" (Attribution Non-Commercial No Derivatives) For more information, please contact digitalcommons@exch.library.tmc.edu

Stay or Go! Challenges for Hispanic Families Preceding Hurricanes: Lessons Learned

Acknowledgements

*The terms "Hispanic/Latino" are used in this article to refer to persons of Mexican, Central American, Cuban, Dominican, Puerto Rican, South American, and Spanish descent who may be of any race.

Stay or Go! Challenges for Hispanic Families Preceding Hurricanes: Lessons Learned

There are overlapping concerns among Latino/Hispanic and other vulnerable populations in terms of disaster preparedness. This conceptual article examines the complexity of decision-making for Hispanic/Latino families living and/or working in the southern coastal regions of the continental United States (U.S.) as to remain in place or evacuate (stay or go) once alerted of potential life-threatening storm events. <https://digitalcommons.library.tmc.edu/cgi/viewcontent.cgi?filename=0&article=1403&context=jfs&type=additional> illustrates southern coastal U.S. regions bordering hurricane-producing bodies of water. The term "Hispanic/Latino" is used to refer to persons of Mexican, Central American, Cuban, Dominican, Puerto Rican, South American, and Spanish descent who may be of any race. Emergency preparedness concerns shared among Latino/Hispanic and other vulnerable populations include: lack of financial resources, transportation issues, individual health issues or those of family members, knowledge of where to evacuate, possible loss of employment, and distrust of authorities (Gages & Montz, 2014; Nick, et.al, 2009; Peguero, 2006). For Spanish-speaking Latino immigrant families in the United States, particularly migrant seasonal farm workers, additional issues exist, including: language barriers, social vulnerabilities, information dissemination, distrust of authorities, and contextual barriers. While the argument can be made that living in hurricane-prone areas requires greater preparedness levels for all residents, the literature suggests that natural disasters have disproportionately devastating impacts on marginalized populations in our society (Blazer & Murphy, 2008; Maldonato, Collins, & Grineski, 2015; Nagler, 2017; Peguero, 2006; Perilla, Norris, & Lavizzo, 2002).

Although numerous studies have examined the vulnerability of various ethnic groups during natural disasters (Carter-Pokras, Zambrana, Mora, & Aaby, 2007; Nick, et.al, 2009; Peguero, A. A., 2006), the present focus is on preparedness among Latino/Hispanic immigrant families and cultural norms, values, preferences, attitudes, access to information, and the utilization of services which may impact or impede timely and effective pre-hurricane actions and preparedness. Critical decision-making complexities for Hispanic/Latino families in planning whether to shelter in place or evacuate (stay or go) may include accessible resources for disaster preparedness and various safety/survival obstacles. Lessons learned from prior preparedness approaches and practices spanning 25 years from 1992-2017 in relation to the evolution and development of

more collaborative approaches to address social inequities of Hispanic/Latino families will be discussed. Practice implications include suggestions for transforming meso- and macro-level disaster preparedness policy infrastructure to support safety, increase involvement, and promote empowerment and resilience among Spanish speaking immigrant families.

Hurricane Preparedness among Hispanic/Latino Communities

Environmental contexts in terms of geographical location within U.S. southern coastal regions and socio-economic relational factors may impede pre-hurricane actions among Hispanic/Latino communities and create challenges for those attempting to assist in disaster preparation. Additional socio-cultural factors include language barriers, social vulnerabilities, information dissemination, and distrust of authorities, which may hinder necessary actions to ensure family safety. For example, Baker (2010) examined preparedness perceptions among 1,200 Florida residents in the aftermath of Hurricanes Charley, Frances, Ivan, Jeanne, Dennis, and Wilma in the early 2000s. Respondents were asked about types of current preparedness activities and their perceptions of recent preparedness levels during named storms of 2004 and 2005. Not surprisingly, ethnicity was found to be a factor in respondent perceptions, with Caucasians scoring higher than Blacks and Hispanics in both current preparation activity and perceptions of preparedness levels during prior recent storms.

Language Barriers. According to the U.S. Census Bureau (2017), 21.6% of the population reported speaking “a language other than English at home,” with Spanish reported as the greatest non-English language spoken in the home for 40.5 million people, or 13.3 % of the U.S. population in 2016. In the context of language alone, Latino/Hispanic immigrants might lack access to written hurricane preparedness information in Spanish and might experience spoken language barriers prohibiting vital effective communication with emergency personnel. Available access to accurate and timely hurricane planning information in their native language would be required to actually utilize the myriad of services critical to effective hurricane preparedness for non-English speaking Hispanic/Latino families (Carter-Pokras, Zambrana, Mora, & Aaby, 2007; Nick, et.al, 2009; Peguero, A. A., 2006).

Thus, language barriers can profoundly impact the effectiveness of planning and preparedness, communication during the hurricane event, as well as emergency response, relief and recovery efforts in the aftermath of a storm. Andrulis, Siddiqui, and Gantner (2007) noted that in the aftermath

of Hurricane Katrina, recovery efforts in New Orleans were confounded by documentation issues and language/cultural differences. This illustrates how ethnic communities are more vulnerable than the majority population both preceding and following natural disasters.

Social Vulnerabilities. Nick, et.al (2009), define vulnerable populations as, “any individual, group, or community whose circumstances create barriers to obtaining or understanding information, or the ability to react as the general population” (p. 124). In terms of social vulnerabilities, Gares and Montz, (2014) outline four approaches to the examination of risk factors. Citing alternative approaches to understanding risks, hazards and vulnerabilities to natural disasters proposed by Baker (2009) and Wisner, Blaikie, Cannon, and Davis (2004), Gares and Montz (2014) state that one must examine “demographic, taxonomic, situational, and contextual/proactive” limitations (p. 38). The demographic approach divides people into groups based on social status, while the taxonomic approach further examines vulnerabilities in terms of classifying perceived causal agents, such as physical, socio-economic, informational, or personal (Gares & Montz, 2014; Baker, 2009; Wisner et.al, 2004). Baker (2009) cautioned that the demographic approach to understanding vulnerability could reduce people into one undifferentiated mass, (e.g., those living in disaster prone areas perceived as powerless), thereby further marginalizing individuals within the defined demographic group and possibly limiting natural human potential. Situational limitations are specific to the actual hazard and contextual/proactive limitations are internal perspectives within the group (Gares & Montz 2014). According to Baker (2009), although the situational approach provides more sensitive analysis “of the powerlessness and dependence of people” (p. 117), she also noted a major disadvantage “is that findings from one disaster situation lack generalizability to other disaster situations” (p. 117). Thus, monolingual Spanish speaking Latino/Hispanic immigrant families in the U.S. may experience social status or demographic barriers; taxonomic or environmental, economic, and resource access obstacles.

In relation to migrant seasonal farmworkers and their families in the agricultural industry, Gares & Montz, (2014) explain how the environmental and geographical locations of migrant farmworkers places them at greater risk during impending natural disasters due to the more rural settings in which they work and the poor housing conditions in which they and their families reside as they follow crop rotations for seasonal work. Thus, geographic and social isolation are important factors to be considered in understanding disaster preparedness obstacles and barriers, complicating existing communications vulnerabilities for Spanish-

speaking Hispanic/Latino families (Burke, Bethel, & Britt, 2012). Latino families may also have unique situational or contextual vulnerabilities within the community. For example, while documentation and classification obstacles may present social and demographic barriers, situational and contextual obstacles may emerge in the form of access disparities in competition for scarce resources to ensure personal, familial, and communal safety and survival during hurricanes.

Information Dissemination. The manner in which emergency planning and relief information is disseminated may also present obstacles in hurricane preparedness for Spanish-speaking Hispanic/Latino families in the U.S. The lack of culturally competent and linguistically proficient emergency personnel can place Spanish-speaking immigrants at particular disadvantage in relation to the majority population during preparation for hurricanes and other natural disasters (Blazer & Murphy, 2008). Research by Maldonado, Collins and Grineski (2016) suggests Latino/Hispanic immigrants may possess less knowledge than the majority population pertaining to self-protection and risk perceptions of disasters, thereby underestimating physical dangers. Likewise, Carter-Pokras, et al. (2007) found that Hispanic immigrants tend to receive less information on environmental disasters via mass media, relying instead on social networks, thus placing them at a particular disadvantage in receiving vital information about impending severe weather risks and needed preparation efforts. Peguero's (2006) research also suggests that Latino/Hispanic minorities "place much greater importance on information provided by interpersonal and familial networks in comparison to Whites" (p. 8). As suggested by Seaton, Quintana, Verkuyten, & Gee (2017), individuals within racial/ethnic groups relate to one another using mutually understood language, behaviors, signals, and cultural practices (p. 685). These preferences for informal communication networks may preclude or interfere with the receipt and heeding of formal hurricane preparedness information, severe weather warnings, and emergency instructions necessary to preserve health and safety. Although hurricane preparedness information is now routinely provided in multiple languages, other means of disseminating critical information implemented at the local levels is needed so as to be effectively utilized by Hispanic/Latino families.

Distrust of Authorities. Aside from language and communication barriers, a fundamental distrust of authorities may confound, impede, or delay non-English speaking Hispanic/Latino immigrant populations from relying on official state-sponsored emergency planning information or governmental assistance from response agencies, seeking instead to verify official information through informal social, familial, and community

networks (Lindsay, 2011; Naglar, 2017). Lack of documentation paperwork and fears of deportation may negatively impact preparedness activity (Peguero, 2006; Driscoll, 2004). Similarly, in their review of the relatively few studies on self-protection from hazards among Hispanic immigrants in the U.S., Maldonado, et al. (2016) suggest that Hispanic immigrants without proper documentation may be particularly reluctant to seek or accept any form of public assistance in times of disaster.

Furthermore, immigration status and deportation fears may hinder foreign-born Hispanic/Latino immigrants from taking advantage of public shelters and other available emergency relief services (Lindsay, 2011; Naglar, 2017). Similarly, Blazer and Murphy (2008) noted, “people who distrust the government are less likely to comply with public health and emergency directives” (p. 2). Blazer and Murphy (2008) further suggest that, “a lack of awareness and community misperceptions regarding the rules” (p. 7) may actually exclude immigrant populations from even seeking assistance. Seemingly, although emergency response agencies may assume that their important messages to mitigate disaster are trusted by minority communities, Paguero’s (2006) research with survivors following Hurricane Andrew suggests that Hispanic/Latino communities indeed do not place much value on disaster information provided by official government sources.

Contextual Barriers. Within rural communities, unique barriers that Latino/Hispanic immigrant families may encounter include lack of transportation assistance, particularly among seasonal agricultural migrant families. Systemic failures in acknowledging diversity of social structures in rural communities, as well as unclear response processes on the part of authorities concerning documentation status and/or loss of documents during times of disaster, further complicate matters (Naglar, 2017). Likewise, Lindsay’s (2011) earlier work noted how lack of adequate documents for personal identification, a common problem for many storm victims after evacuating their homes, has specific legal consequences for foreign-born immigrants. Additionally, failures to recognize and respond to structural inequalities in migrant farming communities, and a general lack of coordination between different government agencies and indigenous tiers in disaster response, create systemic barriers with vulnerable Latino/Hispanic families falling through the cracks (Naglar, 2017). Finally, the general lack of representation or inclusiveness for all community groups in disaster planning processes confounds preparedness and response abilities among vulnerable populations in times of natural disasters.

Historical Perspectives

An historical overview of a number of hurricanes along the southern coastal region of the continental United States and lessons learned provides a basis for examination so as to guide and improve hurricane preparedness policies and procedures affecting Hispanic/Latino families. State and federal policies in the U.S. can provide vital resources or create unnecessary complications affecting preparedness and/or evacuation decisions in times of natural disasters. Examining real-time historical newsprint accounts of storm impacts on Hispanic populations, as well as period-specific follow-up research on special populations, provides necessary context and perspectives to various lessons learned, which sets the stage for the evolution and development of new approaches and practices in times of disaster.

1992. Hurricane Andrew made landfall near Miami, Florida on August 24, 1992, killing more than 65 people and creating in excess of \$41 billion in damages to south Florida, particularly in and around the town of Homestead, Florida, one of the oldest cities in Miami-Dade County. This area is rich in agriculture, with an abundance of winter vegetables, tropical fruits, and ornamental plants produced. A population of more than 10,000 Hispanic/Latino migrant farmworkers and their families were housed in three migrant labor camps when Hurricane Andrew made landfall, hundreds of whom joined the estimated 250,000 left homeless (Clary, 1992; Maxwell, 1992). As noted by Rappe and Rappe (2011), an integrated federal response plan had recently been formed at the time, and FEMA was once again perceived by many as slow to respond, exemplifying the need for effective intergovernmental agency training and coordination of efforts. In fact, Kate Hale of Dade County emergency operations now famous quote during Hurricane Andrew, "Where in the hell is the cavalry on this one? For God's sake, where are they?" (Yanez, 1995) summed up frustrations of many in Florida in the aftermath of Hurricane Andrew. In their study following Hurricane Andrew, Perilla, Norris, and Lavizzo (2002) suggest that responders and providers of services be sensitive to cultural variances in stress responses, "taking into consideration the historical, social, economic, and political factors in which individuals from these groups find themselves" (p.41).

1999. Hurricane Floyd made landfall on the east coast of the U.S. on September 16–17, 1999, creating the largest evacuation at that time in U.S. history with 2.6 million coastal residents from five states ordered to evacuate (Rappe & Rappe, 2011). Hurricane Floyd subsequently caused Flood Floyd in inland areas of eastern North Carolina, both of which resulted in a death toll of 57 and \$4.5 billion in structural damages.

Hurricane Floyd was followed by what many judged to be a very slow federal response with limited assistance for several weeks following the storm (Rappe & Rappe, 2011).

Burke, et al. (2012) facilitated three focus groups on Hurricane Floyd in 2010, with representatives from rural community health care, migrant health, local health departments, and a regional university. Reflecting on work with migrant families during Flood Floyd, several discussion points emerged regarding the dissemination of information to Spanish-speaking populations. These concerns included the inability of the National Oceanic Atmospheric Association (NOAA) to provide media alerts in Spanish, and the dearth of Spanish-speaking channels and local newscasts. Moreover, local emergency response stakeholders expressed concern over needing specific population density information and geographical locations to protect and serve migrant families without the information being used by immigration enforcement officials.

2004. Hurricane Charley made landfall in Punta Gorda, Florida on August 9, 2004 killing 10 people and causing estimated insurance damages and economic loss of \$14 billion. After Hurricane Charley, it was recognized that community-based organizations (CBOs) were underutilized resources, and subsequent improvements were implemented in the dissemination of information. Additionally, recommendations were made for the development of new policies addressing communication, evacuation and continuity of services (United States Department of Commerce, 2004).

Retrospective challenges recognized with both Hurricane Andrew and Charley included language barriers inhibiting communication between non-English-speaking immigrants and emergency responders. Immigrants therefore lacked information in their languages on how to prepare. Due to social isolation, Hispanic/Latinos relied instead on trusted familial and informal networks, which in turn created culturally differing risk perceptions and location-specific challenges. Following Hurricane Andrew, FEMA and other formal response organizations made changes to accommodate immigrant experiences, but still had far to go (Rappe, Lewis & Tierney, 2018).

2005. Hurricane Katrina made landfall along the Mississippi and Louisiana coastlines on August 29, 2005, killing approximately 1,200 people and displacing greater than 400,000 individuals from their homes. Preceding landfall, Mississippi and Louisiana coastal area residents were ordered to evacuate; however, in a study by Eisenman, Cordasco, Asch, Golden, and Glik (2007), respondents reported not being provided with information on where to evacuate, not having adequate transportation,

fuel, or size of personal vehicles that would accommodate all family members. Furthermore, Kao (2007) stated that Hispanic/Latinos with limited proficiency in English were more likely to seek assistance from within their ethnic subgroups than from outside sources. Although much media attention focused on the city of New Orleans and the displaced citizens following the levee breaches, Muniz (2006) purported that Hispanic/Latino populations impacted by that storm in the tri-state area of Mississippi, Louisiana, and Alabama were vast. Muniz (2006) estimated that 100,000 Mexicans and Mexican Americans resided in the area at the time with overall Hispanic/Latino populations totaling approximately 230,000 across the geographic area (Muniz, 2006; U.S. Census Bureau, 2004). While media coverage in the aftermath of the storm focused extensively on African American minority subgroups within the greater New Orleans area, Hispanic/Latino immigrant populations were largely ignored (Kao, 2006; Muniz, 2006). According to Kao (2006) among Hispanic/Latino populations, the concentration of Honduran immigrants is greater in this Gulf Coast region than anywhere else in the U.S., yet their complete absence from Katrina media coverage exemplifies marginalization of Hispanic/Latino subgroups within the greater society. Kao (2006) adds that, “their fears are not unwarranted, given that the Department of Homeland Security has not assured that individuals who seek help will be protected from prosecution and deportation” (p. 225). The media’s minimal coverage of Hispanic/Latino immigrant populations played a role in the continuing exacerbation of marginal status and racial/ethnic disparities.

2017. Houston, Texas experienced the wrath of Hurricane Harvey on August 25, 2017. As of 2014, it was estimated that 575,000 undocumented immigrants were living in the Houston area, the majority of whom were from Latin America (Passel & Cohn, 2017). Romero and Jordan (2017) reported that rumors, fears, and mixed messages created panic and mistrust of authorities among Hispanic/Latino communities concerning evacuation, shelters, and immigration enforcement. They further reported examples of conflicting statements by authorities. One example included Border Patrol and Immigration and Customs Enforcement (ICE) joint statements that authorities would not engage in standard operating procedures at shelters, evacuation checkpoints, or food banks. At the same time, Border Patrol did not immediately suspend immigration checkpoint operations, and both of these federal agencies announced that they would enforce existing laws (Romero and Jordan, 2017).

Subsequently, Hurricane Irma devastated Immokalee, Florida on September 10, 2017. Immokalee, a rural agricultural community, borders the Everglades and provides a large portion of U.S. tomato crop. Agricultural workers, primarily from Central America and Haiti, are paid very little, with parents and grown children residing in uninsurable mobile homes to help make financial ends meet (Irland & Clark, 2017; McDonnell, 2017). Immokalee has one of the highest poverty rates in Florida, affecting approximately 33% of the estimated 25,000 residents (McDonnell, 2017). Immokalee residents sought refuge before the storm in schools despite fears of deportation. Furthermore, although post-storm government assistance arrived right away in the nearby Florida Keys, McDonnell (2017) reported that the government response was much slower in the rural area of Immokalee, and there was widespread confusion about assistance relief following the hurricane (McDonnell, 2017). Similar to Hurricane Katrina, it appears that socioeconomic and racial disparities exist between rural immigrant farming communities and wealthier areas in both disaster planning and response.

Historical Implications

Examining previous disaster management efforts in terms of preparation, response, and recovery can be helpful in preparing new and more effective strategies for future events. Historically, various U.S. state and federal policies have created challenges for Hispanic/Latino families in making critical decisions whether to stay or go during natural disasters. Lack or loss of adequate personal identification further complicates evacuation decisions for many Hispanic/Latino families, and documentation status may result in specific consequences under U.S. immigration laws. Lindsay (2011) purports that enforcement of immigration laws may inhibit effective hurricane preparedness, thwarting the promotion of safety for foreign nationals, as well as access to emergency disaster relief following storm events. As can be gleaned over decades of hurricane events, each storm event presents new and unique challenges for Hispanic/Latino families and communities in the United States. Changes to local, state, and federal policies is an ongoing necessity, and sustainable evaluation of effectiveness is needed.

One lesson identified over these 25 years involves communication. According to Subervi (2010), emergency communication problems are multifaceted at national, state, and local levels, and the practices pertaining to non-English speaking populations are particularly troublesome for the safety and welfare of minority populations and culturally diverse communities that are impacted during natural disaster

preparation, mitigation, and recovery. Subveri (2010) also noted that prior to the creation of the Integrated Public Alert and Warning System (IPAWS) through the Federal Emergency Management Administration (FEMA), government entities charged with managing emergencies were not fully equipped to deliver information in foreign languages, and various responsible agencies oftentimes operated independently of one another in ensuring preparedness and/or evacuation in times of pre-disaster hurricane preparedness, as well as strategies for intervention and ways of providing support and safety for all residents (Subveri, 2010; FEMA, 2008).

Conclusions and Implications for Practice

Ecological systems theory and lessons learned from previous disasters suggest implications for policy, practice, and intervention strategies. Ecological systems theory formulated by Urie Bronfenbrenner (1981) posits five systems within the environment that impact human behavior within the social environment. These include interactions with the micro-system, meso-system, exosystem, macro-system, and chronosystem. Macro-level influences include cultural contexts and may involve racial, ethnic, and socioeconomic status. These macro-level structural inequalities need to be addressed in order to better support Hispanic/Latino families in pre-disaster planning to preserve health and safety. Recommendations include providing inclusive multi-level policy infrastructure and interventions to support safety, increase coping capacities, and promote resilience among Spanish-speaking immigrant families. Engaging these families in hurricane planning and response acknowledges their vitally important roles and contributions, thereby increasing coping capacities and resilience.

Policy development suggestions include both meso-and-macro-level reform, beginning with needs assessments focusing on vulnerable immigrant groups and populations. According to ecological systems theory, the meso-system consists of the interactions between various micro-systems within the larger community (Bronfenbrenner, 1981). At the meso-level, community needs must be assessed so as to guide macro-level policy reforms. This necessitates including Hispanic/Latino family members, local indigenous leaders, clergy, harbor masters, employers, political leaders, and other critical community stakeholders. A suggested goal is to be as inclusive as possible so as to fully represent Hispanic/Latino marginalized subgroups. State and federal policies would thus be driven by information from the local level.

A second suggestion is to develop and implement new and more effective communication modalities that specifically address prior deficiencies for dispersing vital emergency preparedness and planning information to Hispanic/Latino families using multiple methods of delivery and varied modalities. To that end, in his statement to FEMA IPAWS on *Ensuring Effective and Reliable Alerts and Warnings* (U.S. Committee on Homeland Security, 2018), Mississippi Representative Bennie Thompson provided an accurate historical reflection on complications with communications in emergency alert systems dating back to Hurricane Katrina in 2005. He acknowledged that communication improvements were still needed, and that IPAWS is exploring new integrative technologies and networking devices. Representative Thompson went on to express concerns on conveying important pre-storm information to non-English speaking residents to preserve safety and welfare when hurricanes strike:

IPAWS platform is currently capable of pushing out alerts and warnings in Spanish, and I am interested in learning whether that capability is being utilized and what efforts FEMA is undertaking to broaden the accessibility for those who cannot read or speak English or Spanish. Moreover, to ensure that emergency alerts and warnings are available to those who live beyond the reach of a cell tower, FEMA must continue to pursue novel approaches to alerts and warnings to reach those who are not watching TV or listening to the radio (U.S. Committee on Homeland Security, 2018, p. 6).

For emergency communications to be effective, information must be accurate, accessible, comprehensive, and understandable by all Spanish speaking Hispanic/Latinos, and dispersed using culturally trusted modes of delivery. Furthermore, utilizing community-based approaches and the strategic use of cultural brokers could serve to build trust within Hispanic/Latino communities (Rappe, Lewis & Tierney, 2018). Cuervo, Leopold and Baron (2017) advocated educating community-based organizations (CBOs), emergency responders, and local residents using a curriculum-facilitating knowledge about disaster risks, resources, preparedness, and response so as to identify community strengths and gaps, create collective action plans, and ultimately strengthen Hispanic/Latino community connections with local CBOs. Additionally, as group members unite in decisive action, the social standing of marginalized Hispanic/Latino communities could be enhanced (Seaton, et.al, 2017). Importantly, this curriculum recognizes the cultural significance of familial and informal neighborhood connections as useful resources within Hispanic/Latino communities (Cuervo, et al., 2017).

Finally, evaluations of effectiveness conducted after an event could provide data to aid in planning for future events.

Yet another suggestion for practice would be to include Hispanic/Latino workers from various industries to serve two-fold benefits in disaster preparation and response. One is creating a trusted information-sharing network and the second benefit being a mobile response team. According to Fussell (2009), Hispanic/Latinos workers tend to concentrate in four primary sectors: agriculture, food processing, construction, and service industries. Within each of these sectors, many foreign-born proficient Spanish-speaking Hispanic/Latino immigrants are adept at moving about to obtain higher wages. These workers have developed their own networks within each sector. Fussell (2009) posited including Hispanic/Latinos as rapid-response workforce following hurricane events. Although Fussell's (2009) work focused on creating a regionally mobile labor force following disasters, the authors propose that these workers could be part of the community planning to serve two-fold advantages. The first is to create a trusted, culturally sensitive information dissemination system prior to and following hurricanes, so that accurate and timely information is provided for workers so that Hispanic/Latino families can mobilize action plans preceding storm events and identify trusted services following disasters. The second advantage aligns with Fussell's (2009) proposed regional mobile workforce responding to greater community needs following disasters. The authors further propose the formation of a reserve Hispanic/Latino labor force to assist with coordinated response and recovery efforts following disaster.

A final suggestion for practice implications to overcome cultural challenges is to address legal issues clarifying distinctions between enforcement of immigration laws and disaster policy exceptions. Sustained disaster planning efforts within Hispanic/Latino communities should include designated member(s) staying informed and abreast of current applicable ICE and Border Patrol policies prior to hurricanes so as to avoid mixed messages during and after severe storm events. This information needs to then be disseminated using a culturally sensitive manner by trusted members of the Hispanic/Latino community. This requires combined efforts and collaboration between emergency management officials, ICE, Border Patrol, CBOs, and local cultural brokers to inform Hispanic/Latino community members.

The importance of coordinating preparedness, planning, response, and continuity of efforts cannot be over emphasized. "Collaborative planning leads to increased availability of resources, sharing of responsibility, expertise and skills, better communication, helps eliminate

duplication of efforts, improves consistency of information, and results in a more effective and efficient response” (USA Center for Rural Public Health Preparedness, 2007, p. 6). Coordination of efforts are needed at the local, community, regional, state, and national levels to enhance existing meso- and macro-level practice and procedures to be inclusive and culturally sensitive, supporting health and safety of Hispanic/Latino families in times of disaster.

References

- Andrulis, D. P., Siddiqui, N. J., & Gantner, J. L. (2007). Preparing racially and ethnically diverse communities for public health emergencies. *Health Affairs*, 26(5), 1269–1279.
- Baker, S. M. (2009). Vulnerability and resilience in natural disasters: A marketing and public policy perspective. *Journal of Public Policy and Marketing* 28(1), 114–123.
- Blazer, J. & Murphy, B. (2008). Addressing the needs of immigrants and limited English communities in disaster planning and relief: Lessons for government, disaster relief agencies, and community-based organizations. *National Immigration Law Center: Immigrant's Rights Update*, 22(8), 1–11.
- Bronfenbrenner, U. (1981) *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.
- Burke, S., Bethel, J. W. & Britt, A. F. (2012). Assessing disaster preparedness among Latino migrant and seasonal farmworkers in eastern North Carolina. *International Journal of Environmental Research and Public Health*, 9, 3115–3133.
- Carter-Pokras, O., Zambrana, R. E., Mora, S. E., & Aaby, K. A. (2007). Emergency preparedness: Knowledge and perceptions of Latin American immigrants. *Journal of Health Care for the Poor and Underserved*, 18, 465–481.
- Clary, M. (1992). Migrant workers' lives are uprooted by storm: Florida: The hurricane has destroyed their homes and wiped away the fields where they make their living. *The Los Angeles Times*, September 1, 1992. Retrieved from: http://articles.latimes.com/1992-09-01/news/mn-6937_1_hurricane-andrew
- Cordasco, K. M., Eisenman, D. P., Glik, D., Golden, J. F., & Asch, S. M. (2007). "They Blew the Levee:" Distrust of authorities among Hurricane Katrina evacuees. *Journal of HealthCare for the Poor and Underserved*, 18, 277–282.
- Cuervo, I., Leopold, L., & Baron, S. (2017). Promoting community preparedness and resilience: A Latino immigrant community-driven project following Hurricane Sandy. *American Journal of Public Health*, 107(2), 161–164.
- Eisenman, D. P., Cordasco, K. M., Asch, S., Golden, J. F., & Glik, D. (2007). Disaster planning and risk communication with vulnerable communities: Lessons from Hurricane Katrina. *American Journal of Public Health*, 97(1), 109–114.
- Eisenman, D. P., Glik, D., Gonzalez, R. M., Zhou, Q., Tseng, C. & Asch, S. M. (2009). Improving Latino disaster preparedness using social networks. *American Journal of Preventative Medicine*, 37(6), 512–517.
- Fussel, E. (2009). Hurricane chasers in New Orleans: Latino immigrants as a source of a rapid response labor force. *Hispanic Journal of Behavioral Sciences*, 31(3), 375–394.
- Gages, C. E. & Montz, B. E. (2014). Disaster vulnerability of migrant and seasonal farmworkers: A comparison of Texas and North Carolina. *Southeastern Geographer*, 54(1), 36–54.
- Hurricane Science. (2015). *Hurricanes: Science and Society: 1965 - Hurricane Betsy*. University of Rhode Island, Graduate School of Oceanography. Retrieved from: <http://www.hurricanescience.org/history/storms/1960s/betsy/>
- Hying, L., Wang, C., & Yamal, B. (2016). Vulnerability of families and households to natural hazards: A case study of storm surge flooding in Sarasota County, Florida. *Applied Geography*, 76, 184–197.
- Kao, G. (2006). Where are the Asian and Hispanic victims of Katrina? A metaphor for invisible minorities in contemporary racial discourse. *Dubois Review: Social Science Research on Race*, 3(1), 223–231.

- Irand, K., & Clark, L. (2017, September 13). In this Florida city, Irma took their jobs as well as their homes. *The Miami Herald*. Retrieved from: <https://www.miamiherald.com/latest-news/article173202081.html>
- Lindsay, B. R. (2011). *Federal Evacuation Policy: Issues for Congress*. Congressional Research Service 7-5700. <http://www.crs.gov> RL34745
- Lippmann, Amy L. (2011). "Disaster Preparedness in Vulnerable Communities." *International Law and Policy Review* 1(1), 69–96.
- Maldonado, A., Collins, T. W., & Grineski, S. (2016). Hispanic immigrants' vulnerabilities to flood and hurricane in two United States metropolitan areas. *Geographical Review*, 106(1), 109–135.
- Marlowe, J. & Bogen, R. (2015). Young people from refugee backgrounds as a resource for disaster risk reduction. *International Journal of Disaster Risk Reduction*, 14, 125–131.
- Maxwell, B. (1992, September 14). Migrant Farmworkers All But Forgotten in Aftermath of Hurricane Andrew. *The Sun Sentinel*. Retrieved from: <https://www.sun-sentinel.com/news/fl-xpm-1992-09-14-9201210482-story.html>
- McDonnell, P. J. (2017, September 12). These migrant workers earn \$350 a week in the fields. Now Irma has destroyed their homes. *The Los Angeles Times*. Retrieved from: <https://www.latimes.com/nation/la-na-irma-immokalee-20170912-story.html>
- McEwen, M. M., Boyle, J. S., Hilfinger, D. K. (2015). Undocumentedness and public policy: The impact on communities, individuals, and families along the Arizona/Sonora border. *Nursing Outlook*, 63, 77–85.
- Muniz, B. (2006). *In the Eye of the Storm: How the government and private response to Hurricane Katrina failed Latinos* [White Paper]. National Council of La Raza. Retrieved from: <http://publications.unidosus.org/handle/123456789/1365>
- Nagler, E. (2017). Filling in the gaps: Inequitable emergency preparedness and disaster relief policies serving immigrant and refugee communities. *The International Undergraduate Journal for Service-Learning, Leadership, and Social Change*, 6(2), 10–22.
- Nick, G. A., Savoia, E., Elqura, L., Crowther, M. S., Cohen, B., Leary, M., Wright, T., Auerbach, J. & Koh, H. K. (2009). Emergency preparedness for vulnerable populations: People with special health-care needs. *Public Health Reports*, 124, 334–343.
- Peguero, A. A. (2006). Latino disaster vulnerability: The dissemination of hurricane mitigation information among Florida's homeowners. *Hispanic Journal of Behavioral Sciences*, 28(1), 5–22.
- Perilla, J. L., Norris, F. H. & Lavizzo, E. A. (2002). Ethnicity, culture, and disaster response: Identifying and explaining ethnic differences in PTSD six months after Hurricane Andrew. *Journal of Social and Clinical Psychology*, 21, (1), 20–45.
- Passel, J. S. & Cohn, D. (2017). *20 metro areas are home to six-in-ten unauthorized immigrants in U.S.* Pew Research Center. Retrieved from: <http://www.pewresearch.org/fact-tank/2017/02/09/us-metro-areas-unauthorized-immigrants/>
- Rappe, P. T., Lewis, M. L., & Tierney, L. (2018). "Stay or go! Challenges for Hispanic populations preceding natural disaster." Baccalaureate Program Directors (BPD) Conference, Human Rights and Social Justice Track, March 14–18, 2018, Atlanta, GA.
- Rappe, L. O. & Rappe, P. T. (2011). Learning from relief effort experiences during large scale disasters in the U.S.: Lessons learned. *Presentation to Non-Profit Professionals involved in Tohoku Earthquake, Tsunami and Nuclear Disaster Response*, Tokyo, Japan, June 23, 2011.

- Rios, E. (2009). Emergency preparedness for the Hispanic community: Emergency and health preparedness strategies to reach the Hispanic population. *Presentation to the Institute of Medicine of the National Academies, Health Policy Presentations*, Washington, D.C., USA, October 30, 2009.
- Romero, S., & Jordan, M. (2017, August 29). It was an uneasy time for immigrants in Texas: Then the rains came. *The New York Times*. Retrieved from: <https://www.nytimes.com/2017/08/29/us/immigration-harvey-border-patrol.html>
- Seaton, E. K., Quintana, S., Verkuyten, M., & Gee, G. C. (2017). Peers, Policies, and Place: The Relation Between Context and Ethnic/Racial Identity. *Child Development*, 88(3), 683–692.
- Subervi, F. (2010). An Achilles heel in emergency communications: The deplorable policies and practices pertaining to Non-English speaking populations. *Emergency Communications Project Report, Center for the Study of Latino Media & Markets*, Texas State University, San Marcos, TX, USA, December, 2010.
- United States. Census Bureau. (2002). *Hispanic Population by Percent Change 1990 to 2000 for the United States, Regions, Divisions, and States*, Reports, Series CENSR-4, Washington, D.C., November, 2002. Retrieved from: <https://www.census.gov/prod/2001pubs/c2kbr01-2.pdf>
- United States. Census Bureau. (2017). *New American Community Survey Statistics for Income, Poverty and Health Insurance Available for States and Local Areas: Statistics for More Than 40 Demographic and Economic Topics Provide Detailed Profiles of Communities Nationwide*, Release Number CB17-157, September 14, 2017. Retrieved from: <https://www.census.gov/newsroom/press-releases/2017/acs-single-year.html?CID=CBSM+ACS16>
- United States. Department of Commerce (2004). *Service Assessment: Hurricane Charley*, August 9–15, 2004.
- United States. Department of Health & Human Services, Office of Minority Affairs. (2015). Cultural and linguistic competency in disaster preparedness and response fact sheet. *Public Health Emergency: Public Health and Medical Emergency Response for a Nation Prepared*. Retrieved from: <https://www.phe.gov/Preparedness/planning/abc/Pages/linguistic-facts.aspx>
- United States. Department of Health & Human Services, Office of Minority Affairs. (2017). *Cultural Competency Curriculum for Disaster Preparedness and Crisis Response*. Retrieved from: <https://cccdpcr.thinkculturalhealth.hhs.gov/>
- United States. Department of Health & Human Services, Office of Minority Affairs. (2015). *National Culturally and Linguistically Appropriate Services Standards*. Retrieved from: <https://www.thinkculturalhealth.hhs.gov/>
- United States. Committee on Homeland Security. (2018). *Ensuring effective and reliable alerts and warnings: Hearing before the subcommittee on emergency preparedness, response and communications of the Committee on Homeland Security, House of Representatives. February 6, 2018*.
- United States. Federal Emergency Management Agency. (2008). FEMA disaster program information. Washington, DC: FEMA.
- USA Center for Rural Public Health Preparedness. (2007). *Partnering to Achieve Rural Emergency Preparedness: A Workbook for Healthcare Providers in Rural Communities*. Texas A&M Health Science Center School of Rural Public Health.
- Wisner, B., Blaikie, P., Cannon, T., & Davis, I. (2004). In *At risk: Natural Hazards, People's vulnerability, and disasters*. London: Routledge.

Yanez, L. (1995). Officials say disaster chief caused chaos. *The Sun Sentinel*, August 27, 1995. Retrieved from: <https://www.sun-sentinel.com/news/fl-xpm-1995-08-27-9508260245-story.html>