

CONVERGE Social Vulnerability and Disasters Annotated Bibliography

This annotated bibliography includes resources focused on social vulnerability and disasters. This bibliography is meant to support those interested in learning more about the social factors that contribute to vulnerability to disasters and to complement the [CONVERGE Social Vulnerability and Disasters Training Module](#). These references were compiled through searching Web of Science and Google Scholar databases. If you identify missing references, please send them to converge@colorado.edu, and we will add them to the list.

Citation

Annie E. Casey Foundation. (2016, August). *Taking data apart: Why a data-driven approach matters to race equity*. <https://www.aecf.org/blog/taking-data-apart-why-a-data-driven-approach-matters-to-race-equity/>

Abstract

N/A

Citation

Austin, M. P., Christl, B., McMahon, C., Kildea, S., Reilly, N., Yin, C., Simcock, G., Elgebeili, G., Laplante, D.P., & King, S. (2017). Moderating effects of maternal emotional availability on language and cognitive development in toddlers of mothers exposed to a natural disaster in pregnancy: The QF2011 Queensland Flood Study. *Infant Behavior and Development*, 49, 296-309. <https://doi.org/10.1016/j.infbeh.2017.10.005>

Abstract

Background: Prenatal maternal stress exposure has been linked to sub-optimal developmental outcomes in toddlers, while maternal emotional availability is associated with better cognitive and language abilities. It is less clear whether early care-giving relationships can moderate the impact of prenatal stress on child development. The current study investigates the impact of stress during pregnancy resulting from the Queensland Floods in 2011 on toddlers' cognitive and language development, and examines how maternal emotional availability is associated with these outcomes.

Methods: Data were available from 131 families. Measures of prenatal stress (objective hardship, cognitive appraisal, and three measures of maternal subjective stress) were collected within one year of the 2011 Queensland floods. Maternal emotional availability was rated from video-taped mother-child play sessions at

16 months: sensitivity (e.g., affective connection, responsiveness to signals) and structuring (e.g., scaffolding, guidance, limit-setting). The toddlers' cognitive and language development was assessed at 30 months. Interactions were tested to determine whether maternal emotional availability moderated the relationship between prenatal maternal stress and toddler cognitive and language functioning.

Results: Prenatal stress was not correlated with toddlers' cognitive and language development at 30 months. Overall, the higher the maternal structuring and sensitivity, the better the toddlers' cognitive outcomes. However, significant interactions showed that the effects of maternal structuring on toddler language abilities depended on the degree of prenatal maternal subjective stress: when maternal subjective stress was above fairly low levels, the greater the maternal structuring, the higher the child vocabulary level.

Conclusion: The current study highlights the importance of maternal emotional availability, especially structuring, for cognitive and language development in young children. Findings suggest that toddlers exposed to higher levels of prenatal maternal stress in utero may benefit from high maternal structuring for their language development.

Citation

Bankoff, G. (2001). Rendering the world unsafe: 'Vulnerability' as Western discourse. *Disasters*, 25(1), 19-35. <https://doi.org/10.1111/1467-7717.00159>

Abstract

Disasters seem destined to be major issues of academic enquiry in the new century if for no other reason than that they are inseparably linked to questions of environmental conservation, resource depletion and migration patterns in an increasingly globalised world. Unfortunately, inadequate attention has been directed at considering the historical roots of the discursive framework within which hazard is generally presented, and how that might reflect particular cultural values to do with the way in which certain regions or zones of the world are usually imagined. This paper argues that tropicality, development and vulnerability form part of one and the same essentialising and generalising cultural discourse that denigrates large regions of world as disease-ridden, poverty-stricken and disaster-prone.

Citation

Berkowitz, G. S., Wolff, M. S., Janevic, T. M., Holzman, I. R., Yehuda, R., & Landrigan, P. J. (2003). The World Trade Center disaster and intrauterine growth restriction. *JAMA*, 290(5), 595-596. <https://doi.org/10.1001/jama.290.5.595-b>

Abstract

N/A

Citation

Blakie, P., Cannon, T., Davis, I., & Wisner, B. (1994). *At risk: Natural hazards, people's vulnerability, and disasters*. Routledge.



Abstract

N/A

Citation

Bolin, R., & Klenow, D. J. (1983). Response of the elderly to disaster: An age-stratified analysis. *The International Journal of Aging and Human Development*, 16(4), 283-296. <https://doi.org/10.2190/mqeg-yn39-8d5v-wkmp>

Abstract

This article analyzes the effects of chronological age of disaster victims on their responses to stress effects of natural disasters. Previous research is reviewed and major findings of that research are noted. Findings regarding disaster losses, physical impacts, aid utilization patterns, kinship relations, relative deprivation, social-psychological impacts, neglect of elderly disaster victims, and differential recovery rates by age are retested on new data. Data described herein were gathered using survey techniques in two disaster-stricken communities in Texas. Elderly victims' responses to the tornadoes are compared to a nonelderly (under sixty years of age) group to assess differences. Findings of previous research were, in many instances, supported although certain divergences between the current findings and preceding findings are noted, particularly in rates of recovery.

Citation

Bolin, R., & Kurtz, L. C. (2018). Race, class, ethnicity, and disaster vulnerability. In H. Rodriguez, W. Donner, & J. E. Trainor (Eds.), *Handbook of disaster research* (2nd ed., pp. 181-203). Springer.

Abstract

This chapter presents a critical review of race, class, and ethnicity as used in both historic and recent disaster research. Using critical race theory, political ecology, and related social science theories, we assess a selection of disaster studies and suggest ways that disaster research could be enhanced by engaging new approaches to social inequality and disaster vulnerability. We next review recent research on several major disasters, including the Indian Ocean Tsunami and Hurricane Katrina to illustrate the use of vulnerability theory, critical geography, and political ecology in analyzing the production of hazardous landscapes, which place people at risk. The chapter concludes with a discussion of environmental justice research using the chronic impacts of radiation hazards on the Navajo Nation as an example of the convergence of disaster studies and environmental justice concerns.

Citation

Barnshaw, J., & Trainor, J. (2007). Race, class, and capital amidst the Hurricane Katrina diaspora. In D. L. Brunsma, D. Overfelt, & J. S. Picou (Eds.), *The sociology of Katrina: Perspectives on a modern catastrophe* (pp. 91–105). Rowman & Littlefield.



Abstract

N/A

Citation

Brodie, M., Weltzien, E., Altman, D., Blendon, R. J., & Benson, J. M. (2006). Experiences of Hurricane Katrina evacuees in Houston shelters: Implications for future planning. *American Journal of Public Health, 96*(8), 1402-1408. <https://doi.org/10.2105/ajph.2005.084475>

Abstract

Objectives: To shed light on how the public health community can promote the recovery of Hurricane Katrina victims and protect people in future disasters, we examined the experiences of evacuees housed in Houston area shelters 2 weeks after the hurricane.

Methods: A survey was conducted September 10 through 12, 2005, with 680 randomly selected respondents who were evacuated to Houston from the Gulf Coast as a result of Hurricane Katrina. Interviews were conducted in Red Cross shelters in the greater Houston area.

Results: Many evacuees suffered physical and emotional stress during the storm and its aftermath, including going without adequate food and water. In comparison with New Orleans and Louisiana residents overall, disproportionate numbers of this group were African American, had low incomes, and had no health insurance coverage. Many had chronic health conditions and relied heavily on the New Orleans public hospital system, which was destroyed in the storm.

Conclusions: Our results highlight the need for better plans for emergency communication and evacuation of low-income and disabled citizens in future disasters and shed light on choices facing policymakers in planning for the long-term health care needs of vulnerable populations.

Citation

Brooklyn Center for Independence of the Disabled v. Bloomberg, 11 Civ. 6690 JMF (S.D.N.Y. 2013).

Abstract

N/A

Citation

Broughton, D. D., Allen, E. E., Hannemann, R. E., & Petrikin, J. E. (2006). Getting 5000 families back together: Reuniting fractured families after a disaster: The role of the National Center for Missing & Exploited Children. *Pediatrics, 117*(5), S442-S445. <https://doi.org/10.1542/peds.2006-0099S>



Abstract

Although the hurricane season of 2005 was one of the worst on record, 2 storms, Hurricanes Katrina and Rita, were particularly devastating to the Gulf Coast region. Among the other tragedies came the news that nearly 5000 children became dislocated from their families as a result of these 2 storms.

Citation

Browne, K.E., & Peek L. (2014). Beyond the IRB: An ethical toolkit for long-term disaster research. *International Journal of Mass Emergencies and Disasters*, 32(1), 82-120. <http://ijmed.org/articles/651/>

Abstract

This article argues for expanding the ethical frame of concern in disaster research from the early phases of site access to longer-term issues that may arise in the field. Drawing on ethical theory, these arguments are developed in five sections. First, we identify the philosophical roots of ethical principles used in social science research. Second, we discuss how ethical concerns span the entire lifecycle of disaster-related research projects but are not fully addressed in the initial protocols for gaining Institutional Research Board (IRB) approval. Third, we introduce the idea of the philosophically informed “ethical toolkit,” established to help build awareness of moral obligations and to provide ways to navigate ethical confusion to reach sound research decisions. Specifically, we use the work of W. D. Ross to introduce a template of moral considerations that include fidelity, reparation, gratitude, justice, beneficence, self-improvement, and non-maleficence. We suggest that in the absence of a clear framework that researchers can use to think through ethical dilemmas as they arise, Ross’ pluralist approach to ethical problem solving offers flexibility and clarity and, at the same time, leaves space to apply our own understanding of the context in question. Fourth, we draw on six examples from our research studies conducted following Hurricane Katrina. Using these examples, we discuss how, in retrospect, we can apply Ross’ moral considerations to the ethical issues raised including: (1) shifting vulnerability among disaster survivors, (2) the expectations of participants, and (3) concerns about reciprocity in long-term fieldwork. Fifth, we consider how the ethical toolkit we are proposing may improve the quality of research and research relationships.

Citation

Brunkard, J., Namulanda, G., & Ratard, R. (2008). Hurricane Katrina deaths, Louisiana, 2005. *Disaster Medicine and Public Health Preparedness*, 2(4), 215-223. <https://doi.org/10.1097/dmp.0b013e31818aaf55>

Abstract

Objective: Hurricane Katrina struck the US Gulf Coast on August 29, 2005, causing unprecedented damage to numerous communities in Louisiana and Mississippi. Our objectives were to verify, document, and characterize Katrina-related mortality in Louisiana and help identify strategies to reduce mortality in future disasters.

Methods: We assessed Hurricane Katrina mortality data sources received in 2007, including Louisiana and out-of-state death certificates for deaths occurring from August 27 to October 31, 2005, and the Disaster Mortuary Operational Response Team's confirmed victims' database. We calculated age-, race-, and sex-specific



mortality rates for Orleans, St Bernard, and Jefferson Parishes, where 95% of Katrina victims resided and conducted stratified analyses by parish of residence to compare differences between observed proportions of victim demographic characteristics and expected values based on 2000 US Census data, using Pearson chi square and Fisher exact tests.

Results: We identified 971 Katrina-related deaths in Louisiana and 15 deaths among Katrina evacuees in other states. Drowning (40%), injury and trauma (25%), and heart conditions (11%) were the major causes of death among Louisiana victims. Forty-nine percent of victims were people 75 years old and older. Fifty-three percent of victims were men; 51% were black; and 42% were white. In Orleans Parish, the mortality rate among blacks was 1.7 to 4 times higher than that among whites for all people 18 years old and older. People 75 years old and older were significantly more likely to be storm victims ($P < .0001$).

Conclusions: Hurricane Katrina was the deadliest hurricane to strike the US Gulf Coast since 1928. Drowning was the major cause of death and people 75 years old and older were the most affected population cohort. Future disaster preparedness efforts must focus on evacuating and caring for vulnerable populations, including those in hospitals, long-term care facilities, and personal residences. Improving mortality reporting timeliness will enable response teams to provide appropriate interventions to these populations and to prepare and implement preventive measures before the next disaster.

Citation

Carr, V. J., Lewin, T. J., Webster, R. A., & Kenardy, J. A. (1997). A synthesis of the findings from the Quake Impact Study: A two-year investigation of the psychosocial sequelae of the 1989 Newcastle earthquake. *Social Psychiatry and Psychiatric Epidemiology*, 32(3), 123-136. <https://doi.org/10.1007/bf00794611>

Abstract

This paper summarizes the major findings from the Quake Impact Study (QIS), a four-phase longitudinal project that was conducted in the aftermath of the 1989 Newcastle (Australia) earthquake. A total of 3,484 subjects participated in at least one component of the QIS, comprising a stratified sample of 3,007 drawn from community electoral rolls and 477 from specially targeted supplementary samples (the injured, the displaced, the owners of damaged businesses, and the helpers). Subjects' initial earthquake experiences were rated in terms of weighted indices of exposure to threat and disruption. Psychological morbidity was measured at each phase using the General Health Questionnaire (GHQ-12) and the Impact of Event Scale (IES). Selected findings and key conclusions are presented for each of six areas of investigation: service utilization during the first 6 months post-disaster; patterns of earthquake experience and short-term (6-month) psychosocial outcome; earthquake exposure and medium term (2-year) psychosocial outcome; vulnerability factors and medium-term psychosocial outcome; specific community groups at increased risk (e.g., the elderly and immigrants from non-English-speaking backgrounds); the effects of stress debriefing for helpers. Threshold morbidity (i.e., likely caseness) rates are also presented for a broad range of subgroups. In addition to presenting an overview of the QIS, this paper synthesizes the major findings and discusses their implications for future disaster management and research from a mental health perspective.



Citation

Centers for Disease Control and Prevention. (CDC). (2020, September 15). *Disability and health inclusion strategies*. <https://www.cdc.gov/ncbddd/disabilityandhealth/disability-strategies.html>

Abstract

N/A

Citation

Centers for Disease Control and Prevention (CDC). (2018). *CERC: Messages and audiences*. https://emergency.cdc.gov/cerc/ppt/CERC_Messages_and_Audiences.pdf

Abstract

N/A

Citation

Chandra, A., & Acosta, J. D. (2009). *The role of nongovernmental organizations in long-term human recovery after disaster: Reflections from Louisiana four years after Hurricane Katrina*. RAND Corporation. https://www.rand.org/pubs/occasional_papers/OP277.html

Abstract

In the four years since Hurricane Katrina, volunteers, and nongovernmental organizations (NGOs) have been instrumental in supporting community efforts to recover and rebuild from the devastation in the Gulf States region. The period also provides a case study of the complex process of human recovery and the resource and policy constraints on NGO involvement in these efforts. Human recovery is the process of rebuilding social and daily routines and support networks that foster physical and mental health and well-being. To capture lessons learned for improving human recovery efforts in future disasters, RAND researchers conducted a facilitated discussion with NGO leaders representing a broad spectrum of organizations in Louisiana. The results of that discussion highlight ongoing challenges facing NGOs in terms of appropriate recovery models and financing, NGO-government coordination, and processes to formalize and operationalize NGO roles and responsibilities. Drawing on these lessons, this paper also offers a series of state and federal policy recommendations and a set of possible future research directions to assess and address barriers to long-term human recovery efforts.

Citation

CITI Program. (n.d.). *SBE Refresher 1 - History and Ethical Principles*. <https://about.citiprogram.org/en/course/human-subjects-research-social-behavioral-educational-sbe-refresher-1/>

Abstract

N/A



Citation

Collins, T. W., Jimenez, A. M., & Grineski, S. E. (2013). Hispanic health disparities after a flood disaster: Results of a population-based survey of individuals experiencing home site damage in El Paso (Texas, USA). *Journal of Immigrant and Minority Health, 15*(2), 415-426. <https://doi.org/10.1007/s10903-012-9626-2>

Abstract

In 2006, El Paso County, a predominantly Hispanic urban area, was affected by a flood disaster; 1,500 homes were damaged. We assessed the health impacts of the disaster upon 475 individuals whose homes were flood-damaged using mail survey data and logistic regression. Substantial proportions of individuals had one or more physical (43 %) or mental (18 %) health problem in the four months following the floods; 28 % had one or more injury or acute effect related to post-flood cleanup. Adverse event experiences, older age, and lower socioeconomic status were significantly associated with negative post-flood health outcomes in all three logistic regression models. A lack of access to healthcare, non-US citizenship, and English proficiency were significant predictors of negative outcomes in both the physical and mental health models, while Hispanic ethnicity (physical), native-birth (mental), and more serious home damage (cleanup) were significant predictors in one model each. The disaster had disproportionate negative health impacts on those who were more exposed, poorer, older, and with constrained resource-access. While a lack of US citizenship and Hispanic ethnicity were associated with higher risks, being less acculturated (i.e., English-deficient, foreign-born) may have protected against health impacts.

Citation

Cutter, S. L. (1996). Vulnerability to environmental hazards. *Progress in Human Geography, 20*(4), 529-539. <https://doi.org/10.1177%2F030913259602000407>

Abstract

N/A

Citation

Cutter, S. L., Boruff, B. J., & Shirley, W. L. (2003). Social vulnerability to environmental hazards. *Social Science Quarterly, 84*(2), 242-261. <https://doi.org/10.1111/1540-6237.8402002>

Abstract

Objective: County-level socioeconomic and demographic data were used to construct an index of social vulnerability to environmental hazards, called the Social Vulnerability Index (SoVI) for the United States based on 1990 data.

Methods: Using a factor analytic approach, 42 variables were reduced to 11 independent factors that accounted for about 76 percent of the variance. These factors were placed in an additive model to compute a summary score—the Social Vulnerability Index.



Results: There are some distinct spatial patterns in the SoVI, with the most vulnerable counties clustered in metropolitan counties in the east, south Texas, and the Mississippi Delta region.

Conclusion: Those factors that contribute to the overall score often are different for each county, underscoring the interactive nature of social vulnerability—some components increase vulnerability; others moderate the effects.

Citation

Daniels, R. S. (2007). Revitalizing emergency management after Katrina. *Public Manager*, 36(3), 16-22.

Abstract

In the aftermath Hurricanes Katrina and Rita, the federal government and State of Mississippi issued several reports criticizing and recommending improvements to federal and state disaster response. Common themes included the following:

- Accurate forecasts prevented further loss of life.
- All levels of government understood the potential consequences of a large-scale hurricane on the Gulf Coast.
- All levels of government were unprepared for a disaster so lar.
- The state and local infrastructure—including flood protection, law enforcement,, human services, emergency response, and medical care—was inadequate for the scope of the disaster.
- Response plans at all level of government were inadequate for the scope of the disaster.
- All levels of government failed to execute existing response plans effectively.
- Massive communications failures undermined coordination.
- Lack of training, communication, and situational awareness undermined command and control.
- Military assistance was invaluable, but uncoordinated.

Citation

Dash, N. (2013). Race and Ethnicity. In Thomas, D. S., Phillips, B. D., Lovekamp, W. E., & Fothergill, A. (Eds.), *Social vulnerability to disasters* (2nd ed., pp. 113-138). CRC Press.

Abstract

N/A

Citation

Davis, E. A., Hansen, R., Kett, M., Mincin, J., & Twigg J. (2013). Disability. In Thomas, D. S., Phillips, B. D., Lovekamp, W. E., & Fothergill, A. (Eds.), *Social vulnerability to disasters* (2nd ed., pp. 1-32). CRC Press.

Abstract

N/A



Citation

Dehejia, R. H., & Wahba, S. (2002). Propensity score-matching methods for nonexperimental causal studies. *Review of Economics and Statistics*, 84(1), 151-161. <https://doi.org/10.1162/003465302317331982>

Abstract

This paper considers causal inference and sample selection bias in nonexperimental settings in which (i) few units in the nonexperimental comparison group are comparable to the treatment units, and (ii) selecting a subset of comparison units similar to the treatment units is difficult because units must be compared across a high-dimensional set of pretreatment characteristics. We discuss the use of propensity score-matching methods, and implement them using data from the National Supported Work experiment. Following LaLonde (1986), we pair the experimental treated units with nonexperimental comparison units from the CPS and PSID, and compare the estimates of the treatment effect obtained using our methods to the benchmark results from the experiment. For both comparison groups, we show that the methods succeed in focusing attention on the small subset of the comparison units comparable to the treated units and, hence, in alleviating the bias due to systematic differences between the treated and comparison units. © 2002 by the President and Fellows of Harvard College and the Massachusetts Institute of Technology

Citation

Donner, D., & Diaz D. (2018). Methodological issues in disaster research. In H. Rodriguez, W. Donner, & J. E. Trainor (Eds.), *Handbook of disaster research* (2nd ed., pp. 277-297). Springer.

Abstract

N/A

Citation

Donner, W., & Rodríguez, H. (2008). Population composition, migration and inequality: The influence of demographic changes on disaster risk and vulnerability. *Social Forces*, 87(2), 1089-1114. <https://doi.org/10.1353/sof.0.0141>

Abstract

The changing demographic landscape of the United States calls for a reassessment of the societal impacts and consequences of so-called “natural” and technological disasters. An increasing trend towards greater demographic and socio-economic diversity (in part due to high rates of international immigration), combined with mounting disaster losses, have brought about a more serious focus among scholars on how changing population patterns shape the vulnerability and resiliency of social systems. Recent disasters, such as the Indian Ocean Tsunami (2004) and Hurricane Katrina (2005), point to the differential impacts of disasters on certain communities, particularly those that do not have the necessary resources to cope with and recover from such events. This paper interprets these impacts within the context of economic, cultural, and social capital, as well as broader human ecological forces. The paper also makes important contributions to the social science disaster research literature by examining population growth, composition, and distribution in



the context of disaster risk and vulnerability. Population dynamics (e.g., population growth, migration, and urbanization) are perhaps one of the most important factors that have increased our exposure to disasters and have contributed to the devastating impacts of these events, as the case of Hurricane Katrina illustrates. Nevertheless, the scientific literature exploring these issues is quite limited. We argue that if we fail to acknowledge and act on the mounting evidence regarding population composition, migration, inequality, and disaster vulnerability, we will continue to experience disasters with greater regularity and intensity.

Citation

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*(Supplement_1), S109-S115. <https://dx.doi.org/10.2105%2FAJPH.2005.084335>

Abstract

Objectives: We studied the experience of Hurricane Katrina evacuees to better understand factors influencing evacuation decisions in impoverished, mainly minority communities that were most severely affected by the disaster.

Methods: We performed qualitative interviews with 58 randomly selected evacuees living in Houston's major evacuation centers from September 9 to 12, 2005. Transcripts were content analyzed using grounded theory methodology.

Results: Participants were mainly African American, had low incomes, and were from New Orleans. Participants' strong ties to extended family, friends, and community groups influenced other factors affecting evacuation, including transportation, access to shelter, and perception of evacuation messages. These social connections cut both ways, which facilitated and hindered evacuation decisions.

Conclusions: Effective disaster plans must account for the specific obstacles encountered by vulnerable and minority communities. Removing the more apparent obstacles of shelter and transportation will likely be insufficient for improving disaster plans for impoverished, minority communities. The important influence of extended families and social networks demand better community-based communication and preparation strategies.

Citation

Ewing, B., Buchholtz, S., & Rotanz, R. (2008). Assisting pregnant women to prepare for disaster. *MCN, The American Journal of Maternal/Child Nursing, 33*(2), 98-103. <https://doi.org/10.1097/01.nmc.0000313417.66742.ce>

Abstract

Disasters are natural or man-made life-altering events that require preplanning to save lives. Pregnant women are a particularly vulnerable population in such events, because they have special physical and psychosocial needs. Preparations made for labor and birth might have to be drastically altered in the event of an emergency, especially if a woman is separated from her familiar healthcare providers and facilities. The issue



of breastfeeding also must be considered in disaster planning for pregnant women, along with occurrences such as food shortages and outbreak of illnesses caused by overcrowding of displaced persons. Recent events such as hurricane Katrina have demonstrated that maternal/child nurses need to become more aware of disaster planning and help to empower pregnant women with knowledge of how to handle their special needs in times of crisis.

Citation

Ferreira, R. J., Buttell, F., & Ferreira, S. (2015). Ethical considerations for conducting disaster research with vulnerable populations. *Journal of Social Work Values and Ethics*, 12(1), 29-40.

<https://jswve.org/download/2015-1/articles/29-JSWVE-12-1-Ethical%20Considerations%20for%20Disaster%20Research.pdf>

Abstract

Worldwide there has been a significant increase in disasters the past decades, particularly in the United States. Due to the increased frequency of disasters, the field of disaster research has seen a corresponding increase in empirical studies involving human subjects. A large number of these studies include vulnerable populations. Study of these populations requires additional precautionary disaster research practices in order to align with ethical standards for research. This article has a dual purpose: Part I provides a better understanding of the vulnerability of populations associated with disaster research; Part II offers a framework for best practices in conducting disaster research with vulnerable populations.

Citation

Fordham, M., Lovekamp, W. E., Thomas, D. S., & Phillips, B. D. (2013). Understanding social vulnerability. In Thomas, D. S., Phillips, B. D., Lovekamp, W. E., & Fothergill, A. (Eds.), *Social vulnerability to disasters* (2nd ed., pp. 1-32). CRC Press.

Abstract

N/A

Citation

Fothergill, A. (2012). *Heads above water: Gender, class, and family in the grand forks flood*. SUNY Press.

Abstract

N/A

Citation

Fothergill, A., Maestas, E. G., & Darlington, J. D. (1999). Race, ethnicity and disasters in the United States: A review of the literature. *Disasters*, 23(2), 156-173. <https://doi.org/10.1111/1467-7717.00111>



Abstract

In this paper we synthesise past disaster research that addresses issues of race and ethnicity in the United States. Using an eight-stage typology to organise the findings, this literature review presents the results from a wide range of studies. The synthesis shows how various racial and ethnic groups perceive natural hazard risks and respond to warnings, how groups may be differentially affected, both physically and psychologically, and how disaster effects vary by race and ethnicity during the periods of emergency response, recovery and reconstruction. We show that studies have important findings, many illustrating that racial and ethnic communities in the US are more vulnerable to natural disasters, due to factors such as language, housing patterns, building construction, community isolation and cultural insensitivities. By presenting these studies together, we are able to witness patterns of racial and ethnic inequalities that may be more difficult to see or interpret in individual studies that take place in one specific time and place. We conclude the review with policy and research recommendations.

Citation

Fothergill, A., & Peek, L. A. (2004). Poverty and disasters in the United States: A review of recent sociological findings. *Natural hazards*, 32(1), 89-110. <https://doi.org/10.1023/B:NHAZ.0000026792.76181.d9>

Abstract

This article synthesizes the literature on poverty and disasters in the United States and presents the results from a wide range of studies conducted over the past twenty years. The findings are organized into eight categories based on the stages of a disaster event. The review illustrates how people of different socioeconomic statuses perceive, prepare for, and respond to natural hazard risks, how low-income populations may be differentially impacted, both physically and psychologically, and how disaster effects vary by social class during the periods of emergency response, recovery, and reconstruction. The literature illustrates that the poor in the United States are more vulnerable to natural disasters due to such factors as place and type of residence, building construction, and social exclusion. The results have important implications for social equity and recommendations for future research and policy implementation are offered.

Citation

Fothergill, A., & Peek, L. (2015). *Children of Katrina*. University of Texas Press.

Abstract

The vulnerability of children was starkly apparent in Hurricane Katrina, the most disruptive and destructive disaster in modern U.S. history. A dozen children and youth in Louisiana perished in the disaster. An untold number of children lost loved ones, were orphaned, or were left homeless. Over 5,000 children were reported missing, many of whom were separated from their family members for weeks or even months after the storm. Over 370,000 school-age children were displaced immediately following Katrina, while 160,000 remained dislocated for years. *Children of Katrina* examines what happened to children and youth in Hurricane Katrina and how their lives unfolded in the years after the catastrophe and displacement. They wanted to know: What happened to these children? What did they need during the emergency response and recovery periods? Who



helped them? How did they help themselves and other children as well as adults? How did their lives unfold following the catastrophe and displacement? To answer these questions, the authors spent seven years using ethnographic methods to study and analyze the experiences of children and youth in the aftermath of Katrina.

Citation

Gam, K. B., Engel, L. S., Kwok, R. K., Curry, M. D., Stewart, P. A., Stenzel, M. R., McGrath, J.A., Jackson, W.B., Lichtveld, M.Y., & Sandler, D. P. (2018). Association between Deepwater Horizon oil spill response and cleanup work experiences and lung function. *Environment International*, 121(1), 695-702. <https://doi.org/10.1016/j.envint.2018.09.058>

Abstract

Introduction: Oil spill response and cleanup (OSRC) workers had potentially stressful experiences during mitigation efforts following the 2010 Deepwater Horizon disaster. Smelling chemicals; skin or clothing contact with oil; heat stress; handling oily plants/wildlife or dead animal recovery; and/or being out of regular work may have posed a risk to worker respiratory health through psychological stress mechanisms.

Objective: To evaluate the association between six potentially stressful oil spill experiences and lung function among OSRC workers 1-3 years following the Deepwater Horizon disaster, while controlling for primary oil spill inhalation hazards and other potential confounders.

Methods: Of 6811 GuLF STUDY participants who performed OSRC work and completed a quality spirometry test, 4806 provided information on all exposures and confounders. We carried out complete case analysis and used multiple imputation to assess risk among the larger sample. Potentially stressful work experiences were identified from an earlier study of these workers. The lung function parameters of interest include the forced expiratory volume in 1 s (FEV1, mL), the forced vital capacity (FVC, mL) and the ratio (FEV1/FVC, %).

Results: On average, participants in the analytic sample completed spirometry tests 1.7 years after the spill. Among workers with at least 2 acceptable FEV1 and FVC curves, workers with jobs that involved oily plants/wildlife or dead animal recovery had lower values for FEV1 (Mean difference: -53 mL, 95% CI: -84, -22), FVC (Mean difference: -45 mL, 95% CI: -81, -9) and FEV1/FVC (Mean difference: -0.44%, 95% CI: -0.80, -0.07) compared to unexposed workers in analyses using multiple imputation.

Conclusions: Workers involved in handling oily plants/wildlife or dead animal recovery had lower lung function than unexposed workers after accounting for other OSRC inhalation hazards.

Citation

Goto, A., Bromet, E. J., & Fujimori, K. (2015). Immediate effects of the Fukushima nuclear power plant disaster on depressive symptoms among mothers with infants: A prefectural-wide cross-sectional study from the Fukushima Health Management Survey. *BMC Psychiatry*, 15(1), 59-59. <https://doi.org/10.1186/s12888-015-0443-8>



Abstract

Background: Mothers of young children are at high-risk for developing adverse mental health effects following a nuclear accident. Using the Japanese pregnancy registration system, the prefecture of Fukushima launched a population-based survey of women who were pregnant at the time of the Fukushima nuclear accident in order to assess their and their newborns' health. In this paper, we focus on the results of a screen for depressive symptoms among new mothers and its association with geographical region and interruption of obstetrical care after the Fukushima nuclear accident, which occurred after the Great East Japan Earthquake on March 11, 2011.

Methods: The survey targeted women who lived in Fukushima prefecture and who had registered their pregnancies between August 1, 2010 and July 31, 2011. Among the 16,001 women targeted, 9,321 returned the questionnaires (response proportion = 58.3%) and data from 8,196 women with singleton live births were analyzed. The main outcome measure was a standard two-item depression screen. Regional radiation levels were determined from the prefecture's periodical reports, and interruption in obstetrical care after the Fukushima nuclear accident was determined from mothers' individual responses to the questionnaire.

Results: Among the 8,196 women, 2,262 (28%) screened positive for depressive symptoms. After adjusting for maternal and infant characteristics, both mothers in Soso, the region in which the nuclear power plant is located, and mothers that had changed obstetrical care facilities were significantly more likely to screen positive for depression. In contrast, mothers in Iwaki and Aizu, regions with relatively low radiation levels, were significantly less likely to screen positive for depression.

Conclusions: Our findings suggest that improving mental health support for mothers with infants should be a high priority in the acute phase of nuclear disaster response. We further recommend that in the strategic provisioning of parental support, close attention should be paid to regional variations in negative mental health consequences, particularly to those who experienced an interruption in their obstetrical care.

Citation

Henderson, M., Davis, B., & Climek, M. (2015). Views of recovery: Ten years after Katrina and Rita. *Louisiana State University Reilly Center for Media & Public Affairs*.

Abstract

N/A

Citation

Horney, J., Zotti, M. E., Williams, A., & Hsia, J. (2012). Cluster sampling with referral to improve the efficiency of estimating unmet needs among pregnant and postpartum women after disasters. *Women's Health Issues*, 22(3), e253-e257. <https://doi.org/10.1016/j.whi.2012.01.002>



Abstract

Introduction and background: Women of reproductive age, in particular women who are pregnant or fewer than 6 months postpartum, are uniquely vulnerable to the effects of natural disasters, which may create stressors for caregivers, limit access to prenatal/postpartum care, or interrupt contraception. Traditional approaches (e.g., newborn records, community surveys) to survey women of reproductive age about unmet needs may not be practical after disasters. Finding pregnant or postpartum women is especially challenging because fewer than 5% of women of reproductive age are pregnant or postpartum at any time.

Methods: From 2009 to 2011, we conducted three pilots of a sampling strategy that aimed to increase the proportion of pregnant and postpartum women of reproductive age who were included in postdisaster reproductive health assessments in Johnston County, North Carolina, after tornadoes, Cobb/Douglas Counties, Georgia, after flooding, and Bertie County, North Carolina, after hurricane-related flooding.

Results: Using this method, the percentage of pregnant and postpartum women interviewed in each pilot increased from 0.06% to 21%, 8% to 19%, and 9% to 17%, respectively.

Conclusion and discussion: Two-stage cluster sampling with referral can be used to increase the proportion of pregnant and postpartum women included in a postdisaster assessment. This strategy may be a promising way to assess unmet needs of pregnant and postpartum women in disaster-affected communities.

Citation

Committee on Assessing Rehabilitation Science and Engineering, & Institute of Medicine (U.S.). (1997). Disability and the environment. In Brandt E. N., Jr, Pope A. M.(Eds.), *Enabling America: Assessing the role of rehabilitation science and engineering* (147-169). National Academies Press.

Abstract

N/A

Citation

Kelman, I., & Stough, L. M. (Eds.). (2015). *Disability and disaster: Explorations and exchanges*. Palgrave Macmillan.

Abstract

N/A

Citation

Kohn, S., Eaton, J. L., Feroz, S., Bainbridge, A. A., Hoolachan, J., & Barnett, D. J. (2012). Personal disaster preparedness: An integrative review of the literature. *Disaster Medicine and Public Health Preparedness*, 6(3), 217-231. <https://doi.org/10.1001/dmp.2012.47>



Abstract

Experts generally agree that individuals will require partial or complete self-sufficiency for at least the first 72 hours following a disaster. In the face of pervasive environmental and weather hazards, emerging biological threats, and growing population densities in urban areas, personal preparedness is critical. However, disaster planners and policymakers require further information to create meaningful improvements to this aspect of disaster preparedness. A systematic review of the literature was conducted to determine the state of evidence concerning personal disaster preparedness. The purpose of this integrative review is to describe and analyze the professional literature as an intended basis for advancing the field of disaster management research and practice. Included in the review were 36 studies that met the predetermined inclusion criteria. The current evidence indicates that factors influencing preparedness attitudes and behaviors are complex and multifaceted, including demographic characteristics, trust in government efforts, previous exposure to a disaster, and number of dependents in a household. Furthermore, certain population groups, households, and individuals have different disaster preparedness needs and vulnerabilities. This constellation of findings has significant implications for community and national emergency planning and policymaking.

Citation

Kroll-Smith, J. S. (2018). *Recovering inequality: Hurricane Katrina, the San Francisco earthquake of 1906, and the aftermath of disaster (1st ed.)*. University of Texas Press.

Abstract

N/A

Citation

Lee, A. C. K., Booth, A., Challen, K., Gardois, P., & Goodacre, S. (2014). Disaster management in low-and middle-income countries: Scoping review of the evidence base. *Emergency Medicine Journal*, 31(e1), e78-e83. <https://doi.org/10.1136/emered-2013-203298>

Abstract

Introduction: Globally, there has been an increase in the prevalence and scale of disasters with low- and middle-income countries (LMICs) tending to be more affected. Consequently, disaster risk reduction has been advocated as a global priority. However, the evidence base for disaster management in these settings is unclear.

Methods: This study is a scoping review of the evidence base for disaster management in LMIC. Potentially relevant articles between 1990 and 2011 were searched for, assessed for relevance and subsequently categorised using a thematic coding framework based on the US Integrated Emergency Management System model.

Results: Out of 1545 articles identified, only 178 were from LMIC settings. Most were of less robust design such as event reports and commentaries, and 66% pertained to natural disasters. There was a paucity of



articles on disaster mitigation or recovery, and more were written on disaster response and preparedness issues.

Discussion: Considerably more articles were published from high-income country settings that may reflect a publication bias. Current grey literature on disaster management tends not to be peer reviewed, is not well organized and not easy to access. The paucity of peer-reviewed publications compromises evidence review initiatives that seek to provide an evidence-base for disaster management in LMIC. As such, there is an urgent need for greater research and publication of findings on disaster management issues from these settings.

Citation

Luna, F. (2018). Identifying and evaluating layers of vulnerability—a way forward. *Developing World Bioethics*, 27(6), 325-332. <https://doi.org/10.1111/dewb.12206>

Abstract

“Vulnerability” is a key concept for research ethics and public health ethics. This term can be discussed from either a conceptual or a practical perspective. I previously proposed the metaphor of layers to understand how this concept functions from the conceptual perspective in human research. In this paper I will clarify how my analysis includes other definitions of vulnerability. Then, I will take the practical-ethical perspective, rejecting the usefulness of taxonomies to analyze vulnerabilities. My proposal specifies two steps and provides a procedural guide to help rank layers. I introduce the notion of cascade vulnerability and outline the dispositional nature of layers of vulnerability to underscore the importance of identifying their stimulus condition. In addition, I identify three kinds of obligations and some strategies to implement them.

Citation

MacDonald, P.D.M., Horney, J.A., Bevc, C.A., Markiewicz, M., Gunther-Mohr, C., & Simon, M.C. (2012). *Vulnerable & at-risk populations resource guide: Introducing a new tool for preparedness planning*. North Carolina Preparedness and Emergency Response Research Center.

Abstract

N/A

Citation

Martin, S. A. (2015). A framework to understand the relationship between social factors that reduce resilience in cities: Application to the City of Boston. *International Journal of Disaster Risk Reduction*, 12, 53-80. <https://doi.org/10.1016/j.ijdr.2014.12.001>

Abstract

For the first time in human history, more people across the world live in cities than in rural areas: In the U.S., approximately 80% of the population live in cities. Socially vulnerable populations and complex infrastructure exist in higher numbers in cities significantly compounding risk. People facing these social factors have



disproportionate exposure to risk and a decreased ability to avoid or absorb potential loss. However, the body of literature available on social vulnerability is disparate with fragmented insight into understanding the relationship between social factors that increase vulnerability and practical approaches to reduce risk. This research focuses on developing a replicable, practical approach to understanding the complexity of social vulnerability in American cities while reducing the likelihood of civil rights violations. The Social Determinants of Vulnerability Framework (The Framework) was developed using a link analysis of social factors from existing literature. The Framework consists of seven interrelated social factors that seem to be driving vulnerability: children, people with disabilities, older adults, chronic and acute medical illness, social isolation, low-to-no income, and people of color. The Framework also includes specific poor outcomes that people with pre-emergency social factors are more likely to experience at disproportionately higher levels after emergencies: lack of access to post-incident services; displacement; injury, illness, and death; property loss or damage; domestic violence; and loss of employment. A quantitative analysis of those social factors based on City of Boston data confirmed many of the relationships among the social factors of vulnerability and the significance of social isolation.

Citation

McCall, M. K., & Guarin, G. P. (2011). Participatory action research and disaster risk. In B. Wisner, I. Kellman, & J. C. Gaillard (Eds.), *Handbook of hazards and disaster risk reduction* (pp. 727-741). Routledge.

Abstract

N/A

Citation

Mensah, G. A., Mokdad, A. H., Posner, S. F., Reed, E., Simoes, E. J., Engelgau, M. M., & Vulnerable Populations in Natural Disasters Working Group. (2005). When chronic conditions become acute: Prevention and control of chronic diseases and adverse health outcomes during natural disasters. *Preventing Chronic Disease*, 2(Spec No). https://www.cdc.gov/pcd/issues/2005/nov/05_0201.htm

Abstract

N/A

Citation

Morrow, B. H. (1999). Identifying and mapping community vulnerability. *Disasters*, 23(1), 1-18. <https://doi.org/10.1111/1467-7717.00102>

Abstract

Disaster vulnerability is socially constructed, i.e., it arises out of the social and economic circumstances of everyday living. Most often discussed from the perspective of developing nations, this article extends the argument using American demographic trends. Examples from recent disasters, Hurricane Andrew in particular, illustrate how certain categories of people, such as the poor, the elderly, women-headed households and recent residents, are at greater risk throughout the disaster response process. Knowledge of



where these groups are concentrated within communities and the general nature of their circumstances is an important step towards effective emergency management. Emergency planners, policy-makers and responding organisations are encouraged to identify and locate high-risk sectors on Community Vulnerability Maps, integrating this information into GIS systems where feasible. Effective disaster management calls for aggressively involving these neighbourhoods and groups at all levels of planning and response, as well as mitigation efforts that address the root causes of vulnerability.

Citation

Newberry, L. (2019, February 10). Poor, elderly and too frail to escape: Paradise Fire killed the most vulnerable residents. *Los Angeles Times*. <https://www.latimes.com>

Abstract

N/A

Citation

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: Interpersonal and Biological Processes*, 65(3), 207-239. <https://doi.org/10.1521/psyc.65.3.207.20173>

Abstract

Results for 160 samples of disaster victims were coded as to sample type, disaster type, disaster location, outcomes and risk factors observed, and overall severity of impairment. In order of frequency, outcomes included specific psychological problems, nonspecific distress, health problems, chronic problems in living, resource loss, and problems specific to youth. Regression analyses showed that samples were more likely to be impaired if they were composed of youth rather than adults, were from developing rather than developed countries, or experienced mass violence (e.g., terrorism, shooting sprees) rather than natural or technological disasters. Most samples of rescue and recovery workers showed remarkable resilience. Within adult samples, more severe exposure, female gender, middle age, ethnic minority status, secondary stressors, prior psychiatric problems, and weak or deteriorating psychosocial resources most consistently increased the likelihood of adverse outcomes. Among youth, family factors were primary. Implications of the research for clinical practice and community intervention are discussed in a companion article (Norris, Friedman, and Watson, this volume).

Citation

North, C. S. (2016). Disaster mental health epidemiology: Methodological review and interpretation of research findings. *Psychiatry*, 79(2), 130-146. <https://doi.org/10.1080/00332747.2016.1155926>

Abstract

Worldwide, disasters are increasing in frequency and severity. Mental health consequences of disasters are extensive, and knowledge of anticipated mental health effects is needed for effective disaster response.



Difficulties inherent in conducting disaster research have limited the understanding of research findings. This article presents and interprets disaster mental health research findings in the context of research methods. A brief history of the disaster mental health research field is provided, and the presentation of findings is ordered into topical areas of disaster mental health consequences and timing and prediction of mental health outcomes. Results of different studies varied greatly by several main characteristics of research methods, especially methods of psychiatric assessment, sampling and exposure group determination, and consideration of confounding variables. In conclusion, many complexities in conducting disaster mental health research have limited the understanding and interpretation of available knowledge needed to inform efforts to plan and carry out effective mental health responses to disasters. Thoughtful interpretation of findings in the context of research design and methods is vital to accurate understanding of the types, prevalence, and predictors of anticipated mental health effects of disasters. A wealth of knowledge from disaster mental health research has accumulated in recent decades, but more research is still needed to resolve inconsistent findings through methodological refinements.

Citation

Packenham, J. P., Rosselli, R. T., Ramsey, S. K., Taylor, H. A., Fothergill, A., Slutsman, J., & Miller, A. (2017). Conducting science in disasters: Recommendations from the NIEHS Working Group for special IRB considerations in the review of disaster related research. *Environmental Health Perspectives*, 125(9), 094503. <https://doi.org/10.1289/ehp2378>

Abstract

Research involving human subjects after public health emergencies and disasters may pose ethical challenges. These challenges may include concerns about the vulnerability of prospective disaster research participants, increased research burden among disaster survivors approached by multiple research teams, and potentially reduced standards in the ethical review of research by institutional review boards (IRBs) due to the rush to enter the disaster field. The NIEHS Best Practices Working Group for Special IRB Considerations in the Review of Disaster Related Research was formed to identify and address ethical and regulatory challenges associated with the review of disaster research. The working group consists of a diverse collection of disaster research stakeholders across a broad spectrum of disciplines. The working group convened in July 2016 to identify recommendations that are instrumental in preparing IRBs to review protocols related to public health emergencies and disasters. The meeting included formative didactic presentations and facilitated breakout discussions using disaster-related case studies. Major thematic elements from these discussions were collected and documented into 15 working group recommendations, summarized in this article, that address topics such as IRB disaster preparedness activities, informed consent, vulnerable populations, confidentiality, participant burden, disaster research response integration and training, IRB roles/responsibilities, community engagement, and dissemination of disaster research results.

Citation

Parker, G., Lie, D., Siskind, D. J., Martin-Khan, M., Raphael, B., Crompton, D., & Kisely, S. (2016). Mental health implications for older adults after natural disasters—a systematic review and meta-analysis. *International Psychogeriatrics*, 28(1), 11-20. <https://doi.org/10.1017/s1041610215001210>



Abstract

Background: Natural disasters affect the health and well-being of adults throughout the world. There is some debate in the literature as to whether older persons have increased risk of mental health outcomes after exposure to natural disasters when compared with younger adults. To date, no systematic review has evaluated this. We aimed to synthesize the available evidence on the impact of natural disasters on the mental health and psychological distress experienced by older adults.

Design: A meta-analysis was conducted on papers identified through a systematic review. The primary outcomes measured were post-traumatic stress disorder (PTSD), depression, anxiety disorders, adjustment disorder, and psychological distress.

Results: We identified six papers with sufficient data for a random effects meta-analysis. Older adults were 2.11 times more likely to experience PTSD symptoms and 1.73 more likely to develop adjustment disorder when exposed to natural disasters when compared with younger adults.

Conclusions: Given the global rise in the number of older adults affected by natural disasters, mental health services need to be prepared to meet their needs following natural disasters, particularly around the early detection and management of PTSD.

Citation

Peek, L. A. (2003). Reactions and response: Muslim students' experiences on New York City campuses post 9/11. *Journal of Muslim Minority Affairs*, 23(2), 271-283. <https://doi.org/10.1080/1360200032000139910>

Abstract

The September 11, 2001 attacks against the United States resulted in a homeland catastrophe of unprecedented magnitude. Thousands of lives were lost, billions of dollars will be spent on disaster recovery, and the social and political consequences of the attacks have been extensive. The costs of this disaster—the loss of human life, the suffering of the injured, the mental and emotional trauma to survivors and witnesses, the loss of wealth and intellectual capital, the destruction of symbols of economic and military strength, and the loss of a national sense of security—are impossible to fully assess. This disaster was distinct in that a group of individuals were held directly responsible for the destruction and loss of life. The disaster agent—an intentional, human conceived attack—most certainly determined the response and backlash that followed the events. In the days, weeks, and months following September 11, people from various ethnic and religious groups in the United States were targeted for the blame. Thousands of Arabs, Muslims, Sikhs, and individuals who appeared to be of Middle Eastern descent became the victims of discrimination, harassment, racial and religious profiling, and verbal and physical assault.

Citation

Peek, L. (2013). Age. In Thomas, D. S., Phillips, B. D., Lovekamp, W. E., & Fothergill, A. (Eds.), *Social vulnerability to disasters* (2nd ed., pp. 167-98). CRC Press.



Abstract

The length of time that someone has lived can significantly affect that person's ability to prepare for, respond to, and recover from disaster. Indeed, age is correlated with a number of factors associated with one's likelihood of withstanding a disaster event. For example, age in many ways influences cognitive development, physical ability and mobility, socioeconomic status, access to resources, assumed responsibility for disaster preparedness and response activities, and levels of social integration or isolation. Thus, it is clear that age alone does not make a person vulnerable. Instead, age interacts with many other factors to result in the increased vulnerability of some population groups, particularly the very young and the old. As such, this chapter focuses specifically on the vulnerabilities of children and the elderly in disaster.

Citation

Peek, L. (2010). *Behind the backlash: Muslim Americans after 9/11*. Temple University Press.

Abstract

The 9/11 terror attacks sparked a surge in hate crime, discrimination, and racial and religious profiling against Muslim Americans. Although the most violent acts—including anti-Muslim murders, physical assaults, and the desecration of mosques—began to taper off in the year following 9/11, anti-Muslim sentiment has continued to rise. Indeed, a series of Gallup polls show that about 14% of Americans expressed negative views of Islam and Muslims in 2001; by late 2009, that figure had grown to encompass a majority (53%) of the American public. *Behind the Backlash*, which draws on hate crime statistics, bias crime reports, field observations, and 140 in-depth interviews, focuses on the Muslim American women and men who were caught up in the backlash that followed the terrorist attacks. It offers the first theoretical model that explains why backlash occurs after particular crises and why some individuals and groups may be excluded from moments of collective post-disaster social solidarity.

Citation

Peek, L., Abramson, D. M., Cox, R. S., Fothergill, A., & Tobin, J. (2018). Children and disasters. In H. Rodriguez, W. Donner, & J. E. Trainor (Eds.), *Handbook of disaster research* (2nd ed., pp. 243-262). Springer.
<https://doi.org/10.1177%2F1468794108098029>

Abstract

This chapter reviews available literature on children and disasters, with an emphasis on the recent dramatic expansion in this area of study. The overarching goal is to provide an overview of the substantive contributions of scholarship on children and disasters. Through this process, our specific objective is to identify major empirical, theoretical, and methodological trends and patterns. After reading the chapter, our hope is that others will understand the major contributions of this area of study—both for the field of disaster research and practice, and for the social sciences more generally—while also recognizing the need for new lines of inquiry and approaches. We begin by defining key concepts that frame this chapter and by describing our approach to reviewing the literature. Next, we offer a summary of publication patterns associated with children and disasters; here we underscore the growth in this subfield and highlight how a relatively limited number of large-scale catastrophic events have served to spur research in this area. We then turn to six major



waves of research that have been most prevalent over time. These include contributions to enhanced understanding of (1) the effects of disaster on children’s mental health and behavioral reactions; (2) disaster exposure as it relates to physical health and well-being; (3) social vulnerability and sociodemographic characteristics; (4) the role of institutions and socio-ecological context in shaping children’s pre- and post-disaster outcomes; (5) resiliency, strengths, and capacities; and (6) children’s voices, perspectives, and actions across the disaster lifecycle. We also emphasize advancements in methods, theory, policy, and practice, and offer suggestions for future directions in research.

Citation

Peek, L., & Fothergill, A. (2009). Using focus groups: Lessons from studying daycare centers, 9/11, and Hurricane Katrina. *Qualitative Research*, 9(1), 31-59. <https://doi.org/10.1177%2F1468794108098029>

Abstract

The purpose of this article is to examine focus groups as a qualitative research method. We describe and evaluate the use of focus groups based on three separate research projects: a study of teachers, parents, and children at two urban daycare centers; a study of the responses of second-generation Muslim Americans to the events of September 11; and a collaborative project on the experiences of children and youth following Hurricane Katrina. By examining three different projects, we are able to assess some of the strengths and challenges of the focus group as a research method. In addition, we analyze the design and implementation of focus groups, including information on participant recruitment, the most effective group size, group composition and issues of segmentation, how to carry out focus groups, and the ideal number of groups to conduct. We pay particular attention to the ways in which focus groups may serve a social support or empowerment function, and our research points to the strength of using this method with marginalized, stigmatized, or vulnerable individuals.

Citation

Peek, L., & Stough, L. M. (2010). Children with disabilities in the context of disaster: A social vulnerability perspective. *Child Development*, 81(4), 1260-1270. <https://doi.org/10.1111/j.1467-8624.2010.01466.x>

Abstract

An estimated 200 million children worldwide experience various forms of disability. This critical review extrapolates from existing literature in 2 distinct areas of scholarship: one on individuals with disabilities in disaster, and the other on children in disaster. The extant literature suggests that various factors may contribute to the physical, psychological, and educational vulnerability of children with disabilities in disaster, including higher poverty rates, elevated risk exposure, greater vulnerability to traumatic loss or separation from caregivers, more strain on parents, and poor postdisaster outcomes, unless medical, familial, social, and educational protections are in place and vital social networks are quickly reestablished. Future research needs are outlined in the conclusion.



Citation

Philips, B. (2003). Qualitative methods and disaster research. In *Methods of disaster research* (pp. 191-208). Xlibris Corporation.

Abstract

N/A

Citation

Phillips, B. D., & Morrow, B. H. (2007). Social science research needs: Focus on vulnerable populations, forecasting, and warnings. *Natural Hazards Review*, 8(3), 61-68. [https://doi.org/10.1061/\(ASCE\)1527-6988\(2007\)8:3\(61\)](https://doi.org/10.1061/(ASCE)1527-6988(2007)8:3(61))

Abstract

This paper assesses the state of social science research specific to populations at risk vis-à-vis weather forecasting and warnings. At-risk populations are defined as groups historically disadvantaged by socioeconomic status; patterns of discrimination and exclusion, or both; a lack of political representation; or cultural distancing. These contexts marginalize some groups, leaving them less likely to receive, interpret, and respond appropriately to forecasts and warnings. We give an overview of key concepts from vulnerability research and suggest research topics emanating from the social science literature relevant to forecasting and warnings.

Citation

Quarantelli, E.L., Boin, A., & Lagadec, P. (2018). Studying Future Disasters and Crises: A heuristic approach. In H. Rodriguez, W. Donner, & J. E. Trainor (Eds.), *Handbook of disaster research* (2nd ed., pp. 61-83). Springer. https://dx.doi.org/10.1007%2F978-3-319-63254-4_4

Abstract

Over time, new types of crises and disasters have emerged. We argue that new types of adversity will continue to emerge. In this chapter, we offer a framework to study and interpret new forms of crises and disasters. This framework is informed by historical insights on societal interpretations of crises and disasters. We are particularly focused here on the rise of transboundary crises – those crises that traverse boundaries between countries and policy systems. We identify the characteristics of these transboundary disruptions, sketch a few scenarios and explore the societal vulnerabilities to this type of threat. We end by discussing some possible implications for planning and preparation practices.

Citation

Rodriguez-Oreggia, E., De La Fuente, A., De La Torre, R., & Moreno, H. A. (2013). Natural disasters, human development and poverty at the municipal level in Mexico. *The Journal of Development Studies*, 49(3), 442-455. <https://doi.org/10.1080/00220388.2012.700398>



Abstract

This article analyses the effects of natural disasters on human development and poverty levels at the municipal level in Mexico. Using several sources, we build a panel of data in order to uncover if different natural shocks can affect social indicators. After controlling for geographic and natural characteristics which can make municipalities more hazard prone, as well as for other institutional, socio-economic and demographic pre-shock characteristics, in addition to using fixed effects, we find that general shocks, especially from floods and droughts, lead to significant drops in both types of indicator.

Citation

Rothman, M., & Brown, L. (2007). The vulnerable geriatric casualty: Medical needs of frail older adults during disasters. *Generations*, 31(4), 16-20.

Abstract

N/A

Citation

Rufat, S., Tate, E., Emrich, C. T., & Antolini, F. (2019). How valid are social vulnerability models? *Annals of the American Association of Geographers*, 109(4), 1-23. <https://doi.org/10.1080/24694452.2018.1535887>

Abstract

Social vulnerability models are becoming increasingly important for hazard mitigation and recovery planning, but it remains unclear how well they explain disaster outcomes. Most studies using indicators and indexes employ them to either describe vulnerability patterns or compare newly devised measures to existing ones. The focus of this article is construct validation, in which we investigate the empirical validity of a range of models of social vulnerability using outcomes from Hurricane Sandy. Using spatial regression, relative measures of assistance applicants, affected renters, housing damage, and property loss were regressed on four social vulnerability models and their constituent pillars while controlling for flood exposure. The indexes best explained housing assistance applicants, whereas they poorly explained property loss. At the pillar level, themes related to access and functional needs, age, transportation, and housing were the most explanatory. Overall, social vulnerability models with weighted and profile configurations demonstrated higher construct validity than the prevailing social vulnerability indexes. The findings highlight the need to expand the number and breadth of empirical validation studies to better understand relationships among social vulnerability models and disaster outcomes.

Citation

Santos-Hernandez, J., & Morrow, B. H. (2013). Language and literacy. In Thomas, D. S., Phillips, B. D., Lovekamp, W. E., & Fothergill, A. (Eds.), *Social vulnerability to disasters* (2nd ed., 27-39). CRC Press.



Abstract

N/A

Citation

Scheib, H. A., & Lykes, M. B. (2013). African American and Latina community health workers engage PhotoPAR as a resource in a post-disaster context: Katrina at 5 years. *Journal of Health Psychology, 18*(8), 1069-1084. <https://doi.org/10.1177/1359105312470127>

Abstract

This article reports on participatory action and photo elicitation research conducted by community health workers and university-based researchers in post-Katrina New Orleans between August 2007 and 2010. It documents how 11 African American and Latina women community health workers forged ties and developed a model for responding to some of the personal, familial, and community effects of this “unnatural disaster.” We identify and analyze two of the health literacies they developed and deployed: (1) intragroup and intergroup empathy skills and (2) capacity to critically analyze structural causes of health inequities. We argue that the participatory processes and outcomes analyzed herein offer one possible model through which local communities and health workers can creatively respond to health disparities in post-disaster contexts.

Citation

Schmidtlein, M. C., Shafer, J. M., Berry, M., & Cutter, S. L. (2011). Modeled earthquake losses and social vulnerability in Charleston, South Carolina. *Applied Geography, 31*(1), 269-281.

Abstract

This paper examines the spatial linkage between social vulnerability and estimated earthquake losses for differing levels of event magnitude. Charleston, South Carolina was selected as the sample urban setting for the study. Earthquake losses (debris generated and direct economic costs) were modeled using the HAZUS-MH software package. Social vulnerability, those characteristics of groups that increase the likelihood of losses or decrease the recovery ability, was modeled using the Social Vulnerability Index (SoVI). Modeled earthquake losses were higher in the urbanized core surrounding the Charleston peninsula and expanded outward, especially east and west of the peninsula along the coast. Physical parameters (peak ground acceleration and distance from the epicenter) were more significant in predicting impacts than social vulnerability. However, in examining the relative impact of earthquake losses accounting for wealth (dollar losses per average income as the dependent variable), we found social vulnerability is a significant predictor, suggesting that those areas with higher levels of social vulnerability experience a greater relative impact and may therefore face more obstacles in post-event recovery than areas with lower social vulnerability.

Citation

Seicshnaydre, S., Collins, R. A., Hill, C., & Ciardullo, M. (2018). Rigging the Real Estate Market: Segregation, Inequality, and Disaster Risk. *The New Orleans Prosperity Index: Tricentennial Collection*.



Abstract

New Orleans history and culture is rooted in a unique sense of place. Yet, beneath a shared sense of tradition and culture lies another reality marked by separation, privilege, and disadvantage. The historical and contemporary dividing lines in New Orleans, like in most American cities, fall along categories of black and white, race and ethnicity. Gaining an understanding of the history of neighborhood segregation in New Orleans is essential to appreciating contemporary racial disparities in wealth, access to opportunity, and vulnerability to disaster risk.

Citation

Shorten, A., & Smith, J. (2017). Mixed methods research: Expanding the evidence base. *Evidence-Based Nursing*, 20(3), 74-75. <https://doi.org/10.1136/eb-2017-102699>

Abstract

N/A

Citation

Siegel, J. M. (2000). Emotional injury and the Northridge, California earthquake. *Natural Hazards Review*, 1(4), 204-211. [http://dx.doi.org/10.1061/\(ASCE\)1527-6988\(2000\)1:4\(204\)](http://dx.doi.org/10.1061/(ASCE)1527-6988(2000)1:4(204))

Abstract

The probability of developing posttraumatic stress disorder (PTSD) or experiencing an emotional injury as a result of the Northridge, California earthquake was investigated among a multiethnic sample. Three successive cross-sectional samples were independently drawn for telephone interviews. Demographic attributes, characteristics of the earthquake experience, and resources available to the respondent, were considered. In chi-square analyses, these variables were related to the probability of an emotional injury as expected, with more vulnerable and exposed populations showing higher rates of injury. However, none of the variables were related to PTSD. In the multivariate model, which was a means for controlling for psychological distress, five variables emerged as independent predictors of emotional injury: (1) completing the interview in Spanish; (2) perceiving oneself as a victim of the quake; (3) being female; (4) having utilities disrupted; and (5) sustaining damage.

Citation

Spielman, S. E., Tuccillo, J., Folch, D. C., Schweikert, A., Davies, R., Wood, N., & Tate, E. (2020). Evaluating social vulnerability indicators: Criteria and their application to the Social Vulnerability Index. *Natural Hazards*, 100(1), 417-436. <https://doi.org/10.1007/s11069-019-03820-z>

Abstract

As a concept, social vulnerability describes combinations of social, cultural, economic, political, and institutional processes that shape socioeconomic differentials in the experience of and recovery from hazards.



Quantitative measures of social vulnerability are widely used in research and practice. In this paper, we establish criteria for the evaluation of social vulnerability indicators and apply those criteria to the most widely used measure of social vulnerability, the Social Vulnerability Index (SoVI). SoVI is a single quantitative indicator that purports to measure a place's social vulnerability. We show that SoVI has some critical shortcomings regarding theoretical and internal consistency. Specifically, multiple SoVI-based measurements of the vulnerability of the same place, using the same data, can yield strikingly different results. We also show that the SoVI is often misaligned with theory; increases in variables that contribute to vulnerability, like the unemployment rate, often decrease vulnerability as measured by the SoVI. We caution against the use of the index in policy making or other risk-reduction efforts, and we suggest ways to more reliably assess social vulnerability in practice.

Citation

Stough, L., & Kelman, I. (2018). People with disabilities and disasters. In H. Rodriguez, W. Donner, & J. E. Trainor (Eds.), *Handbook of disaster research* (2nd ed., pp. 225-242). Springer.

Abstract

N/A

Citation

Strelitz, J., Keil, A. P., Richardson, D. B., Heiss, G., Gammon, M. D., Kwok, R. K., Sandler, D., & Engel, L. S. (2019). Self-reported myocardial infarction and fatal coronary heart disease among oil spill workers and community members 5 years after Deepwater Horizon. *Environmental Research*, 168, 70-79.
<https://doi.org/10.1016/j.envres.2018.09.026>

Abstract

Background: Chemical, physical and psychological stressors due to the 2010 Deepwater Horizon oil spill may impact coronary heart disease (CHD) among exposed populations. Using longitudinal information from two interviews in the Gulf Long Term Follow-up (GuLF) STUDY, we assessed CHD among oil spill workers and community members.

Objective: To assess the associations between duration of oil spill clean-up work, residential proximity to the oil spill, and incidence of self-reported myocardial infarction or fatal CHD.

Methods: Among respondents with two GuLF STUDY interviews (n = 21,256), there were 395 first incident heart disease events (self-reported myocardial infarction or fatal CHD) across 5 years. We estimated hazard ratios (HR) and 95% confidence intervals (95%CI) for associations with duration of oil spill clean-up work and residential proximity to the oil spill. To assess potential impacts of non-response, we compared covariate distributions for those who did (n = 21,256) and did not (n = 10,353) complete the second interview and used inverse probability (IP) of censoring weights to correct for potential non-response bias.

Results: Living in proximity to the oil spill (vs. living further away) was associated with heart disease, with [HR(95%CI) = 1.30(1.01-1.67)] and without [1.29(1.00-1.65)] censoring weights. For work duration, hazard of



heart disease appeared to be higher for those who worked > 180 days (vs. 1-30 days), with and without censoring weights [1.43(0.91-2.25) and 1.36(0.88-2.11), respectively]. Associations persisted throughout the 5-year follow-up.

Conclusions: Residential proximity to the spill and duration of clean-up work were associated with a suggested 29-43% higher hazard of heart disease events. Associations were robust to censoring.

Citation

Sulaiman, Z., Mohamad, N., Ismail, T. A. T., Johari, N., & Hussain, N. H. N. (2016). Infant feeding concerns in times of natural disaster: Lessons learned from the 2014 flood in Kelantan, Malaysia. *Asia Pacific Journal of Clinical Nutrition, 25*(3), 625-630.

Abstract

The flood that hit Kelantan in December 2014 was the worst in Malaysian history. Women and their infants accounted for a large proportion of the people at risk who were badly affected, as almost half of the population in Kelantan was in the reproductive age group. This report serves to raise awareness that breastfeeding mothers and infants are a special population with unique needs during a disaster. Four of their concerns were identified during this massive flood: first, the negative impact of flood on infant nutritional status and their health; second, open space and lack of privacy for the mothers to breastfeed their babies comfortably at temporary shelters for flood victims; third, uncontrolled donations of infant formula, teats, and feeding bottles that are often received from many sources to promote formula feeding; and lastly, misconceptions related to breastfeeding production and quality that may be affected by the disaster. The susceptibility of women and their infant in a natural disaster enhances the benefits of promoting the breastfeeding rights of women. Women have the right to be supported which enables them to breastfeed. These can be achieved through monitoring the distribution of formula feeding, providing water, electricity and medical care for breastfeeding mothers and their infants. A multifaceted rescue mission team involving various agencies comprising of local government, including the health and nutrition departments, private or non-governmental organizations and individual volunteers have the potential to improve a satisfactory condition of women and infants affected by floods and other potential natural disasters.

Citation

Thomas, D. S. K. (2018). The role of geographic information science & technology in disaster management. In H. Rodriguez, W. Donner, & J. E. Trainor (Eds.), *Handbook of disaster research* (2nd ed., pp. 311-330). Springer.

Abstract

N/A

Citation

U.S. Department of Homeland Security (DHS). (2018). *An affordability framework for the National Flood Insurance Program*. U.S. Department of Homeland Security.



Abstract

N/A

Citation

Wang, C. W., Chan, C. L., & Ho, R. T. (2013). Prevalence and trajectory of psychopathology among child and adolescent survivors of disasters: A systematic review of epidemiological studies across 1987–2011. *Social Psychiatry and Psychiatric Epidemiology* 48, 1697–1720. <https://doi.org/10.1007/s00127-013-0731-x>

Abstract

Aims: The goal of this paper was to systematically review evidence on (1) the potential magnitude of the psychopathological impacts of community-wide disasters on child and adolescent survivors, and (2) the long-term course or trajectory of disaster-induced psychopathology among children and adolescents.

Methods: The PubMed/MEDLINE and PsycINFO databases were searched from their respective inception through December 2011. All of the resulting epidemiological studies of child and adolescent survivors following community-wide disasters were examined.

Results: Sixty cross-sectional studies and 25 longitudinal or long-term follow-up studies were identified. The estimated rates of posttraumatic stress disorder (PTSD) and depression among child and adolescent survivors varied greatly across the included studies, ranging from 1.0 to 95 % and 1.6 to 81 %, respectively, while the reported rates of diagnosable PTSD according to the DSM-IV criteria and diagnosable depression ranged from 1.0 to 60 % and 1.6 to 33 %, respectively. The long-term courses of psychopathology among youthful survivors were summarized. Methodological issues with those studies were discussed.

Conclusions: The empirical findings summarized in this review highlight the importance of psychosocial intervention at early postdisaster stages for child and adolescent survivors. The methodological flaws revealed by this review indicate the need for continued attempts to better understand the epidemiology and trajectory of psychopathological problems among youthful survivors.

Citation

Wisner, B., Blaikie, P. M., Blaikie, P., Cannon, T., & Davis, I. (2004). *At risk: Natural hazards, people's vulnerability and disasters*. Psychology Press.

Abstract

N/A

Citation

Wisner, B., & Luce, H. R. (1993). Disaster vulnerability: Scale, power and daily life. *GeoJournal*, 30(2), 127-140.



Abstract

N/A

Citation

Wood, M. M., & Bourque, L. B. (2018). Morbidity and mortality associated with disasters. In H. Rodriguez, W. Donner, & J. E. Trainor (Eds.), *Handbook of disaster research* (2nd ed., pp. 357-383). Springer.

Abstract

N/A

Citation

World Health Organization. (2001). International classification of functioning, disability, and health. https://www.cdc.gov/nchs/data/icd/icfoverview_finalforwho10sept.pdf

Abstract

N/A

If you have questions about or updates to this bibliography, please contact us at converge@colorado.edu.

