# Racial and Ethnic Disparities in Post-Disaster Mental Health: Examining the Evidence through a Lens of Social Justice

Jonathan Purtle

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*By Jonathan Purtle*[*]

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## I. Introduction

Disasters do not discriminate. Hurricanes are not racially motivated; pandemics do not hold implicit racial bias. Thus, if social justice is achieved when the "goods" and "bads" in a society are fairly distributed among its members, it would seem logical for natural disasters to affect all members of a society fairly, and thus not considered within the realm of social injustice.[1] History, however, suggests otherwise. Over a century of disasters and public health emergencies in the United States have shown that racial and ethnic minorities often bear a disproportionate burden of these events' adverse health consequences[2]—as evidenced by disparities in mortality, morbidity, and disability.[3]

A robust body of scholarship from the fields of sociology and public health has explored the causes of these persistent disparities. While some factors directly related to constructs of race and ethnicity—such as limited English proficiency and culturally-specific risk communication pref-erences—have been implicated as contributing, in part, to these disparities, the major drivers have been found to be structural in nature.[4] Structural inequities such as systemic poverty, residential segregation, poor education, and political marginalization have all been found to increase risk for adverse health outcomes in, and beyond, disaster contexts.[5] Disasters

1. *See generally* DAVID MILLER, PRINCIPLES OF SOCIAL JUSTICE (1999) (providing a comprehensive account of the definition of social justice utilized in this article. This definition of social justice is closely aligned with principles of distributive justice and has roots in "contraction" conceptions of justice and Rawls' theory of justice as fairness).

2. *See* Dennis P. Andrulis et al., *Preparing Racially and Ethnically Diverse Communities for Public Health Emergencies*, 26 HEALTH AFF. 1269 (2007) (discussing that effective preparation for natural disasters requires consideration of the distinct needs of racially and ethnically diverse communities); *see also* Alice Fothergill et al., *Race, Ethnicity and Disasters in the United States: A Review of the Literature*, 23 DISASTERS 156 (1999) (describing that racial and ethnic minorities have repeatedly suffered disproportionately adverse outcomes after disaster); *see also* RONALD W. PERRY & ALVIN H. MUSHKATEL, MINORITY CITIZENS IN DISASTERS (1986) (discussing how racial and ethnic minorities have fared in natural disasters).

3. *See* Paula Braveman, *Health Disparities and Health Equity: Concepts and Measurement*, 27 ANN. REV. PUB. HEALTH 167 (2006) (providing a definition of health disparities that emphasizes that health disparities do not refer to all differences in health between social groups, but rather differences in which disadvantaged social groups system-atically experience worse health and more health risks).

4. *See* Richard Cooper, *A Note on the Biological Concept of Race and Its Application in Epidemiologic Research* (1984), *in* RACE, ETHNICITY AND HEALTH: A PUBLIC HEALTH READER (Thomas A. LaVeist & Lydia A. Isaac, eds., 2nd ed. 2002) (explaining why race and ethnicity are socially and politically constructed concepts, not biological concepts).

5. *See* Table of Contents, *Race and Class in the 21st Century Through the Lens of*

expose and exacerbate social inequities already present in the populations they affect—they provide case studies in social injustice.[6]

A social justice perspective has begun to inform public, academic, and government discourse about disparities in disaster outcomes, prompting a gradual shift in discussions about the locus of interventions from the individual to the societal level. An agenda of pragmatic social justice—one which pursues culturally, linguistically, and contextually-informed disaster preparedness and response efforts while simultaneously working to ameliorate broader structural inequities—is emerging and represents promise to prevent racial and ethnic disparities in disaster outcomes.[7] While the macro-level determinants of racial and ethnic disparities in disaster-related illness, injury, and death have received considerable attention, the potential role of such determinants in shaping patterns in post-disaster mental health, and racial and ethnic disparities therein, have not been thoroughly explored.

Over the past fifty years, researchers have examined the mental health consequences of disasters. They estimate that thirty to forty percent of individuals directly exposed to disasters develop post-traumatic stress disorder (PTSD); and epidemiological research has successfully identified individual-level factors that are protective against, or confer risk for, adverse mental health outcomes after disasters.[8] These include severity of

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*Hurricane Katrina*, 14 WASH. & LEE J. CIVIL RTS. & SOC. JUST. (2007) Symposium; *see* also *In the Wake of the Storm Environment, Disaster, and Race After Katrina*, RUSSELL SAGE FOUNDATION, http://www.hefn.org/resources/files/In%20the%20Wake%20of%20the%20St orm.pdf (last visited on May 2, 2012) (presenting two, of many, accounts of how structural inequalities contributed to disparate Hurricane Katrina outcomes) (on file with WASH. & LEE J. CIVIL RTS. & SOC. JUST.).

6. *See* Berkeley International Human Rights Clinic, *When Disaster Strikes: A Human Rights Analysis of the 2005 Gulf Coast Hurricanes* 19–22 (March 3, 2006), *available at* http://www.law.berkeley.edu/files/IHRLC/Briefing_Paper_Report_When_Disaster_Strikes_ 2_Mar_06.pdf (providing a human rights perspective on disparities in disaster outcomes in the United States. This perspective is complimentary to, but distinct from, a social justice perspective).

7. *See* Debra DeBruin et al., *Social Justice in Pandemic Preparedness*, 102 AM. J. PUB. HEALTH. 586, 586 (2012) (arguing that "[s]ocially disadvantaged persons are more vulnerable to illness, less able to protect themselves through preventive strategies, and more burdened than relatively privileged populations by public health response interventions" and suggesting an approach that acknowledges such "structural inequalities").

8. *See* Sandro Galea et al., *The Epidemiology of Post-Traumatic Stress Disorder after Disasters*, 27 EPIDEMIOLOGY REV. 78, 84–85 (2005) (summarizing findings from a systematic review and identifying individual-level factors that increase risk for the development of PTSD, such as female gender, comorbid psychiatric conditions, previous exposure to traumatic events, and low levels of social support).

disaster exposure, level of social support, income, educational attainment, history of prior traumatic experiences, and chronic stress—factors that are often shaped by structural forces.[9] While many studies have found rates of PTSD and other mental health conditions to be disproportionally high among racial and ethnic minorities after disasters, and unequivocally so, other studies have found similar results but deemed them to be insignificant after statistically controlling for the aforementioned risk factors.[10]

By examining these research findings through a lens of social justice, one seeks to better understand the broad, or "up stream," societal arrangements that shape the distribution risk factors for adverse mental health outcomes across racial and ethnic groups. From a social justice perspective, the question of whether or not racial and ethnic disparities in disaster-related psychopathology persist after controlling for confounding variables is less relevant. The fact that the mental health of specific population groups was disproportionately affected, and that risk factors, for these outcomes were disproportionately prevalent among minority groups, are in and of themselves findings sufficient for action. A social justice perspective asks why racial and ethnic minorities might have more severe disaster exposure, less social support, less income and other risk factors and strives to facilitate social change by highlighting unfair and unintended impacts of these distributions.[11]

This article explores research on racial and ethnic disparities in post-disaster mental health from a social justice perspective. While a meta-analysis is beyond the scope of this article, a narrative synthesis of major findings from the literature is presented. These findings are also discussed within the context of the larger body of knowledge about disparities in physical health outcomes after disasters. In doing so, this article intends to provide a more holistic understanding of the social determinants of mental health outcomes after disasters—what Michael Marmot has referred to as

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9. *See* George A. Bonanno et al., *What Predicts Psychological Resilience after Disaster? The Role of Demographics, Resources, and Life Stress*, 75 J. CONSULTING & CLINICAL PSYCHOL. 671, 678 (2007) (discussing research on psychological resilience).

10. *See* Richard E. Adams & Joseph A. Boscarino, *Differences in Mental Health Outcomes Among Whites, African Americans, and Hispanics Following a Community Disaster,* 68 PSYCHIATRY 250 (2005) (stating that "our study found little support for the hypothesis that Latinos or African Americans consistently suffered from poorer psycho-logical and physical well–being in the aftermath of traumatic events, relative to Whites").

11. *See generally* MADISON POWERS & RUTH FADEN, SOCIAL JUSTICE: THE MORAL FOUNDATIONS OF PUBLIC HEALTH AND HEALTH POLICY (2008) (discussing the reverberating consequences of social injustice across multiple dimensions of well-being).

the "causes of the causes."[12] This synthesis of research and integration of perspectives hopes to provide a foundation for empirical research on the macro-level determinants of mental health outcomes in disasters, and identify policy priorities to promote social justice.

## II. From 'Spanish Flu' to 'Swine Flu': Racial and Ethnic Disparities in Disasters

While Hurricane Katrina turned the national spotlight on the devastating, and suddenly palpable, consequences of what happens when disasters and racial inequality meet, such outcomes are not unique to the twenty-first century.[13] Indeed, history has shown that racial and ethnic disparities are an enduring feature of disasters and public health emergencies in the United States—a phenomenon which persists across time, geography, and disaster type.[14]

In 1918–1919, the Great Pandemic of "Spanish" influenza swept around the world and across the United States. Its impact on different populations within the United States, however, was far from uniform, with archival data suggesting that the disease-specific mortality rate for American Indians was four times that of other ethnic and racial groups.[15] Nearly a century later, in 2009, the influenza H1N1 ("swine flu") pandemic exacted an eerily similar toll on American Indians and Alaska Natives, with indigenous peoples of the United States suffering an H1N1 mortality rate four times that of other ethnic and racial groups.[16]

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12. *See* Michael G. Marmot, *Policy Making With Health Equity at Its Heart*, 307 J. AM. MED. ASS'N 2033 (2012) (using the term "causes of causes" in reference to how forces at the societal level are the root causes of individual-level risk factors for adverse health outcomes).

13. *See* RUSSELL SAGE FOUNDATION, *supra* note 5 and accompanying text.

14. *See generally* Jason David Rivera & DeMond Shondell Miller, *Continually Neglected: Situating Natural Disasters in the African American Experience*, 37 J. OF BLACK STUD. 502 (2007).

15. *See* Amy V. Groom, *Pandemic Influenza Preparedness and Vulnerable Populations in Tribal Communities*, 99 AM. J. PUB. HEALTH, S271 (2009) (discussing the consequences of influenza pandemics on American Indian and Alaska Native populations).

16. CENTERS FOR DISEASE CONTROL AND PREVENTION, *Deaths Related to 2009 Pandemic Influenza A (H1N1) Among American Indian/Alaska Natives–12 States,* 58 MORBIDITY AND MORTALITY WEEKLY REPORT 1341, 1341 (Dec. 11, 2009), *available at* http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5848a1.htm (demonstrating that the mortality rate among the AI/AN population was four times higher than that in other racial and ethnic populations during the 2009 influenza pandemic).

The H1N1 pandemic's disproportionate impact on minority groups was not limited to American Indians and Alaska Natives. A review of national datasets revealed that Hispanics and African Americans fared worse than non-Hispanic Whites.[17] While all three groups reported similar rates of influenza-like illness during the first wave of the pandemic, African Americans (10.9 per 100,000) and Hispanics (8.2) were hospitalized for H1N1 at rates more than double those of non-Hispanic Whites (3.0).[18] H1N1-specific deaths were also disproportionately high among Hispanic youth, who accounted for thirty-one percent of pediatric deaths but only twenty-two percent of the pediatric population.[19]

Such racial and ethnic disparities are not unique to outbreaks of infectious disease. An in-depth exploration of the 1995 Chicago heat wave found that the mortality ratio for African Americans to Whites was 1.5 to 1.0.[20] Following a severe windstorm and power outage in King County, Washington, a carbon monoxide poisoning outbreak bore a disproportionate toll on immigrant and non-English speaking persons.[21] While, in aggregate, Hurricane Katrina-related mortality rates among Orleans Parish, Louisiana, residents were equivalent between African Americans and Whites, an analysis of deaths stratified by age reveals significant disparities.[22] For example, the overall race-specific mortality rate per 10,000 residents was fourteen for African Americans versus fifteen for Whites, but for ages fifty-five to sixty-four, it was thirty-one versus nineteen, respectively.[23] For

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17.   *See* Deborah L. Dee et al., *Racial and Ethnic Disparities in Hospitalizations and Deaths Associated with 2009 Pandemic Influenza A (H1N1) Virus Infections in the United States*, 8 ANNALS OF EPIDEMIOLOGY 623, 623 (2011) (describing the prevalence of self-reported influenza-like illness among various racial and ethnic groups).

18.   *See id*. (presenting data on differences in hospitalization rates between African Americans, Hispanics, and non-Hispanic Whites).

19.   *See id*. (analyzing the proportionality of Hispanic deaths relative to the Hispanic population).

20.   *See generally* ERIC KLINENBERG, HEAT WAVE: A SOCIAL AUTOPSY OF DISASTER IN CHICAGO (2003) (analyzing the number of heat-related deaths among African Americans and Whites during the 1995 Chicago heat wave).

21.   Reena K. Gulati et al., *Carbon Monoxide Epidemic Among Immigrant Populations: King County, Washington, 2006*, 99 AM. J. PUB. HEALTH 1687, 1679 (2009) (concluding that educational campaigns to prevent carbon monoxide poisoning should consider immigrants' cultural practices and languages).

22.   *See* Joan Brunkard et al., *Hurricane Katrina Deaths, Louisiana, 2005*, 2 DISASTER MED. & PUB. HEALTH PREPAREDNESS 215 (2008) (revealing racial disparities in Hurricane Katrina mortality).

23.   *See id*. at 218 (providing a table illustrating disparities in deaths by race and age group).

those ages of sixty-five to seventy-four, the rate was fifty for African Americans versus seventeen for Whites. For those over seventy-five years old, the rate was one hundred-fifty versus ninety-four, respectfully.[24] On average, age-specific mortality rates were 2.5 times higher among African Americans than Whites.[25]

To be sure, "racial and ethnic minorities" in the United States are an extremely heterogeneous population, and one must be cautious in making gross generalizations about why these disparities occurred across different racial and ethnic groups. Nevertheless, specific factors have repeatedly emerged as contributing to disparate outcomes. These include proximal factors relating to language, culture, and trust that inhibit the effectiveness of risk communication strategies and distal factors related to structural inequality.

### A. Communicating Risk: The Role of Language, Cultural, and Trust

According to the Centers for Disease Control and Prevention,[26] risk communication entails an "attempt by science or public health professionals to provide information that allows an individual, stakeholders or an entire community, to make the best possible decisions about their well-being . . . ."[27] Perceptions of risk, clarity of messages, trustworthiness of message providers, and myriad other factors influence the extent to which individuals pursue action that is in accordance with the recommendations of risk communication messages (e.g., get a flu shot or evacuate an area). Research from past disasters has demonstrated that issues pertaining to language, culture, and trust often inhibit the effectiveness of risk communication strategies—contributing to increased disaster exposure, vulnerability, and disparities in outcomes as a result.[28]

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24. *See id.* at 221 (stating that the effect of age on overall storm mortality masked disparities race-specific mortality rates).

25. *See id.*

26. CENTERS FOR DISEASE CONTROL & PREVENTION, *Crisis and Emergency Risk Communication*, at ii (Sept. 2002), http://emergency.cdc.gov/cerc/pdf/CERC-SEPT02.pdf. (last visited May 5, 2012) (defining risk communication) (on file with WASH. & LEE J. CIVIL RTS. & SOC. JUST.).

27. *See id.*

28. *See* Sandra Crouse Quinn, *Crisis and Emergency Risk Communication in a Pandemic: A Model for Building Capacity and Resilience of Minority Communities*, 9 HEALTH PROMOTION PRAC. 18S–S25 (2008) (discussing implications specific to pandemic planning).

By virtue of being the *de facto* national language of the United States, it is not surprising that risk communication messages are often only disseminated in English—despite federal commitments to improving the linguistic appropriateness of health information.[29] This situation has contributed to disparities across all phases of disasters. For example, a series of focus groups conducted after Hurricane Ike found that individuals with limited English proficiency were insufficiently aware of actions they should have taken to prepare for the storm, and they had difficulty understanding risk communication messages, leaving some to rely on television images alone to gauge the severity of the storm.[30] In Hurricane Katrina, a lack of non-English information increased disaster exposure among those with limited English proficiency contributed to health risks after the storm and hindered recovery processes.[31] Language also posed a substantial barrier to

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29. *See generally* OFFICE OF MINORITY HEALTH, U.S. DEP'T OF HEALTH & HUMAN SERVS., NAT'L STANDARDS ON CULTURALLY AND LINGUISTICALLY APPROPRIATE SERVS., http://minorityhealth.hhs.gov/templates/browse.aspx?lvl=2&lvlID=15 (last visited May 5, 2012) (enumerating federal mandates, guidelines, and recommendations for culturally and linguistically appropriate services in health care settings) (on file with WASH. & LEE J. CIVIL RTS. & SOC. JUST.).; *see also* Federico Subervi, *An Achilles Heel in Emergency Communications: The Deplorable Policies and Practices Pertaining to Non English Speaking Populations*, CTR. FOR THE STUDY OF LATINO MEDIA & MKTS., SCH. OF JOURNALISM (2010), *available at* http://www.diversitypreparedness.org/SiteData/docs/Final%20Repo/666c47f964a791c8/Final%20Report%20Subervi.pdf (stating that the linguistic appropriateness of risk communication policies and practices in central Texas is unacceptable); Ann Bessie Mathew, MPH & Kimiko Kelly, MPP, *Disaster Preparedness in Urban Immigrant Communities: Lessons Learned from Recent Catastrophic Events and their Relevance to Latino and Asian Communities in Southern California*, TOMÁS RIVERA POLICY INST. & ASIAN PAC. AM. LEGAL CTR (June 2008), http://www.trpi.org/PDFs/DISASTER_REPORT_Final.pdf (last visited May 5, 2012) (discussing challenges to communications with Hispanic and Asian American communities in Southern California in disaster contexts) (on file with WASH. & LEE J. CIVIL RTS. & SOC. JUST.).

30. *See* Vishnu Nepal et al., *Disaster Preparedness of Linguistically Isolated Populations: Practical Issues for Planners*, 13 HEALTH PROMOTION & PRAC. 265, 265–66 (2012) (discussing the shortcomings of broadcasting disaster information exclusively in English).

31. *See* Susan S. Kuo, *Speaking in Tongues: Mandating Multilingual Disaster Warnings in the Public Interest*, 14 WASH. & LEE J. CIV. RTS. & SOC. JUST. 1, 6 (2007) (noting that residents who only spoke Spanish were deprived of crucial information); *see also* Brenda Muñiz, *In the Eye of the Storm: How the Government and Private Response to Hurricane Katrina Failed Latinos*, NAT'L COUNCIL OF LA RAZA (2006), http://www.fachc.org/pdf/mig_ncla_Katrina_Report_FINAL.pdf (last visited May 5, 2012) (discussing hurricane warnings and the reluctance of immigrants to ask for help for fear of deportation) (on file with WASH. & LEE J. CIVIL RTS. & SOC. JUST.).

Vietnamese fishing communities accessing recovery resources after the Deepwater Horizon oil spill.[32]

Even when risk communication messages are language appropriate, they may not reach minority communities, or prompt desired behaviors, if the source through which they are disseminated is not aligned with cultural preferences. For example, a number of studies have found a preference for receiving disaster-related information through word-of-mouth, community leaders, and ethnic media as opposed to "mainstream" sources racial and ethnic minority communities.[33] Perceptions of risk may also differ between racial and ethnic minorities and the non-Hispanic Whites to whom messages are often implicitly targeted.[34] For example, a study of African Americans who opted not to evacuate New Orleans during Hurricane Katrina found that religious faith and feelings of optimism about the storm strongly contributed to their decisions.[35] Mexican-Americans have been found to have lower perceptions of natural disaster risk; and low perceptions of H1N1 risk among Somali refugees in Maine were found to

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32. *See* Jessica Ravitz, *Vietnamese Fishermen in Gulf Fight Not to Get Lost in Translation*, CNN, (June 25, 2010), http://www.cnn.com/2010/US/06/24/vietnamese. fishermen.gulf.coast /index.html?hpt=C1 (last visited May 5, 2012) (reporting on language barriers in the Gulf Coast region) (on file with WASH. & LEE J. CIVIL RTS. & SOC. JUST.).

33. *See* Anthony A. Peguero, *Latino Disaster Vulnerability: The Dissemination of Hurricane Mitigation Information Among Florida's Homeowners*, 28 HISP. J. BEHAV. SCI. 5 (2006) (presenting the findings of a study of Latino home owners in Florida); *see also* Nepal, *supra* note 30 (presenting similar results from Hurricane Ike); David P. Eisenman et al., *Disaster Planning and Risk Communication With Vulnerable Communities: Lessons from Hurricane Katrina*, 97 AM. J. PUB. HEALTH S109 (Apr. 2007) (presenting results from research about Hurricane Katrina); Elena Shore, *Ethnic Media Cover the Fires*, NEW AMERICA MEDIA, (Oct 25, 2007), http://news.newamericamedia.org/news/view_article. html?article_id=b5100c5213 c00fe7203d2b065baa82ee (presenting results from wildfires); MULTNOMAH COUNTY HEALTH DEP'T, *How Communication Currently Works within Culturally-Specific Communities*, (Apr. 1, 2009), http://www.diversitypreparedness.org/Site Data/docs/Multnomah_Synthesis_Chart/8c27e8ab6040e0c770b3e3bda4892ae8/Multnomah _Synthesis_Chart.pdf (last visited May 5, 2012) (presenting results of a study of risk communication preferences across different racial and ethnic groups) (on file with WASH. & LEE J. CIVIL RTS. & SOC. JUST.).

34. *See generally* Ronald W. Perry & Marjorie R. Green, *The Role of Ethnicity in the Emergency Decision-Making Process*, 52 SOC. INQUIRY 306 (1982); *see also* Elaine Vaughan, *The Significance of Socioeconomic and Ethnic Diversity for the Risk Communication Process*, 15 RISK ANALYSIS 169 (1995); Patric R. Spence, et al., *Crisis Communication, Race, and Natural Disasters*, 37 J. BLACK STUD. 539 (2007), *available at* http://cretscmhd.psych.ucla.edu/nola/volunteer/EmpiricalStudies/Crisis%20communication %20race,%20and%20natural%20disasters.pdf.

35. *See* Keith Elder et al., *African Americans' Decisions Not to Evacuate New Orleans Before Hurricane Katrina: A Qualitative Study*, 97 AM. J. PUB. HEALTH S124 (2007) (describing the role religious faith plays in disaster decision making processes).

be strongly influenced by a sense of religious determinism.[36] These perceptions may hinder the effectiveness of risk communications strategies if public health officials fail to account for the cultural heterogeneity of their audience.

Another factor that influences the likelihood of individuals acting in accordance with risk communication messages is the perceived trustworthiness of the message provider. Injustices of the past, such as the Tuskegee syphilis study, and injustices of the present, such as racial and ethnic profiling by police, may negatively impact the perceived trustworthiness of risk communication messages disseminated by government officials, limiting their effectiveness and increasing disaster risk among racially and ethnically diverse communities as a result.[37]

During Hurricane Katrina, distrust in police and emergency officials contributed to African Americans' decisions not to evacuate.[38] Lack of trust in law enforcement officials and fear of deportation discouraged undocumented Hispanic immigrants from acting in compliance with evacuation warnings during Hurricane Gustav.[39] A similar dynamic was present

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36. *See* Ronald W. Perry et al., *Crisis Communications: Ethnic Differentials in Interpreting and Acting on Disaster Warnings*, 10 Soc. BEHAV. & PERSONALITY 97, 97–99 (1982) (describing differences among Mexican Americans and other racial and ethnic groups); *see also* Amy Lippman, Presentation at The National Conference on Quality Health Care for Culturally Diverse Populations: Disaster Threats to Vulnerable Populations: Cultural Competency Critical to Disaster Preparedness (Oct. 20, 2010), *available at* http://www.diversitypreparedness.org/Topic/Subtopic/Record-Detail/18/communityid--9792 /resourceid—18911/ (referring to perceptions of H1N1 risk among Somali refugees); David P. Eisenman et al., *Terrorism-Related Fear and Avoidance Behavior in a Multiethnic Urban Population*, 99 AM. J. PUB. HEALTH 168 (2009) (presenting counter findings in regard to terrorism, as opposed to natural disaster threats, and finding that racial and ethnic minority groups had higher perceptions of terrorism risk).

37. *See* CTRS. FOR DISEASE CONTROL AND PREVENTION, *U.S. Public Health Service Syphilis Study at Tuskegee*, (June 15, 2011), http://www.cdc.gov/tuskegee/timeline.htm (last visited May 5, 2012) (describing the history and ethics of the Tuskegee Syphilis Study—an unethical study that neither informed a group of African American men that they were participating in a research study nor provided them with proper medical treatment for syphilis) (on file with WASH. & LEE J. CIVIL RTS. & SOC. JUST.).

38. *See* Kristina M. Cordasco et al., *"They Blew the Levee": Distrust of Authorities Among Hurricane Katrina Evacuees*, 18 J. HEALTH CARE POOR & UNDERSERVED 277 (2007) (describing distrust in local authorities during Hurricane Katrina); *see also* Keith Elder et al., *African Americans' Decisions Not to Evacuate New Orleans Before Hurricane Katrina: A Qualitative Study*, 97 AM. J. PUB. HEALTH S124 (2007).

39. *See* Peter Prengaman, *Illegal Immigrants Opted to Stay During Hurricane Gustav*, USA TODAY (Sept. 2, 2008, 6:50 PM), http://usatoday30.usatoday.com/news/nation/2008-09 -02-2675276023_x.htm.

among Hispanic farm workers during the 2007 California wildfires.[40] Lack of trust in public health officials and the medical establishment may have also contributed to disparities in H1N1 vaccine uptake during the pandemic. A nationally representative survey conducted during the pandemic found that African Americans were significantly less likely to perceive the vaccine as being safe than non-Hispanic Whites, while a separate national survey found that African Americans were vaccinated at a rate two-thirds that of Whites (fourteen percent vs. twenty percent), despite the widespread availability of the vaccine at no cost.[41]

This body of evidence from past disasters suggests that language, culture, and trust often limit the effectiveness of risk communication messages, contributing to disparities in disaster exposure, vulnerability, and outcomes. While federal entities, public health officials, and other key stakeholders are coming to recognize the importance of disseminating linguistically appropriate and culturally tailored information through trusted sources, these efforts are unlikely to be a panacea for disparities in disaster outcomes. Broader social inequities are the major determinants of disaster risk.

## B. Looking Upstream: Site and Situation

Structural factors that contribute to racial and ethnic disparities in disaster outcomes can be conceptualized as belonging to two broad, inter-related categories—site and situation; both of which are associated with race and ethnicity in the United States.[42] Site refers to the geographic location of a community and its proximity to disaster threats. For example,

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40. *See* Arcela Núñez-Alvarez et al., NAT'L LATINO RESEARCH CTR., SAN DIEGO FIRESTORM REPORT 2007: FIRE IMPACT ON FARMWORKERS & MIGRANT COMMUNITIES IN NORTH COUNTY, http://www.diversitypreparedness.org/SiteData/docs/NLRC%20Wildf/4a23 c4ff37dd4c8f/NLRC%20Wildfires%20Report%202007%20Rev.pdf (last visited May 5, 2012) (on file with WASH. & LEE J. CIVIL RTS. & SOC. JUST.).

41. *See* Ezequiel Galarce et al., *Socioeconomic Status, Demographics, Beliefs and A(H1N1) Vaccine Uptake in the United States*, 29 VACCINE 5284 (2011) (finding disparities in perceptions of vaccine safety, but not disparities in vaccine uptake); *see also* Lori Uscher-Pines et al., *Racial and Ethnic Disparities in Uptake and Location of Vaccination for 2009-H1N1 and Seasonal Influenza*, 101(7) AM. J. PUB. HEALTH 1252 (2011) (presenting findings of significant disparities in H1N1 vaccine uptake between African Americans and Whites in a nationally representative survey).

42. *See* Andrew J. Curtis et al., *Katrina and Vulnerability: The Geography of Stress*, 18(2) J. HEALTH CARE POOR & UNDERSERVED 315 (2007) (discussing vulnerability as product site and situation).

communities located below a levee, next to an oil refinery, or in a densely populated urban area are all geographically located at sites that are at increased risk for disaster exposure.[43]  Alternately, situation refers to the social, economic, and political characteristics of communities that influence exposure, vulnerability, and resilience to disasters. Lack of income, reliance on public transportation, structurally unsound housing, renting as opposed to owning a home, limited political power, and poor health status are situational factors that increase disaster vulnerability.[44]

Site and situation are not discrete characteristics, and influence each other in a bi-directional fashion. A community with a vulnerable situation (e.g., a high poverty rate) may be located at a vulnerable site (e.g., next to a levee) because it is an undesirable, and thus inexpensive, place to live. Conversely, a community located at a vulnerable site (e.g., next to a factory), may have a vulnerable situation (e.g., high prevalence of asthma) because of prolonged exposure to factory emissions. While the dynamics of site and situation play out differently across different disaster scenarios, racial and ethnic minority communities have historically experienced the less favorable of each in the United States, contributing to disparities in disaster outcomes as a result.

Social inequalities, manifest in site and situation, are likely to have played a substantial role in H1N1 disparities as they increased exposure and susceptibility to the virus.[45]  For example, social distancing (i.e., limiting contact with infected or potentially infected individuals) is an effective strategy for preventing the spread of communicable disease and was a leading recommendation of public health officials during the pandemic.[46] A major determinant of one's ability to comply with social distancing

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43.    *See* Susan L. Cutter et al., *Social Vulnerability to Environmental Hazards*, 84 SOC. SCI. Q. 242, 243 (2003) ("The hazard potential is either moderated or enhanced by a geographic filter (site and situation of the place, proximity) as well as the social fabric of the place.").

44.    *See* Alice Fothergill & Lori A. Peek, *Poverty and Disasters in the United States: A Review of Recent Sociological Findings*, 32 NAT. HAZARDS 89 (2004) (reviewing research on the role of poverty in disaster outcomes).

45.    *See* Philip Blumenshine et al., *Pandemic Influenza Planning in the United States from a Health Disparities Perspective*, 14 EMERGING INFECTIOUS DISEASES 709 (2008) (exploring how various socioeconomic, racial, and ethnic groups in the United States might fare in an influenza pandemic based on social factors shaping exposure, vulnerability, and timeliness and adequacy of treatment).

46.    *See* WORLD HEALTH ORGANIZATION WRITING GROUP, *Non-Pharmaceutical Interventions for Pandemic Influenza, International Measures*, CTRS. FOR DISEASE CONTROL AND PREVENTION, 12 POL'Y REV. No. 1 (Jan. 2006), *available at* http://wwwnc.cdc.gov/eid /article /12/1/ 05-1371_article.htm.

recommendations, however, was the presence of workplace paid sick leave policies; these policies were found to be disproportionately absent among Hispanic workers.[47]  One study estimated that disparities in paid sick leave polices contributed to an additional 1.2 million cases of probable H1N1 among Hispanics.[48]

Social factors are also likely to have increased susceptibility to the virus. A growing body of research indicates that low socioeconomic status is associated with suppressed immune system function, thus increasing susceptibility to infectious disease.[49]  Probable mechanisms underlying this association include inadequate nutrition, deleterious health behaviors, and psychosocial stress associated with low socioeconomic position. Given the disproportionately high rates of poverty, violence, and food insecurity in many marginalized racial and ethnic minority communities, these factors likely contributed to disparities in H1N1 mortality and morbidity. Chronic health conditions, such as asthma and diabetes, that are excessively prevalent in minority communities—and have complex, but socially produced etiologies—also significantly increased risk for H1N1-related complications.[50]

Prior to the H1N1 pandemic, disaster research had largely focused on weather-related and technological disasters, not outbreaks of infectious disease. The H1N1 pandemic provided a novel, but confirmatory, case study in how disparities in disaster outcomes are driven by structural factors

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47.    *See* Sandra Crouse Quinn et al., *Racial Disparities in Exposure, Susceptibility, and Access to Health Care in the US H1N1 Influenza Pandemic*, 101 AM. J. PUB. HEALTH 285 (2011); *see also* U.S. BUREAU OF LABOR STATISTICS, *Paid Sick Leave in the United States*, http://www.bls.gov/opub/perspectives/program_perspectives_vol2_issue2.pdf (last visited May 5, 2012) (providing information on disparities in workplace paid sick leave policies by income and occupation type) (on file with WASH. & LEE J. CIVIL RTS. & SOC. JUST.).

48.    *See* Supriya Kumar et al., *The Impact of Workplace Policies and Other Social Factors on Self-Reported Influenza-Like Illness Incidence During the 2009 H1N1 Pandemic*, 102 AM. J. PUB. HEALTH 134 (2012).

49.    See Sheldon Cohen, *Social Status and Susceptibility to Respiratory Infections*, 896 ANNALS N.Y. ACAD. SCI. 246 (1999).

50.    *See* CTRS. FOR DISEASE CONTROL AND PREVENTION, *Behavioral Risk Factor Surveillance System* (2010), *available at* www.cdc.gov/brfss/ (estimating that fourteen percent of African Americans had diabetes in 2010 compared to eight percent of Whites; and that eleven percent of African Americans had asthma compared to eight percent of Whites)*; see also* Robert Allard et al., *Diabetes and the Severity of Pandemic Influenza A (H1N1) Infection*, 33 DIABETES CARE 1493 (2010) (finding that diabetes tripled the risk of H1N1 hospitalization and increased the risk of intensive care unit admission by a factor of seven); *see also* CTRS. FOR DISEASE CONTROL AND PREVENTION, *Asthma, Diabetes, and Other Health Conditions Bring Greater Flu Risks*, *available at* http://www.cdc.gov/flu/pdf/matte/flu-health-conditions.pdf (outlining H1N1 risk associated with chronic disease).

that differentially allocate resources, and in turn disaster risk, across racial and ethnic lines. While individual-level factors pertaining to language, culture, and trust are likely to play some role in shaping disparate outcomes, the research presented suggests that macro-level inequalities—such as those pertaining to income, education, occupation type, and political power—are the major drivers.

These findings, especially when considered within the broader context of social science research, underscore the fact that race and ethnicity are not discrete, static variables, but fluid constructs that embody the social and historical significance of race and ethnicity in the United States. Disparities in disaster outcomes are much less the result of factors commonly associated with constructs of race and ethnicity, such as culture and language, than the vestiges of Jim Crow-era policies, racism, and discrimination that pervade multiple levels of society.[51]

This realization has allowed for discourse to expand around the causes of racial and ethnic health disparities in disaster outcomes, and mobilized the public health community to advocate for sweeping public policy changes in the name of public health and social justice. As prominent disaster mental health epidemiologist Sandro Galea notes, however, the macro-level factors that shape patterns in post-disaster mental health outcomes have remained less thoroughly explored.[52]

### III. From Site and Situation to Post-Traumatic Stress: Exploring the Causes of the Causes

Approximately one-in-five people will experience a natural disaster at some point in their life; and it is estimated that between thirty and forty percent of people develop PTSD in the first year following the disaster.[53] While PTSD is the most commonly studied mental health outcome in the wake of disasters, conditions such as depression and acute stress disorder also often occur. There is substantial variation in how disasters affect the mental health of individuals exposed—variations which can be thought of

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51. *See* Camara Phyllis Jones, *Levels of Racism: A Theoretic Framework and A Gardener's Tale*, 90 AM. J. PUB. HEALTH 1212 (discussing how racism works to perpetuate health disparities at institutional, interpersonal, and individual levels. The reverberating consequences of Jim Crow-era policies fall within the category of institutionalized racism).

52. *See* Galea, *supra* note 8, at 85 (highlighting the dearth of research devoted to examining how macro-level factors influence risks of PTSD in the post-disaster context).

53. *See id*. at 84 ("The empirical evidence suggests that the prevalence of PTSD among direct victims of disasters is 30–40 percent.").

as occurring over time along trajectories of resistance, resilience, or recovery.[54] A general understanding of these concepts is important to considering post-disaster mental health outcomes within the context of social justice.

Resistance occurs when exposure to a potentially traumatic event has no, or very little, mental health impact.[55] Resistance is a rare trajectory after disasters as most people experience emotional distress for at least a brief period of time.[56] Alternatively, resilience is perhaps the most common disaster mental health trajectory and is characterized by a period of psychological distress, but one that does not interfere with normal, healthy functioning.[57] People are resilient, and 'bounce back,' as their symptoms gradually attenuate over time. In contrast to resilience, recovery is characterized by a period of disrupted functioning, lasting months or years, followed by an eventual return to pre-disaster mental health.[58]

The mental health consequences of disasters, or lack thereof, are mediated and moderated by psychological characteristics and access to coping resources, both material and social, which shape trajectories of resistance, resilience, or recovery. Interestingly, many of the factors which confer risk for adverse post-disaster mental health outcomes are the same as, or associated with, those which contribute to racial and ethnic disparities in physical health outcomes, but function through psychosocial, as opposed to material, pathways.[59] This raises questions regarding how racial and

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54. *See* George A. Bonanno, *Loss, Trauma, and Human Resilience: Have We Underestimated the Human Capacity to Thrive after Extremely Aversive Events?* 59 AM. PSYCHOLOGIST 1, 20–28 (2004) (describing the distinctions between resilience, resistance, and recovery); *see also* George A. Bonanno & Anthony D. Mancini, *The Human Capacity to Thrive in the Face of Potential Trauma*, 121 PEDIATRICS 2, 369–75 (2008) (focusing on psychological resilience in children); Fran H. Norris et al., *Looking for Resilience: Understanding the Longitudinal Trajectories of Responses to Stress*, 68 SOC. SCI. & MED. 2190–98 (2009) (discussing different trajectories in resilience and recovery among two large samples of individuals exposed to disasters).

55. *See* Fran H. Norris et al., *Looking for Resilience: Understanding the Longitudinal Trajectories of Responses to Stress*, 68 SOC. SCI. & MED., at 2191 ("[W]e should use the concept of resistance (not resilience) to describe situations where dysfunction is minimal because coping resources have effectively blocked the stressor.").

56. *See id.* ("Resistance is an unlikely course in the aftermath of extreme stressors, such as disasters, where distress is nearly universal in the first weeks or months.").

57. *See id.* at 2192 (contending that resilience is a more frequently occurring phenomenon than resistance).

58. *See id.* at 2191 (providing a definition of recovery).

59. *See* Michael Marmot & Richard G. Wilkinson, *Psychosocial and Material Pathways in the Relation Between Income and Health: A Response to Lynch Et Al.*, 322 BMJ 1233, 1233–36 (2001) (discussing the differences between psychosocial and material

ethnic inequalities in the 'goods of social justice' (e.g., income, education, political power) could have collateral consequences for mental health after disasters.

### A. The Goods of Social Justice and Post-Disaster Mental Health

The first systematic review of disaster mental health research appeared in a 2002 article by Norris and colleagues entitled "60,000 Disaster Victims Speak."[60] The article reviewed the results of studies conducted on disasters and mental health outcomes between 1981 and 2001 with the aim of obtaining a more robust understanding of risk and protective factors for mental health outcomes after disasters.[61] The results of 160 independent samples were analyzed, creating a study sample of over 60,000 individuals.[62] The review found that demographic variables (i.e., female gender, being middle age, and ethnic minority status), chronic stress, pre-existing mental health problems, prior trauma, low income, low education, severity of disaster exposure, and low levels of social support all increased risk.[63]

These findings were relatively consistent with the broader body of research on factors that mediate and moderate the relationship between all potentially traumatic experience, not just disasters, and PTSD.[64] Despite *a priori* knowledge of persistent disparities in the distribution of many of these risk factors across racial and ethnic groups, evidence of racial and

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pathways to health outcomes. Using income as an example, lack of income can lead to poor health through a material pathway by preventing a person from being able to afford healthy foods. Lack of income can also lead to poor health through a psychosocial pathway as the psychological stress of not being able to make ends meet exacts a physiological toll on the body).

60.    Fran H. Norris et al*., 60,000 Disaster Victims Speak: Part I. An Empirical Review of the Empirical Literature, 1981–2001*, 65 PSYCHIATRY 207 (2002); *see also* Fran H. Norris et al., *60,000 Disaster Victims Speak: Part II. Summary and Implications of the Disaster Mental Health Research*, 65 PSYCHIATRY 240 (2002).

61.    *Id.*

62.    *Id.*

63.    *Id.*

64.    *See generally* Chris R. Brewin, *Meta-Analysis of Risk Factors for Posttraumatic Stress Disorder in Trauma-Exposed Adults*, 68 J. CONSULTING & CLINICAL PSYCHOL. 748 (2000) (presenting the results of a meta-analysis of risk factors for PTSD after traumatic experiences); *see also* George A. Bonanno, *What Predicts Psychological Resilience After Disaster? The Role of Demographics, Resources, and Life Stress*, 75 J. CONSULTING & CLINICAL PSYCHOL. 671 (2007) (exploring factors which promoted resilience among New York City area residents after the September 11th attacks).

ethnic disparities in mental health outcomes after disasters is somewhat inconsistent.

### B. Reviewing Evidence of Racial and Ethnic Disparities in Post-Disaster Mental Health Outcomes

In the aforementioned "60,000 Disaster Victims Speak" study, all five of the adult studies reviewed, which collected information on race and ethnicity, found that racial and ethnic minorities suffered disproportionately higher rates of psychological distress.[65] This was also found to be the case among four of the six youth studies reviewed. Among these studies was one which found substantial differences in PTSD among non-Hispanic Whites (fifteen percent), African Americans (twenty-three percent), and Spanish-speaking Hispanics (thirty-eight percent) in southern Florida six months after Hurricane Andrew.[66] The authors attributed these disparities, in part, to differences in disaster exposure and disaster vulnerability (i.e., insufficient access to resources to buffer the mental health effects of the disaster). A 2005 review article with an explicit focus on the mental health of racial and ethnic minorities after disasters also concluded that persistent disparities existed and that socioeconomic inequalities, not cultural characteristics, underlie these disparities.[67]

Since these seminal works were published, however, a breadth of research has been published on two major disasters of the twenty-first century—Hurricane Katrina and the terrorist attacks of September 11, 2001. These recent studies paint a more complex picture of the role of race and ethnicity and the processes through which trajectories of resistance, resilience, and recovery are shaped.

While many of Hurricane Katrina's impacts on racial and ethnic minority communities were apparent immediately after the storm made

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65.  Norris, *supra* note 60, at 235 ("Ethnic groups who are of minority group status most often fared more poorly than persons who are of majority group status.").

66.  *See* Julia L. Perilla et al., *Ethnicity, Culture, and Disaster Response: Identifying and Explaining Ethnic Differences in PTSD Six Months After Hurricane Andrew*, 21 J. Soc. & Clinical Psychol. 20 (2002).

67.  *See* Fran H. Norris & Margarita Alegria, *Mental Health Care for Ethnic Minority Individuals and Communities in the Aftermath of Disasters and Mass Violence*, 10 CNS Spectrums 132 (2005), *available at* http://www.cnsspectrums.com/aspx/articledetail.aspx?articleid=313 ("Moreover, ethnic differences in posttraumatic stress may be accounted for by various risk factors, such as low socioeconomic status, chronic adversities, and differential exposure to the event itself, that have little to do with culture, per se.").

landfall, the full extent of its mental health consequences did not emerge until much later. A study of acute stress disorder (ASD) among Hurricane Katrina evacuees conducted in the weeks following the disaster found that African Americans had significantly higher scores of ASD symptom severity, but no racial or ethnic disparities between those meeting full diagnostic criteria for ASD.[68] The study also found that African Americans had higher levels of disaster exposure and lower income, leading the authors to conclude "that racial status is likely to confer vulnerability on survivors through a complex interaction of factors that have been referred to as 'the social political ecology of disaster.'"[69]

A survey of mental illness among individuals displaced by Hurricane Katrina conducted one year after the storm, however, revealed substantial and statistically significant racial disparities.[70] Thirty-one percent of African American respondents were found to have serious mental illness, compared to six percent of Whites. The magnitude of this disparity was reduced, but remained statistically significant, after controlling for income and education.[71] Level of educational attainment was found to be the strongest predictor of mental illness one year after the storm, with those holding less than a high school education being four times more likely to have mental illness.[72]

Evidence of Hurricane Katrina's toll on the mental health of racial and ethnic minority communities is also apparent from the results of studies which lacked a non-minority comparison group. A unique study, in which data were available on the pre-disaster mental health status of low-income, predominantly female and African American New Orleans parents, found that the prevalence of serious mental illness doubled in the year after the storm.[73] A follow-up study found that these symptoms decreased slightly,

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68. *See* Mary Alice Mills, *Trauma and Stress Response Among Hurricane Katrina Evacuees*, 97 AM. J. PUB. HEALTH. S116, S120 (2007) (explaining that racial minority status was associated with higher scores of ASD symptom severity).

69. *Id.* at S116.

70. *See* Narayan Sastr & Mark Van Landingham, *One Year Later: Mental Illness Prevalence and Disparities among New Orleans Residents Displaced by Hurricane Katrina*, 99 AM. J. PUB. HEALTH S725 (2009) (finding that African Americans were more likely to have a serious mental illness after Hurricane Katrina than non-Hispanic Whites).

71. *Id.* at S728 ("We observed other statistically significant disparities in mental illness by income, education, and place of birth.").

72. *Id.* at S729 ("Individuals with a high school education or less experienced a 4-times higher likelihood of having mental illness compared with those with more than a high school education.").

73. *See* Jean Rhodes et al., *The Impact of Hurricane Katrina on the Mental and*

but persisted five years after the storm—especially among those with poor mental health prior to the storm and low socioeconomic status.[74] A study of Vietnamese Americans who survived the Hurricane found that financial strain and social support were robust predictors of mental health outcomes.[75]

The terrorist attacks of September 11, 2001 had a psychological impact on the nation as a whole, especially residents of the New York City metropolitan area.[76] Moreover, evidence suggests that some racial and ethnic minority groups suffered a disproportionate amount of psychological distress.

A survey of New York City metropolitan area residents conducted six months after September 11, 2001 found disparities in PTSD among Hispanics.[77] The results indicated that PTSD was substantially more prevalent among Hispanics of Dominican (14.3%) and Puerto Rican (13.2%) descent than Hispanics of other origins (6.1%) or non-Hispanics (5.2%). The authors found that social support, socioeconomic position, severity of disaster exposure, and emotional reactions accounted for some, but not all, of the disparities observed between ethnic groups.

Another study of mental health outcomes among New York City residents after the September 11th attacks explicitly sought to test the

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*Physical Health of Low-Income Parents in New Orleans,* 80 AM. J. ORTHOPSYCHIATRY 237 (2010).

74. *See* Christina Paxson et al., *Five Years Later: Recovery from Post Traumatic Stress and Psychological Distress Among Low-Income Mothers Affected by Hurricane Katrina*, 74 SOC. SCI. MED. 150, 155 (2012) ("Between 3.5 and 4.5 years (43 and 54 months) after the hurricane, nearly 30% of our sample had levels of psychological distress high enough to indicate probable mental illness.").

75. *See* Angela Chia-Chen Chen et al., *Hurricane Katrina: Prior Trauma, Poverty and Health among Vietnamese-American Survivors,* 54 INT'L NURS. REV. 324 (2007) ("Findings suggested financial strain was the strongest risk factor for Vietnamese survivors' post-traumatic stress disorder (PTSD) symptoms, and physical and mental health post-disaster; while social support was a strong protective factor for health.").

76. *See* William E. Schlenger et al., *Psychological Reactions to Terrorist Attacks: Findings from the National Study of Americans' Reactions to September 11*, 288 JAMA 581 (2002) ("PTSD was associated with direct exposure to the terrorist attacks among adults, and the prevalence in the New York City metropolitan area was substantially higher than elsewhere in the country.").

77. *See* Sandro Galea et al., *Hispanic Ethnicity and Post-Traumatic Stress Disorder after a Disaster: Evidence from a General Population Survey after September 11, 2001*, 14 ANN. EPIDEMIOLOGY 520 (2004) ("Hispanics of Dominican or Puerto Rican origin (14.3% and 13.2%, respectively) were more likely than other Hispanics (6.1%) and non-Hispanics (5.2%) to report symptoms consistent with probable PTSD after the September 11 terrorist attacks.").

hypothesis that racial and ethnic minorities experience worse mental health outcomes after a disaster.[78]  All racial and ethnic minority groups were found to have significantly lower levels of income, educational attainment, and social support, and substantially more prior trauma. While the study did not find significantly different rates of PTSD between non-Hispanic Whites and other racial and ethnic groups, it found higher rates of PTSD and poor mental health among Dominicans and Puerto Ricans.[79]  All racial and ethnic minority groups had higher rates of panic attacks than non-Hispanic Whites.[80]  Few of these disparities, however, persisted after controlling for demographic characteristics and known risk factors.

The fact that the magnitude of racial and ethnic disparities in disaster mental health outcomes attenuate after controlling for other socioeconomic risk factors underscores the fact that the causes of these disparities are more structural, as opposed to cultural, in nature. Nevertheless, knowing that many risk factors for adverse mental health outcomes are disproportionately prevalent in minority communities, post-disaster mental health outreach services should be culturally competent to account for the diversity of those most in need. After the September 11th terrorist attacks, African Americans with PTSD or depression utilized mental health services and medications at a rate significantly lower than that of Whites.[81]  Issues related to stigma, culturally-specific help seeking behaviors, and lack of culturally-appropriate treatment options all could have contributed to such disparities and impeded recovery.[82]

Some mental health professionals, however, have argued that the provision of culturally appropriate mental health services is only an ameliorative strategy.[83]  Such perspectives hold that mental health

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78.    *See* Adams & Boscarino, *supra* note 10 and accompanying text.

79.    *Id.*

80.    *Id.*

81.    *See* Joseph A. Boscarino et al., *Disparities in Mental Health Treatment Following the World Trade Center Disaster: Implications for Mental Health Care and Health Services Research*, 18 J. TRAUMA & STRESS 287, 291 (2005).

82.    *See generally* ROBERT T. CARTER, CONN. DEPT. OF MENTAL HEALTH AND ADDICTION, DISASTER RESPONSE TO COMMUNITIES OF COLOR: CULTURAL RESPONSIVE INTERVENTION (2004) (discussing recommendations for culturally competent mental health response services after a disaster); *see also* Anthony J. Marsella & Michael A. Christopher, *Ethnocultural Consideration in Disaster: An Overview of Research, Issues, and Directions*, 27 PSYCHIATRY CLINIC N. AM. 521 (2004) (discussing issues in cross-cultural psychology and recommendations for culturally competent disaster mental health services).

83.    *See* Elizabeth M. Vera & Suzette L. Speight*, Multicultural Competence, Social Justice, and Counseling Psychology:  Expanding Our Roles*, 31 COUNS. PSYCHOL. 253 (2003) (calling on counseling psychologists to promote social justice and move beyond

professionals concerned with minority health should engage in advocacy activities to foster social change which addresses the structural forces that place racial and ethnic minority groups at increased risk for poor mental health outcomes. Indeed, these mental health professional are looking through a lens of social justice.

## IV. Conclusion: Examining the Evidence through a Lens of Social Justice

### A. Disaster Research and the Circumstances of Social Justice

In *Principles of Social Justice*, David Miller outlines "circumstances of social justice" which need to be met for theories of social justice to be applied in a pragmatic way that can inform public policy and invoke meaningful change.[84] Among these circumstances is a need for an "identifiable set of institutions whose impact on the life chances of individuals can be traced."[85] That is to say, we must understand the processes through which social injustice is produced and be able to "predict the result of changing an institution" in order to realize what social justice demands. Also needed is an entity capable of changing these institutions as social justice demands—typically federal, state, or local government through legislation and policy.

If we are to consider psychological resilience after disasters to be a "good" for which the fair distribution is a concern of social justice, we must possess a better understanding of the mechanisms and economic, social, and political arrangements which produce post-disaster psychological resilience. A sufficient understanding of these processes is currently lacking.

Disaster research, with a focus on physical health outcomes, has been successful in identifying the processes through which racial and ethnic disparities disaster outcomes are produced. As described, structural inequal-

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Multicultural Competencies that were developed to guide practice in the field); *see also* Joshua M. Bradley et al., *Social Justice Advocacy in Rural Communities: Practical Issues and Implications*, 40 COUNS. PSYCHOL. 363 (2010) (discussing practical strategies for counseling psychologists to engage in social justice advocacy activities in rural areas); Janet E. Helms, *A Pragmatic View of Social Justice*, 31 COUNS. PSYCHOL. 305 (2003) (in response to Vera & Speight raising concerns regarding the feasibility of their recommendations and the scope of counseling psychology).

84. *See* MILLER, *supra* note 1 and accompanying text.

85. *Id.*

ities relating to housing, income, education, and political power become manifest in sites and situations that disproportionately increase disaster risk. A general understanding of these processes has allowed for empirically-grounded policy recommendations to be generated in the name of public health and social justice.[86]

Disaster mental health researchers have been successful in identifying individual-level characteristics that predict psychological resilience after disasters or lack thereof—such as an experience of previous trauma, income, level of educational attainment, and social support. The macro-level forces that shape the distribution of these individual-level characteristics across racial and ethnic groups, however, have remained less explored, or at least not integrated into discourses of disaster mental health research. Those concerned with post-disaster mental health should engage in interdisciplinary research and integrate the best science available to better understand how social inequalities might become manifest in adverse mental health outcomes after disasters, highlighting the moral urgency for action. It is also of critical importance that characteristics of race and ethnicity do not become disembodied from the broader social forces that give them meaning.

## B. Might Methodological Conventions Mask Social Injustice?

The practice of statistically controlling for confounding variables is essential to identifying the causal mechanisms that underlie disaster-related psychopathology, but risks divorcing characteristics of race and ethnicity from the broader social contexts they are associated with. Statistical control, or "stratification and adjustment," can help elucidate the role that race and ethnicity play in the development of psychopathology following disasters, independent of confounding variables—such as low income, low education, and disaster exposure—that are associated with both race and ethnicity and post-disaster mental health outcomes.

The fact that these risk factors are associated with minority status, however, is a concern of social justice in its own right. By creating a counterfactual scenario which estimates how racial and ethnic minority groups *would* have fared if all had equal levels of income, education, and disaster exposure, statistical control can mask the fact that these factors are in fact far from equal and that disaster consequences have not been fairly

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86.   *See generally* DeBruin, *supra* note 7 and accompanying text; *see also* BARRY S. LEVY & VICTOR W. SIDEL, SOCIAL INJUSTICE AND PUBLIC HEALTH (2006).

distributed across all members of a society. In doing so, the practice of statistical control may give the false perception that social justice has been met.

Race and ethnicity are constructs of social, not biological, significance.[87] There is no biologically plausible, or "organic," reason why racial or ethnic minority groups would be at greater risk for adverse mental health outcomes after disasters. While this may be tacitly understood by the research community, and questions of the causes of structural inequality might be beyond the scope of many research endeavors, researchers who collect information on, statistically control for, and discuss racial and ethnic disparities in disaster outcomes should explicitly acknowledge that the causes of any disparities observed are structural in nature. Researchers and journal editors should also consistently present unadjusted statistics on disaster outcomes by race and ethnicity, as well as other socio-economic characteristics, in addition to adjusted statistics. This will allow consumers of research to make more informed conclusions regarding whether or not social justice has been met after a disaster.

## C. Why a Social Justice Perspective Matters

Powers and Faden present a theory of social justice that is useful in conceptualizing why disparities in mental health outcomes after disasters are a matter of social justice, and how conceptualizing the issue as such can inform policy decisions.[88] Powers and Faden propose that social justice is achieved when social conditions allow for all members of a society to maintain a "sufficient" level of well-being across at least six essential dimensions: health (physical and mental), personal security, reasoning, respect, attachment, and self-determination. To ask what social justice requires, their theory explores the social determinants of these dimensions of well-being. They recognize that single, or overlapping, social determinants have profound effects on single, or multiple, dimensions of well-being. By identifying the cascading and compounding consequences of specific social determinants across multiple dimensions of well-being, one can prioritize the aspects of social structure which are in most urgent need of change to achieve social justice.

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87. *See* Cooper, *supra* note 4 and accompanying text.
88. *See* POWERS & FADEN, *supra* note 11 and accompanying text.

Building on what is known about the individual-level determinants of post-disaster mental health (e.g., extent of disaster exposure, income, education, social support, prior trauma, chronic stress), we can speculate upon the social determinants of mental well-being after disasters and racial and ethnic disparities therein, and thus identify areas for intervention to achieve social justice. As an example, consider education as a social determinant for the dimension of mental well-being.

Racial and ethnic disparities in education are well-documented and have origins in discriminatory policies.[89] Low-education is a determinant of disaster mental health risk independent of other factors, but is also strongly associated with income.[90] A lack of income may increase disaster exposure by creating communities in hazardous, and thus inexpensive, areas and also increase mental health vulnerability by serving as a chronic stressor.[91] Low-education may also decrease employment opportunities, causing some to seek self-sufficiency in the illicit economy. This may lead to community violence, as illicit business disputes cannot be settled in courts of law, contributing to chronic stress and increasing the prevalence of pre-disaster traumatic exposures in low-income minority communities.[92] Involvement in the illicit economy may also lead to disproportionately high rates of incarceration, adversely affecting social support and political power as convicted felons lose voting rights.[93]

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89.    SEE GARY ORFIELD & CHUNGMEI LEE, THE CIVIL RIGHTS PROJECT, HARVARD UNIVERSITY, WHY SEGREGATION MATTERS:  POVERTY AND EDUCATIONAL INEQUALITY, *available at* http://bsdweb.bsdvt.org/district/EquityExcellence/Research/WhySegregMatters .pdf (discussing the magnitude of racial disparities in education and their historical and contemporary causes).

90.    Sastr & Van Landingham, *supra* note 70 and accompanying text.

91.    *See* Cutter, *supra* note 43 and accompanying text; *see also* Fothergill & Peek, *supra* note 44 (discussing the role of poverty in shaping geographic risk).

92.    *See* Jeffrey A. Miron & Jeffrey Zwiebel, *The Economic Case Against Drug Prohibition*, 9 J. OF ECON. PERSP. 175, 177 (1995) (discussing the role of the illicit economy in interpersonal violence); Naomi Breslau et al., *Trauma and Posttraumatic Stress Disorder in the Community:  The 1996 Detroit Area Survey of Trauma*, 55 ARCH. GEN. PSYCHIATRY 626 (1998) (finding that nonwhites had significantly higher rates of violent victimization than Whites in an urban sample and that rates of PTSD were nearly twice as high (14.3% versus 7.3%) before controlling for other factors)*; see also* Naomi Breslau et al., *Previous Exposure to Trauma and PTSD Effects of Subsequent Trauma:  Results from the Detroit Area Survey of Trauma.* 156 AM. J. PSYCHIATRY 902 (1999) (finding that being a victim of assaultive violence substantially increased the risk of PTSD from subsequent traumatic exposures).

93.    *See* Christopher Uggen & Jeff Manza, *Democratic Contraction? Political Consequences of Felon Disenfranchisement in the United States*, 67 AM. SOC. REV. 777 (2002) (discussing the implications of felon disenfranchisement policies on election

This scenario is hypothetical, but empirically grounded and illustrative of how a single social determinant impacts other social determinants and multiple dimensions of well-being that increase risk for adverse mental health outcomes after disasters. Structural inequalities (e.g., disparities in quality education) which inhibit individuals from maintaining a sufficient level of well-being in any essential dimension (e.g., mental health) are violations of social justice in their own right, but also likely to have cascading, trickle down consequences that become palpable after disasters. Tragic as they are, disasters are capable of exposing the latent consequences of social injustices and providing a unique opportunity to advocate for social change.

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outcomes).