

Disaster Planning and Risk Communication With Vulnerable Communities: Lessons From Hurricane Katrina

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The aftermath of Hurricane Katrina demonstrated that a large portion of American society lives without the social and economic resources necessary to protect themselves and their families during disasters. More than 100 000 residents of greater New Orleans, many of whom were poor and African American,¹ did not evacuate before Katrina's land-fall.² Research findings on the association between race/ethnicity and evacuation decisions are consistent with the pattern seen with Katrina: minority communities are less likely to evacuate and are more affected by disasters.³⁻⁶ The vulnerability of these communities appears to be mainly because of economic status and resources; however, "cultural ignorance, ethnic insensitivity, racial isolation and racial bias" potentially also contribute by leading to lower levels of preparedness, fewer resources for evacuation, and disparities in access to relief and recovery.^{4(p169)}

Evacuation research generally compares populations who do and do not evacuate,⁷⁻¹⁰ so the few studies that address racial/ethnic variations describe disparities between broad majority and minority groups, leaving much about the crucial factors operating within minority groups unknown.^{11,12} In-depth investigations of evacuation decisions are needed to understand why impoverished, urban, minority communities may be less likely to evacuate. A survey done by Brodie et al¹³ of the predominantly poor and African American persons residing in Houston's shelters after Hurricane Katrina highlights some of the challenges faced in evacuating vulnerable minority communities; the most commonly endorsed responses for not evacuating were lack of transportation and misjudging the storm's danger. Still, social psychological theory predicts that decisionmaking is complex, multifactorial, and socially embedded.¹⁴ Results of studies, such as that by Brodie et al,¹³ invite further questions about the complex interrelationships of the reasons offered in the

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. (*Am J Public Health.* 2007;97: S109-S115. doi:10.2105/AJPH.2005.084335)

survey for not evacuating and potentially others (e.g., family refused to evacuate, inability to leave work, and credibility of evacuation recommendations) that were not included in the survey.¹²

Qualitative research can add to the depth of our understanding by providing a detailed accounting of the cultural context, social environment, and individual cognitions that led to people's decisions and abilities to evacuate before Hurricane Katrina. We interviewed evacuees from Hurricane Katrina to better understand, from their perspective, the complex set of factors that influenced evacuation behaviors. Understanding these experiences could inform disaster plans for impoverished, minority, communities in the United States.

METHODS

Qualitative interviews were conducted with persons living in Houston's 3 major evacuation centers: the Reliant Center, Reliant Astrodome, and George Brown Convention Center. Eligibility criteria included being aged 18 years or older and residing in Louisiana before Hurricane Katrina. Recruitment and

interviewing were conducted September 9 to 12, 2005 (Table 1). On September 9, 8623 persons were residing in these shelters.¹⁵

Study participants were randomly selected from inside and outside the centers from 9:00 AM to 9:00 PM. Inside each shelter, rows of residents' cots were counted as were the cots in the row. Row and cot number were selected from random-numbers tables, and the selected cot was approached. Outside, line sampling was performed from lines of people sitting against the shelters for shade. Random numbers were used to select potential participants counting down the line. In both cases, children were excluded from the counting. The sampling method was repeated whether the person who was approached accepted or declined to be interviewed.

Participation was voluntary and anonymous, and all of the participants provided verbal informed consent. Interviews were conducted in the most private setting available, and no incentives were offered.

With the exception of the demographic components (Table 2), all of the interviews were conducted in a semistructured format. The interviewer asked participants to describe

TABLE 1—Timeline of Events Associated With Hurricane Katrina, 2005

Date	Event
Wednesday, August 24	Storm in Bahamas upgraded to Tropical Storm Katrina
Thursday, August 25	Federal Emergency Management Agency National Coordination Center activated; Katrina upgraded to category 1 hurricane, passes through Florida into Gulf
Friday, August 26	Governor of Louisiana declares state of emergency; National Hurricane Center forecasts Katrina will strike east of New Orleans
Saturday, August 27	5:00 AM Katrina upgraded to Category 3
	9:00 AM Mandatory evacuation orders in St Charles and Plaquemines Parishes and coastal areas of Jefferson Parish; voluntary evacuation in St Tammany, St Bernard, New Orleans Parish, and noncoastal areas of Jefferson Parish
Sunday, August 28	President Bush declares federal state of emergency in Louisiana
	12:40 AM Hurricane Katrina upgraded to category 4
	7:00 AM Hurricane Katrina upgraded to category 5
Monday, August 29	10:00 AM Mandatory evacuation of New Orleans ordered; New Orleans Superdome named as shelter of “last resort for evacuees with special needs”
	6:10 AM Hurricane Katrina makes landfall just east of New Orleans
Tuesday, August 31	Lower Ninth Ward and St. Bernard parishes under 6–10 feet of water
	2:00 PM Officials confirm breach of 17th Street Canal; 2 other levees also breached
Tuesday, August 31	Governor of Louisiana orders evacuation of all of New Orleans, including 23 000 people estimated to be at New Orleans Superdome; agreement made to use Houston’s Reliant Astrodome as shelter
Wednesday, September 1	5 000 evacuees arrive in Reliant Astrodome; additional 10 000 people come to New Orleans Superdome seeking evacuation
Thursday, September 2	Houston’s 3 other major shelters begin accepting evacuees (Reliant Center, Reliant Arena, and George R. Brown Convention Center)
Friday, September 3	Evacuation of New Orleans Superdome and Convention Center completed with a total of 42 000 evacuees
Saturday, September 4	At their peak census, the 4 major Houston shelters house 27 100 evacuees.

Source. Information taken from a variety of sources and timelines (including *The New York Times*, *Times-Picayune*, *Houston Chronicle*, Federal Emergency Management Agency, Cable News Network, CBS News, Harris County Joint Information Center, and the Brookings Institution).

TABLE 2—Summary of Participant Characteristics (N = 58): Houston, Tex, September 9–12, 2005

Variable	N	%
Residence		
New Orleans	55	95
Outskirts of New Orleans	3	5
Interview site		
Reliant Center/Astrodome	40	69
Brown Center	11	19
Outside centers	7	12
Race		
African American	47	81
White	6	10
Latino	3	5
Asian-Pacific Islander/Other	2	3
Gender		
Female	28	48
Male	30	52
Age, y		
18–24	4	7
25–34	5	9
35–44	10	17
45–54	17	29
55–64	10	17
65–74	8	14
≥ 75	3	5
Missing	1	2
Income, US \$		
<20 000	29	50
20 000–29 999	18	31
30 000–39 999	5	9
40 000–49 999	1	2
≥ 50 000	3	5
Refused	2	3
Marital status		
Married	16	28
Separated	5	9
Divorced	7	12
Widowed	6	10
Never Married	24	41
Education, highest degree		
None, less than high school	26	45
High school diploma or General Educational Development	23	40
AA or associates degree, 2-y degree	6	10
BA or BS, 4-y degree	2	3
Missing or refused	1	2

Continued

the following: (1) sources and understanding of information in the time period before the hurricane; (2) knowledge, perceptions, and resources that influenced their evacuation behavior before the hurricane’s landfall; and (3) reflections on factors that would have altered their behavior. Interviews were recorded and professionally transcribed.

We performed a content analysis to identify core consistencies and patterns in the interviews that we called themes. We used a grounded theory approach,¹⁶ which emphasizes discovering themes that emerge from the data, while recognizing that themes may also come from preconceived frameworks. First, we read through all of the transcripts and, in team discussions, identified themes

and their subthemes that emerged from the texts.^{17,18} Identifying themes was completed when no new subthemes, properties, dimensions, or relationships within or among them came out during discussions.¹⁹ Second, each transcript was reviewed by the investigators who independently categorized, sorted, and labeled participants’ statements within themes and subthemes, a process known as coding. Third, the “coders” met, and differences in coding were resolved by consensus agreement.²⁰ Initial agreement was 85% requiring 15% of codes to be settled by consensus. Final coded transcripts were managed using Atlas.ti software version 5.0 (Atlas.ti Scientific Software Development GmbH, Berlin, Germany). We report the most salient

TABLE 2—Continued

Employment		
Full time	23	40
Part time	5	9
Unemployed/laid off	3	5
Disabled/not working	10	17
Retired/not working	13	22
Other/not working	4	7
Automobile access and ownership		
No access	32	55
Yes access	26	45

themes and subthemes we found. The selected quotations exemplify the core topics, problems, and concerns that were the bases for the themes and subthemes.

RESULTS

Fifty-eight (77%) of 75 persons approached agreed to participate. Most participants were African American, reported low income, and came from New Orleans (Table 2). Four participants reported they had evacuated before the storm.

A total of 1182 statements were identified and coded into themes and subthemes (see the box on this page). The themes were as follows: (1) instrumental, defined as the resources needed for and practical concerns related to evacuation; (2) cognitive, defined as the cognitive components of how evacuation messages were received, processed, and understood; and (3) sociocultural, defined as beliefs, attitudes, and perceptions of the nature of disasters or the underlying community structure or politics, including discrimination.

Instrumental

Shelter. Participants did not recall specific destinations outside New Orleans prescribed in the evacuation orders. Said 1 participant, “There was nothing about where we was supposed to go at.” Participants described extended family outside New Orleans who offered them shelter before the hurricane, although they did not evacuate for other reasons. One person did evacuate before the hurricane “because my daughter’s mother-in-law lives in Appaloosa, Louisiana, and every time we hear something going on out in the Gulf . . .

Representative Statements From Identified Themes and Subthemes

Instrumental Reasons

Shelter (N=73)

- “They said go to Texas but I didn’t know anybody in Texas.”
- “Really truly, we had cars, but we didn’t know anybody to go to.”
- “People think when you run to the projects you’re more safer there than here, so that’s what basically we did.”

Transportation (N=112)

- “I mean, if you’ve got 20 people trying to get in 1 car it’s not going to happen. So some people, you just stay because you have to.”
- “They would have had to send buses like close up to the door so they get [the elderly] out, because some people ain’t going to go out, you know, walking.”

Money, property, jobs (N=109)

- “They were already robbing. And my dad, he had to stay behind because we had a lot of tools and belongings there.”

Health (N=29)

- “I no healthy to drive too far.”
- “I take so much medication by that time I was like groggy.”

Social networks (N=106)

- “The older people are really hard to leave because they’ve been through [Hurricanes] Betsy and Camille. So it’s very hard for you to get older people to leave.”
- “Like my mom said, she’s been through Betsy, Camille, all the hurricanes, the major hurricanes and she just wasn’t evacuating. So I wasn’t going to leave my mom to stay there by herself.”
- “I had a 90-year-old mother that I was taking care of and she would not leave that house for hell or high water.”
- “I could have made it on my own, but it was just my aunt and my uncle. Every few steps he made . . . she forgot his walker . . . every few steps he made he was falling down.”

Cognitive reasons

Sources, timing, and understanding of messages (N=286)

- “Some was telling us that we should evacuate . . . and some of them was telling us to stand by.”
- “They said we don’t know what’s going to happen, but there’s slight chance everybody should leave New Orleans.”
- “All we heard was what was broadcast on television telling everybody that if they have somewhere to go, get out as soon as possible.”
- “In order for them to make a mandatory evacuation, it had to be a bad, very bad storm coming our way.”

Risk perception (N=188)

- “And, well, we didn’t take it seriously. Because we thought it was going to be another Betsy. You know, with a little water coming in the house.”
- “The last storm we had there, it was more people got hurt on the highway traveling away from the storm, running out of gas, accidents, than it would have been if they stayed home.”
- “The water started to rise due to that breach in the levee system. That’s what caused that water, not the hurricane.”

Sociocultural reasons (N=102)

- “The mayor, the governor of New Orleans, that run the city of New Orleans they let the waters go in the poor neighborhoods and kept it out of the rich neighborhoods like that French Quarter where tourists goes at.”
- “It was from them opening flood gates, telling lies about the levee breaking and stuff . . . I believe they do these things intentionally . . . so they can flood out those black neighborhoods.”

N=Number of coded statements.

it's like an open invitation." Others noted that the absence of friends and family outside New Orleans hindered evacuation (see the box on the previous page). Persons who did not evacuate often thought that they would be safer if they moved to "sturdier" dwellings in New Orleans such as hospitals, hotels, high-rise apartments, and public housing buildings.

Transportation. Transportation was an obstacle for participants who did not have a functioning car, could not find a rental car, or had no insurance, license, or gas. Even if participants owned a car, 1 car for the entire family may not have been enough; other family members had already evacuated with it or the family was too large for a single car (see the box on the previous page). Persons who wanted to evacuate by bus did not know where to board them, reported no buses in their neighborhoods, or had elderly in their homes who could not walk to them (see the box on the previous page).

Money, Property, and Jobs. Concerns about money, property, or jobs impeded evacuation in several ways. First, disposable income was an obstacle, because, as 1 single mother reported, "You have to be able to feed your children when you leave. You have to be able to have a place to stay, you have to have gas money, you have to have rental car money. I couldn't afford to do that. You need at least \$500/\$600, and that's the least amount of money."

Second, participants reported obstacles to leaving imposed by their employers. Three participants reported not evacuating for fear of losing their jobs. One reported a conversation with his employer who said, "If you don't come around then, you know, I'll just see you when I see you. . . . That means when I see you you're going to be fired." Another woman, discussing her clients from a home for persons with HIV/AIDS said, "We had 5 of them placed, 2 of them were not placed, so that means when we had to evacuate . . . I had to take them with me." Last, personal experience of looters or a fear of looters influenced evacuation decisions (see the box on the previous page).

Health. The health of participants or members of extended family members influenced evacuation (see the box on the previous page). For 1 person, it was fear of being far from their usual providers, "because I'm a diabetic and I have to be close by to get to

doctors and hospital—I can't just go anywhere." Health problems (fatigue and somnolence) hindered 2 participants from driving themselves, although they owned their own cars (see the box on the previous page).

Social Network. A total of 106 statements focused on the importance of social networks (the web of relationships that surround individuals) as obstacles or facilitators to evacuation. Statements about social networks that overlapped with statements about transportation, shelter, and health described how family, friends, and neighbors influenced decisionmaking and the ability to evacuate. Previous experiences of elderly family members affected decisions to evacuate (see the box on the previous page). Obligations to the elderly also influenced household's evacuation attempts. One participant said, "My plans were to leave. Unfortunately we received a call and we had to come back home. My mother-in-law had called for us to come back. . . . You know when they get a certain age they get confused."

Participants described an individual's evacuation decision initiating a chain reaction that impacted an entire family: "My mother-in-law wouldn't leave the house. My husband wouldn't leave her and I'm not going to leave him."

Alternatively, the extended family was a resource that encouraged the decision and capacity to evacuate: "I started making phone calls to my children warning them to get out. And after that, my sister, she had called me. So I went to pick her and her children up, and grandchildren, and we just started driving, heading toward Florida."

Cognitive

Sources, Timing, and Understanding of Messages. Participants' initial sources of information about the hurricane were television or family and friends. Participants reported understanding televised warnings about the hurricane but evacuation messages were recalled as nonspecific or ambiguous, for instance, messages to "go somewhere" but not where and how to evacuate (see the box on the previous page).

Participants focused on 2 terms used in messages: "category 5" and "mandatory" evacuation. The term "category 5" impressed people with the storm's severity, the threat it posed, and the need to evacuate. Said 1

participant, "Oh, I knew I would die because they said, category 5, category 5, and I knew it was the end." The term "mandatory" increased the perceived severity of the storm (see the box on the previous page), and participants distinguished between responding to a "mandatory" versus "voluntary" evacuation: "They wasn't saying it was mandatory; they was saying if you can leave, please leave. They didn't say it was mandatory because if they would have I would have left."

Participants integrated media messages with the communications of friends, family, neighbors, and church members in deciding whether or not to evacuate. Emotional appeals from contacts and seeing that "everybody was in line at the store" swayed persons from ambivalence to evacuation. A participant received direct appeals from a social services worker that changed her mind: "So our clinical manager called back. She says, 'Stella, the Lord said get out of that house.' I said, 'We're on our way out now if you would hang up.'"

Risk Perception. Participants who did not evacuate thought that their own vulnerability would be low based on previous experience (see the box on the previous page). Vulnerability would be minimal because, "I know it's a flooding city but the street I live on does not flood," or because, "I was on the second floor," or because, "the project was the safest place to be." Participants reported mistrusting warnings as "trying to scare us." Stated 1 person, "They do this every year when its time for a hurricane." Finally, participants saw evacuation as riskier than staying home because of the dangers of driving on the highway (see the box on the previous page).

Sociocultural. Collective memory of past hurricanes led participants to believe that they rarely bring damage, dangerous flooding, or personal risk: "I mean, ain't nothing exciting about no hurricane. But, you know, living in New Orleans . . . you're under the threat of it. So it's been gusting, but that's where you stay."

Furthermore, distrust of authorities fueled their belief that the flooding was not because of the hurricane. Participants thought that the levees had been "blown" to save wealthy neighborhoods and businesses at the expense of poor, black neighborhoods. Said 1 participant, "They knew they had to sacrifice somebody, and they all came together and decided

what they were going to do. And the Ninth Ward is all the crack dens and the lower incomes, the poorest of the poor, the helpless, the criminal element.”

DISCUSSION

Participants described factors influencing evacuation decisions that were complex, interacted with one another, and most importantly, were influenced by extended family and other members of participants' social networks, either facilitating or inhibiting evacuation. Statements regarding social networks were the most common theme spontaneously mentioned and influenced the outcomes of other themes, such as transportation, shelter, and health. Although advice from others or responsibility for others (usually children) led several participants to evacuate, friends and relatives just as often were obstacles to evacuation. Participants who took responsibility for elderly or frail family members or sheltered extended family members in their homes were subsequently unable to evacuate. Family members who evacuated early using the family's automobile stranded others without transportation.

Previous studies describing the importance of family in the decision to evacuate have focused on households^{21,22} with less attention to the extended family, which is often more cohesive in minority communities.²³ An accepted finding of disaster research is that people tend to evacuate as family units.^{22,24} Research with Mexican Americans found that accounting for extended family members delayed responses to disaster warnings.⁵ Similarly, elderly persons may be less likely to evacuate,¹⁰ and their presence in a household may complicate family evacuation.²² Our study not only confirms the importance of these findings in the largest natural disaster in the United States in a century but also may provide clues to the mechanisms behind them. We found that broad networks of families and friends created demands on participants and more inertia to evacuation among the household and group. These demands stretched limited resources, such as transportation, hindering the household's and group's ability to evacuate. Obligations to the extended family, especially the elderly, who resisted evacuation, inhibited many

individuals and nuclear families from evacuating. Decisionmaking occurred among groups larger than the nuclear family, and group decisionmaking, with its inherent inefficiencies, sometimes overwhelmed decisionmaking of individuals.^{25,26} In only a few participants did the balance among the willingness to evacuate, resources for evacuation, and the needs of the extended family members favor evacuation, although extended families provided other vital functions, such as assistance during the storm and the flood afterward.

Although transportation and financial factors alone did prevent some from evacuating, more important was the confluence of these obstacles to evacuation. For example, although almost 45% of the sample reported that they owned or had access to a car, many still did not have money for gas, hotels, or food, which, as estimated by 1 participant, could cost 2 weeks' pay. Participants who did not have family outside of New Orleans often lacked specific evacuation destinations and said that messages did not provide specific destinations. Moreover, although most study participants did not initially evacuate New Orleans, many participants did leave their homes for other's homes or places of employment because they perceived them as safer than their own houses. Fears that one would lose their job, additional responsibilities imposed by employers, and protecting property from looting, especially if it meant losing the tools of one's trade, kept others from evacuating.

The terms “category 5” and “mandatory” evacuation strongly resonated with participants. This is consistent with a previous study that found that the difference between a category 3 and category 4 hurricane is the boundary at which people feel at risk.²⁷ This also highlights the value of education on common disaster terms, such as hurricane categories 1 to 5 (Saffir–Simpson Hurricane Categories), as an important aspect of disaster policy. Education provided by emergency planners can increase citizens' knowledge about hazard risks,²⁸ and people are more likely to evacuate if they perceive enough risk to themselves and loved ones.^{3,10,22}

For other participants, however, the collective memory of past hurricanes combined with distrust of authorities led to the minimization of their perceived risk associated

with Hurricane Katrina. Initially, this underestimation of the danger was weighed against fears of getting “stuck” on the highway, also derived from collective memory. Studies show that trusting information received from inside one's social network rather than the information received from outside one's network (e.g., media and authority figures) is characteristic of networks composed of strong family ties.²⁹ These networks are better suited for social support than for exchanging new information.²⁹ During times of stress, networks composed of intense ties, such as extended families, may be less adaptive, because they are less likely to exchange new information.³⁰ In such cases, disaster planners partnering with organizations that are part of these networks, such as churches in the African American community, may better communicate new information to individuals and families who value information received from inside their network.^{31,32}

Limitations

There are limitations to our study. Social response bias or cognitive dissonance may have influenced recall of evacuation decisions. Also, the target population (persons living in the 3 Houston evacuation centers) was intended to represent the most vulnerable participants who did not evacuate before Hurricane Katrina and needed evacuation and housing assistance. Participants were, therefore, not selected from hotels and private residences where evacuees were living, and so may not generalize to other, possibly less-disadvantaged, evacuees. The peculiarities of the large-scale evacuation from impoverished sections of New Orleans provided a skewed population for study, which was further compounded by the rapidly changing occupancy of the shelters. We attempted to reduce bias in sample selection strategy, but the study sample remains a convenience sample with respect to those who may have been evacuated to these 3 shelters and who remained in the shelters on September 9 to 12, 2005. As a result, our sample was older, poorer, less well educated, and disproportionately African American compared with New Orleans residents before Hurricane Katrina.³³ Also, without demographic data on the overall population in

the 3 centers, we are unable to determine whether our sample was representative of the target population living there. Our randomly selected sample is comparable in gender, income, and marital status to another sample randomly selected for a survey that ran concurrently in the shelters.¹³ The qualitative nature of our investigation is best suited to range finding and evaluating interactions between factors associated with evacuation decisions. Without a quantitative approach, it is difficult to determine the prevalence of the factors that we identified.

Disaster programs, policies, and research can address the obstacles that we identified. For example, emergency food and gas vouchers that are activated when an evacuation is announced could be provided to eligible families. National and state legislation that provides job protection for those who evacuate could be modeled after laws such as the Uniformed Services Employment and Reemployment Rights Act of 1994, which provides reemployment protection for active duty military personnel. Education programs are needed to address the misperceptions that persist, for instance, that evacuating to a home that is sturdier but still in the storm's path increases one's safety. Public education campaigns are needed to educate the public about the level of protection provided by a "sturdy" house against a severe hurricane and the need to travel away from the storm.

Moreover, disaster programs and research should focus on social units (households, extended families, and neighborhoods) and the organizations and groups they interact with, such as churches, social clubs, schools, and labor unions.³¹ For instance, churches could be central to disaster planning and communications in African American communities, because they provide important links to families³¹ and have a history of successful involvement in social projects and health promotion.^{34–36} They could be used to sway individuals and families whose norms, risk perceptions, and decisionmaking are highly influenced by their social networks and to provide access to resources. Church groups might organize phone trees to promote evacuations and organize evacuation planning for the elderly.³⁷ They could participate in devising and pretesting communications developed

along risk communication principles,^{38,39} which emphasize that effective crisis messages are consistent, timely, actionable, and empathic to the manifold and complex situations in which families may find themselves.^{40–42} Studies demonstrate that the clearer and more specific the disaster warning messages are, for instance, providing simple evacuation instructions and directions to specific destinations, the more likely the public will respond to them.^{43,44}

Conclusions

As we seek lessons from the evacuation of Hurricane Katrina, it is important that communications and disaster plans account for the specific obstacles encountered by urban, minority communities. Our work provides an opportunity to listen to the voices of the evacuees themselves. These voices lead us to believe that removing the obstacles of shelter and transportation will be insufficient to ensure safety in future disasters. Policies must additionally address the important influence of extended families and social networks through better community-based communication and preparation strategies. ■

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Contributors

D.P. Eisenman designed and directed the study and led its implementation, data collection, data analysis, interpretation, and the writing and editing of the article. K.M. Cordasco worked with D.P. Eisenman to implement the study and collected and analyzed data. S. Asch co-designed the study and advised D.P. Eisenman. J.F. Golden analyzed data. D. Glik advised the team on data analysis and performed data analysis. All of the authors helped to conceptualize ideas, interpret findings, and write and review drafts of the article.

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Human Participant Protection

The study was approved by the Human Subjects Protection Committee of the University of California, Los Angeles.

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