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Department of International Health and Development

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Abstract

Hurricane Katrina struck near New Orleans on August 29, 2005, and resulted in the collapse of the federal protective levee system and the flooding of most of the city. New Orleans East, where the main Vietnamese enclave is located, was especially hard hit. By chance, just weeks before this disaster occurred we collected with our colleagues a wide range of demographic and health data for a population-based sample of working age Vietnamese Americans living in New Orleans. One year after the storm, we re-interviewed everyone from the original sample who had returned to the area. This re-interview sample included about two-thirds of the original sample.

Those who had returned by the one year point were more likely than those yet-to-return to have been employed before the storm, to have worked in the skilled sector of the economy, to have been married, and to have been a home owner. Many problems experienced during the immediate aftermath of the storm, such as crowded and unsanitary conditions, had been resolved by the one-year anniversary. Other problems remain, such as a continuing lack of information, lack of access to medical care, and fears of violent crime.

Introduction

The fate of immigrants after a disaster is widely recognized as an important topic. Unfortunately, most previous research on this topic has by necessity generally relied upon anecdotal cases or non-representative data since population-based samples of these minorities are difficult to obtain. Even representative samples (for example, see Bocanegra *et al.* 2006) nearly always must rely upon measures taken after the event occurred, since disasters are unpredictable. By chance, we collected a wide range of pre-disaster health measures and predictors of health for a population-based sample of Vietnamese living in New Orleans just before Katrina struck in August 2005. This paper utilizes these unique data to pursue two central aims. First, we examine cofactors (both pre and post storm) associated with evacuation decisions, destinations of evacuation, and whether by the end of the first year after the disaster the evacuees have returned to New Orleans or not. Second, we examine the range of evacuation experiences faced by Vietnamese New Orleanians during the weeks after Hurricane Katrina flooded their enclave in New Orleans East.

Background

Vietnamese-Americans total approximately 1.2 million (U.S. Census Bureau 2002), among whom approximately 12,000 lived in New Orleans area pre-Katrina (U.S. Census Bureau 2000). Vietnamese New Orleanians fled from South Vietnam after the collapse of their government in April 1975. For many in this community, the move to America was their family's second major displacement, since most Catholics fled North Vietnam for the South after partition in 1954. The levee failures occurring just after Hurricane Katrina's landfall flooded a major Vietnamese enclave in eastern New Orleans, resulting in the third evacuation and dislocation of everyone living in this main Vietnamese enclave away from their homes for weeks at the minimum; at the two year anniversary of the storm, a significant proportion of this community has still yet to return.

Dialogues and debates about why some heeded the pre-storm warnings while others did not; and about the rights and propensities to return among New Orleans former residents are heavy on rhetoric but light on data. Evacuation decision-making is examined with *post-hoc* explanations of decisions made under stressful circumstances. Analyses of who has returned and why face similar obstacles. Two years after the storm there are no reliable estimates for the *size* of New Orleans' population, much less the characteristics of those who have returned (versus those who have not). But some general population estimates for 2006, when the first follow-up wave of this survey was collected, are quite solid. The most professional and best-documented estimates and projections were conducted in 2006 by the Louisiana Recovery Authority (LRA 2006) and Rand (McCarthy *et al.* 2006). Taken together, this work implies an approximate population of 200,000 back in New Orleans by the fall of 2006, about a year after the storm, i.e., about 44% of the 455,000 in the city before the levee failures following Katrina forced the city-wide evacuation. The LRA estimates that the rates of return varied substantially by ethnic group, with the Asian population (most of whom are Vietnamese) at 69% its pre-Katrina levels by the fall of 2006. We get a very similar rate of return (65%) with our own data comparing Vietnamese whom we interviewed just before

Katrina in the summer of 2005 and those who had returned to their community by the time of our post-Katrina data collection during the fall of 2006.

Our pre-event data provide a rare opportunity to compare systematically using population-based data those in this Vietnamese enclave who evacuated before the storm arrived versus those who left the city afterwards; and those who have returned compared to those who have not. We make these comparisons using both pre-storm characteristics (such as health and economic well-being measured before the disaster) and post-Katrina-related characteristics (such as flood depth and the amount of damage their family incurred).

Special characteristics of immigrants in general and the Vietnamese in particular are likely to affect decision-making regarding evacuation and return. Level of English-speaking ability and degree of acculturation may both affect the degree to which individuals and families heed – or even fully understand - calls from authorities to evacuate. Such language issues may be especially relevant for the Vietnamese. According to the U.S. Census Bureau (2000), 93% of Vietnamese-Americans speak Vietnamese at home; 65% do not speak English very well; and 44% are classified as linguistically isolated. Massey and Denton (1992) using 1980 census data confirm the Vietnamese to be the most segregated among all Asian immigrant groups in the United States. Living in a homogenous ethnic neighborhood may also provide important social-psychological support (Zhou and Bankston 1998), but sudden displacement from that neighborhood, with its cultural symbols and settled interpersonal networks, may for that very reason suddenly remove critical sources of comfort and adjustment.

Key predictors of early return are likely to be similar for immigrants and non-immigrants alike. Levels of human and social capital respondents possessed before the disaster; and the degree of damage caused by the flood afterwards should be major factors determining who has returned versus who has not.

Data and Methods

Data

Our data are from the initial two waves of an on-going longitudinal study of health initiated during the summer of 2005 and continued during the fall of 2006 for Vietnamese immigrants living in the greater New Orleans area. Information collected includes detailed and standard assessments of physical and mental health outcomes. We also have detailed information on our respondents' evacuation experiences from Katrina, and more limited information regarding their prior evacuation from South Vietnam in 1975; and a wide range of demographic (including family structure), social (including standard acculturation and social network measures), and economic measures (including storm-related losses and pre-storm economic assets).

Our sample is representative of working age-Vietnamese living in the greater New Orleans area who were in 2005 between the ages of 25-49; were born in Vietnam; arrived in the U.S. between 1980 and 1990; and were also between the ages of 15-30 when they arrived. These original criteria, while quite restrictive, were chosen because the main objective of the original research was to examine the impact of international migration upon the health of Vietnamese immigrants who had lived substantial portions of their lives both in Vietnam and in the U.S.

We sampled households using a recently-updated (during May 2005) register of Vietnamese families that is maintained by the principal Catholic Church – the register includes households of all religions. Upon arrival at the household having an eligible respondent (the original registers had a list of residents, with their ages), the interviewer followed a procedure to first list and then randomly select an eligible respondent. The entire set of questions and measurements took about 60 – 90 minutes to complete. Our sample size for the original (summer 2005) wave is 128 interviews. We had 46 refusals, yielding a response rate of 73%.

We successfully located and re-interviewed 82 of our original 128 respondents from 2005 during August and September 2006. There were no refusals from the original cohort for the second wave of data collection, but many had not yet returned to New Orleans by the fall of 2005.

Variables

Within the context of this paper, we are interested in the following outcomes: whether members of this community evacuated before or after the disaster; where they evacuated to; what kinds of situations evacuees were living in; length of time members of this community were displaced; what distinguishes those who had returned by the one year anniversary of the disaster from those who had not; and future plans for remaining in their original community. We anticipate that the key predictors of the above outcomes will include pre-Katrina background factors, such as sex, household structure, marital status, home ownership, and occupation; length of time respondents had been living in New Orleans prior to the disaster; residence (inside or outside of the main Vietnamese enclave); English fluency; degree of acculturation into American society; and pPre-Katrina health status. Key post-Katrina predictors of early return include: changes in demographic, marital and social economic status; property losses due to the storms; key features of the evacuation experience; difficulties faced after the storm; and insurance payments (or difficulties).

Hypotheses

Demographic background factors are likely to predict both early evacuation and early return. Being female, married, and having co-resident young or elderly dependents are likely to predict early evacuation. On the other hand, the difficulties school-aged parents faced after Katrina implies that those with school-age children may be slower to return than those without. Anecdotally, some of our respondents note that it was their elderly parents who were most insistent on early return, and some were adamant that they did not wish to relocate once again so late in life.

Those who owned homes that flooded had much stronger pressures to return early (to repair them) than did renters. And those with skills highly sought after in the post-Katrina environment (e.g., electricians, plumbers, etc.) would find the elevated wages to be more of a draw for early return than would those with skills that were less valuable during the rebuilding year following the disaster. The Vietnamese-American community in New Orleans is tight-knit; this is especially true in New Orleans East, the original enclave for this community when they first came to America. This section of the city is quite homogeneous as a Vietnamese enclave; it is also known to be especially vulnerable to flooding. Thus, we anticipate that individuals (and their families) living in the main

enclave of *Village de L'est*, as the enclave is called, will be most likely to have evacuated prior to the storm.¹

Regarding future plans, longer length of time displaced may be related to less enthusiasm for remaining in New Orleans in the near to medium term (we asked about 2 years). On the other hand, those who had lived in New Orleans for a longer period pre-Katrina may find a move to a new destination less attractive than those who lived here for a shorter period.

Results

Table 1 describes the basic characteristics of the study population, both pre- and post Katrina. Those participating in both pre and post Katrina studies (n=82) have mean age of 44 years in 2006 and 43 years in 2005; the total sample in 2005 was slightly younger (average age 42 in 2005). Both pre and post Katrina samples have almost identical sex distributions: about two-thirds are male and one-third are female. There is a higher proportion of married people in post-Katrina sample (92%) than in pre-Katrina sample (84%). Conversely, there are more people who were never married in the total pre-Katrina sample (12.6%) compared to those we reached in the second round survey (6.2%). This suggests that single individuals are less likely to return by the one-year anniversary than ever-married individuals. Table 1 also indicates that the post-Katrina sample (the early returnees) have a higher education distribution than the total pre-Katrina sample; this suggests that those who were more educated were more likely to return by the one-year anniversary than those with lower education. We also see slight changes in the distribution of occupational categories – there are more labor workers and fewer professional/entrepreneur workers in the post-Katrina sample compared to the pre-Katrina sample. Labor workers include plumbers, electricians, construction workers, and people who worked in other manual, unskilled jobs, etc. Results in this table also suggest that the distribution of those who lived inside and outside the Vietnamese enclave do not differ between the pre and post Katrina samples (about four fifths lived inside and one-fifth lived outside the enclave). The distribution of length of time in the US also does not differ between the pre-Katrina and post-Katrina samples – the average is about 25 years for both.

Table 1 about here

Pre-Katrina health status was also similar for the two samples: nearly 60% of the sample reported very good or excellent health status. There were, however, some differences in the proportion of families with dependents under the age of 18 or over the age of 65. The percentages of respondents who had dependent children and elders after Katrina were both higher in the returned sample than in the pre-Katrina sample, confirming our hunch about families with elderly dependents being more likely to return, but suggesting that our hypothesis of respondents with young dependents being less likely to return is incorrect.

Table 2 describes the evacuation experiences of the Vietnamese immigrant evacuees during the first month post-Katrina. About 78% of the Vietnamese immigrants

¹ Those who lived in New Orleans East area, within the zip codes 70128 and 70129 are considered as living inside the Vietnamese enclave. Otherwise are categorized as living outside the Vietnamese enclave.

left their home before the hurricane hit. Of the 17 people who stayed behind until after the hurricane, 10 said that they did not believe the hurricane would be so bad; and 6 people said that their job - either their own business or their employers' - required them to stay; one mentioned s/he did not have any place to go. We also find (results not shown) that those who stayed behind were disproportionately more likely to be living outside of the flood-prone main Vietnamese enclave (presumably because they were less concerned about flooding; $p=0.03$); and professionals or business owners, presumably because they concerned about looting ($p=0.06$).

Almost half of the Vietnamese immigrants evacuated to and lived in Houston, Texas during the first month post-Katrina (46.9%). Another substantial proportion of immigrants (11.1 %) evacuated to other cities in Texas such as Dallas or Austin, making Texas the first destination for of the majority of the sample post-Katrina. Just over one fourth of immigrants evacuated to cities in Louisiana, and the remaining proportion (13.6%) evacuated to other states such as Georgia, Alabama and California.

Table 2 about here

While displaced, over half (51.2%) of those whom we interviewed in New Orleans post-Katrina stayed with their relatives. Another 29% stayed in hotels or motels, and about a fifth (20%) stayed in shelters. Among these 82 respondents we re-interviewed at the one-year anniversary (79 of whom had returned to New Orleans by that time), the length of time displaced shows a steady rate of return, beginning soon after the catastrophe. Just over a third returned during the first three months after the flooding; another third returned during the subsequent five months (4-8 months post-Katrina); and nearly all of the remaining 31% had returned right around the one year anniversary of the flood (9-15 months post-Katrina). The average length of time people were displaced is 5.5 months.

Table 3 summarizes the most common types of problems experienced by this evacuee population immediately after the levee failures and flooding in late August 2005. Almost three-quarters experienced at least some problems with crowding and unsanitary conditions during this first week; over 40% reported either "a lot" or "extreme" difficulties regarding this issue. Lack of information was also reported to be a problem by almost two-thirds of the sample, with a quarter in the "a lot" or "extreme" categories. Fear of crime and embarrassment were reported by over half of the sample, but crime fears were considered to be "extreme" more than twice as often as problems related to embarrassment and humiliation were. Family arguments were relatively common but apparently not terribly consequential; only about 4% reported this difficulty to be "extreme." Financial problems were reported by about half of the respondents, with a fifth reporting "a lot" or "extreme" financial hardship. Trouble in obtaining required medications were also common, affecting 40% of the respondents' families.

Table 3 about here

At the one-year anniversary of the storm (see Table 4), some of these initial hardships had been resolved while others had not. Only a fifth reported living in unsanitary conditions and only a quarter complained about over-crowded living conditions. No one complained about family arguments being an "extreme" problem, or that issues related to heating, water, or food were severe. Indeed, only a handful reported any problems at all in these categories. The three most common problems reported in this community were concerns about crime, difficulties in receiving medical care, and

problems with insects. Significant fears related to crime are widespread: 40% of the sample reported “a lot” or “extreme” degree of difficulty with respect to this problem. This is the most commonly reported significant problem at the one-year anniversary after problems with insects.² Complaints about lack of information (about a third complained about this) was the next most frequently reported problem, but we don’t have a lot of additional data regarding what kinds of information were perceived to be lacking.

Table 4 about here

We asked a wide range of questions to assess our respondents’ evaluation of the response of the government and other agencies to the disaster (see Table 5). One interesting feature of the distribution is how few rated the performance of these agencies to be either extremely good (“excellent”) or extremely poor (“very poor”). The “American public” and the American Red Cross came out with the best assessments: 93.7% of the respondents rate the response of the American public to be good, very good, or excellent;³ 83.6% percent gave a similar positive assessment to the Red Cross.⁴ The worst evaluations went to the state and local police (72% rated the response to be only fair, poor, or very poor); other divisions of local and state government (70% similarly rated the response to be just fair or worse). The national government did not come out much better: almost half of the sample (49.3%) rated the response of the National Guards/armed forces to be only fair or worse. Over half (58.2%) rated the response of the rest of the federal government to be fair or worse. Insurance companies were also very negatively evaluated, with more than half (55.5%) evaluating their performance to be only fair or worse.

Table 5 about here

Impacts of the disaster upon our respondents and their families are summarized in Table 6. The ubiquity of significant financial impacts throughout this community is remarkable – 95% of this community experienced property losses related to the storm of at least \$10,000; almost a third experienced losses in six figures. Over half described their losses as either “severe” or “total destruction.” Less than a quarter said that insurance would cover most or all of their losses; a fifth had no insurance at all. In spite of such widespread devastation, only a small proportion (21%) reported borrowing money in response to the losses they incurred in the storm. Not surprisingly, given the extent of the devastation in this community, two thirds report their quality of life to be worse than it was before the Katrina disaster. In spite of this decline in the overall quality of life, almost four fifths (78%) report an intention to remain in New Orleans.⁵

Table 6 about here

In Table 7, we compare pre-Katrina characteristics of our original respondents (all of whom we originally interviewed during the summer before Katrina struck) who had returned to New Orleans by the one year anniversary of the storm (n=79) versus those

² Mosquitoes were virtually non-existent during the first few months after the flooding (probably due to the petroleum film killing most of the larvae) but returned with a vengeance during the following summer.

³ Only one said excellent.

⁴ None said excellent.

⁵ We needed to provide a specific time referent for this question, so we chose a period of two years, since other surveys had used this time frame to inquire about future intentions.

who had not yet returned by this one-year anniversary (n=49)⁶. While the likelihood of having returned did not vary significantly by age, sex, education, residence (East versus West Bank), health status, or the degree of acculturation, it differed markedly by marital status - those who were not currently married (either never married or separated) were more likely to remain away; the married were more likely to have returned (p = 0.01). Those unemployed before Katrina were less likely to have returned than those who were employed. Those engaged in labor occupations (e.g., electricians, plumbers, carpenters) before the flood were among the most likely to have returned (71% had done so) but professionals and businessmen had lower rates of return by the one year anniversary (56% had done so). As expected, those who owned their homes were much more likely to have returned than those who rented (p = 0.00). We also find that among married couples, those who had returned by the fall of 2006 were much more likely than those who had not to have at least one child under the age of 18 (p=.03).

Table 7 about here

The last column of Table 7 presents results of our multivariate logistic regression predicting the probability of having returned to New Orleans by the time of follow up in 2006. Included in the model are variables that are related to the outcome of interest (having returned to New Orleans by the one year anniversary) both theoretically and empirically.. Although the presence of dependents was hypothesized to be related to early return, limiting the analysis to only those with dependents would further reduce our already limited statistical power to detect differences in this small sample. Results of our regression model show that labor workers were nearly 5 times as likely as people who were unemployed pre-Katrina to have returned to the area one year after the hurricane (p<.05). In addition, people who owned a house pre-Katrina were also 3 times as likely as those who rented to have returned (p<.05).

Table 8 similarly compares those who came back within 6 months of the hurricane (i.e., the average length of duration of displacement) to those who did not, but employs characteristics related to the hardships imposed by Katrina to make this distinction. This analysis is carried out among 82 respondents for whom we have post-Katrina information; the three respondents who had not returned to their pre-Katrina area by the time of interview are categorized as being displaced for more than 6 months. The degree of losses incurred is a significant factor in determining whether the respondent had returned within 6 months of the disaster (by the end of February 2006). Those who had incurred less than \$50,000 damages were the most likely to have returned within 6 months; those with more than \$100,000 in damages were the least likely to return within 6 months after the hurricane (p = 0.02). Insurance coverage is also a significant predictor of early return: those who had at least some insurance coverage were more likely to have returned within 6 months than those who did not (p<.04). People whose insurance covered most or all of the losses were the most likely to have returned early. Early versus late evacuation does not predict earlier or later return; nor does one's assessment of quality of life post-Katrina.

Conclusions and Discussion

⁶ Three of the 82 respondents interviewed in 2006 had not returned to New Orleans by the time of interview.

Hurricane Katrina struck near New Orleans on August 29, 2005, and resulted in the collapse of the federal protective levee system and the flooding of most of the city. New Orleans East, where the main Vietnamese enclave is located, was especially hard hit. By chance, just weeks before this disaster occurred we collected with our colleagues a wide range of demographic and health data for a population-based sample of working age Vietnamese Americans living in New Orleans. One year after the storm, we re-interviewed everyone from the original sample who had returned to the area. This re-interview sample included about two-thirds of the original sample. This rate of return is much higher than it has been for the city as a whole; other sources of data are consistent with our finding that the Vietnamese community is returning much more quickly than other groups.

This rapid rate of return is remarkable given the extent of the damage to this community. The main Vietnamese enclave is in the New Orleans East, which suffered especially heavy flooding from the levee failures on the industrial canal and the Mississippi River Gulf Outlet (MR-GO). Over half of our sample suffered property damages of at least \$50,000, and almost a third suffered damages exceeding \$100,000. Indeed, over half described their damages as “severe” or “total destruction.” Among those suffering significant losses, only about a quarter had sufficient insurance to cover most of their losses.

Some of the most significant hardships experienced during the immediate aftermath of Katrina were overcrowding and unsanitary conditions; lack of information; and fears about crime. While living conditions had improved rapidly by the one year anniversary of the disaster, concerns about lack of information, medical care, and crime persist. Forty percent of our sample cited fear of crime as a major concern one year post-Katrina. Given the steady recurrence of horrific incidents of violent crime in or near this community during the second year of rebuilding, these concerns are likely to have become even more dire since these data were collected during the fall of 2006.

This community’s concerns about crime, medical care, and lack of information both immediately after the storm and at the one-year anniversary are reflected in their mediocre-to-poor assessment of the performance of the security forces and other government entities at all levels. Insurance companies are evaluated to have performed at only a “fair⁷” level or worse by almost half of the sample. On the other hand, their assessments of the response of the “American people” and the Red Cross to the disaster are extremely positive.

Comparisons of those who had returned by the one-year anniversary with those who had not shows that those who had were more likely to be married than unmarried; more likely to own their homes; more likely to have had dependent children; and more likely to have been working in the skilled sector of the economy than in professional occupations before the storm occurred. Those unemployed before Katrina were also less likely to have returned by the one-year anniversary than those who had been employed. Our multivariate analysis is severely hampered by our small sample. That said, working

⁷ “Fair” here means a mediocre performance, on a scale running from “excellent” to “very poor.” It does not mean that the respondent thought that their insurance company treated them fairly or reasonably.

in labor jobs and ownership of a property in the area were statistically significant predictors of having returned by the end of the first year after the hurricane.

Among those who *had* returned by the one year anniversary, the degree of property losses and insurance coverage are important predictors of early return (i.e. within 6 months of being displaced). Those who had the least amount of damage to their homes and those whose insurance covered most of the losses were the most likely to have returned within 6 months of the hurricane.

The policy implications of our findings are wide-ranging and urgent. First, these results are consistent with a growing consensus that the response of local, state, and national government was unsatisfactory both in the immediate aftermath of the disaster as well as during the first year. That “lack of information” was such a common complaint illustrates a need to reform the emergency information dissemination functions of government at all levels so that they effectively communicate to all citizens during the immediate and medium-term aftermath of a major disaster such as Katrina. This community’s rather harsh assessment of the insurance industry is yet one more indication that significant reforms at the national level are urgently needed for an industry that plays such an important role in disaster recovery.

At the one-year anniversary of the disaster, routine and emergency medical care was essentially absent in or near this community. Unfortunately, at the time of this writing, almost two and a half years after the event, this remains the case. The immediate establishment of permanent routine and urgent medical care facilities in this community must move to the top of the recovery agenda for our region.

Finally, the corrosive effect that violent crime is having on the city and on this community is impossible to overstate. If this problem is not immediately and effectively dealt with, widespread feelings of lawlessness and vulnerability are destined to slow or even stall the recovery of one of the city’s most vibrant communities.

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Table 1: Demographic characteristics of the study populations pre- and post-Katrina (summer 2005 & fall 2006).

	Pre-Katrina (N=128)	Post-Katrina (N=82)
	% (N)*	% (N)*
Age (in 2005)		
Mean age	41.9	44.0
s.d.	4.9	4.9
Sex		
Female	32.8 (42)	34.1 (28)
Male	67.2 (86)	65.9 (54)
Marital status		
Never married/separated	16.4 (21)	8.5 (7)
Currently married	83.6 (107)	91.5 (75)
Marital Status		
Never married	12.6 (16)	6.2(5)
Married living together	78.0 (99)	86.4 (71)
Separated//widowed	9.4 (12)	7.3 (6)
Education		
0-6 years		14.6 (12)
	21.8 (24)	
7-9 years	15.5 (17)	17.1 (14)
10 years or above	62.7 (69)	68.3 (56)
Occupation		
Unemployed	10.9 (13)	12.8 (10)
Labor workers	50.7 (63)	64.1 (50)
Professional and business	36.1 (43)	23.1 (18)
Residence		
Inside Vietnamese enclave	78.9 (101)	78.0 (64)
Outside Vietnamese enclave	21.1 (27)	22.0 (18)
Length of time been in USA		
(years by 2005)		
Mean	25.5	25.4
Std.	4.9	5.1
Pre-Katrina health status		
Excellent or very good	58.6 (75)	59.8 (49)
Good, fair, or poor	41.4 (53)	40.2 (33)
Household structure		
Have dependent children (under 18 years of age)**	69.7 (69)	85.7 (60)
Have elderly dependents (over 65 years of age)	4.7 (6)	8.5 (7)

Notes:

*: Some denominators are less than 82 due to missing values.

** : The denominators are those who were married and for whom we have pre-Katrina (n=99) and post-Katrina (n=70) data.

Table 2: Evacuation experience among those followed up at 1 year anniversary (N=82)

	% (N)
Left before or after the storm	
Left before	78.0 (64)
Left after	20.7 (17)
Reason stayed behind	
Did not believe it would be bad	58.8 (10)
Job required to stay	35.3 (6)
No place to go	5.9 (1)
Evacuation destination in first month	
Houston, TX	46.9 (38)
Other, TX	11.1 (9)
New Orleans, La.	1.2 (1)
Other, La.	27.2 (22)
Other, outside La.	13.6 (11)
Type of residence in first month	
Hotel, motels	28.8 (23)
Relative's; friend's houses	51.2 (41)
Shelters	20.0 (16)
Length of time displaced (mean=5.5 months)	
1-3 months	35.8 (29)
4-8 months	33.3 (27)
≥ 9 months	30.9 (25)

Note: Some denominators are less than 82 due to missing values.

Table 3: Difficulties faced in first week after the hurricane (N=82)

	None % (N)	A little % (N)	Some % (N)	A lot % (N)	Extreme % (N)
Shortage of food/water/clothes	53.6 (37)	8.7 (6)	15.9 (11)	13.0 (9)	8.7 (6)
Getting needed medication	60.0 (48)	16.3 (13)	11.3 (9)	6.3 (5)	6.3 (5)
Financial problems	49.4 (40)	21.0 (17)	9.9 (8)	12.3 (10)	7.4 (6)
Crowded/unsanitary	27.2 (22)	14.8 (12)	17.3 (14)	27.2 (22)	13.6 (11)
Family argument	63.8 (51)	15.0 (12)	12.5 (10)	5.0 (4)	3.8 (3)
Embarrassment/humiliation	40.7 (33)	21.0 (17)	23.5 (19)	9.9 (8)	4.9 (4)
Fear of crime	42.5 (34)	16.3 (13)	18.8 (15)	10.0 (8)	12.5 (10)
Lack of information	37.0 (30)	17.3 (14)	19.8 (16)	14.8 (12)	11.1 (9)

Note: Some denominators are less than 82 due to missing values.

Table 4: Difficulties faced one year after the storm (N=82)

	None % (N)	A little % (N)	Some % (N)	A lot % (N)	Extreme % (N)
Shortage of food	98.8 (79)	1.3 (1)	---	---	---
Shortage of water	95.1 (77)	2.5 (2)	1.2 (1)	1.2 (1)	---
Problem with heat	96.3 (77)	1.3 (1)	---	---	---
Problem with insect	36.7 (29)	2.5 (2)	12.7 (10)	26.6 (21)	21.5 (17)
Too little space	78.8 (63)	7.5 (6)	5.0 (4)	7.5 (6)	1.3 (1)
Too many people	80.5 (66)	8.5 (7)	6.1 (5)	3.7 (3)	1.2 (1)
Too little privacy	88.9 (72)	3.7 (3)	3.7 (3)	1.2 (1)	2.5 (2)
Family argument	87.8 (72)	8.5 (7)	2.4 (2)	1.2 (1)	---
Unsanitary condition	80.2 (65)	7.4 (6)	7.4 (6)	2.5 (2)	2.5 (2)
Feeling crowded	75.6 (62)	11.0 (9)	8.5 (7)	2.4 (2)	2.4 (2)
Feeling isolated	91.5 (75)	1.2 (1)	3.7 (3)	2.4 (2)	1.2 (1)
Problem getting medication attentions	51.3 (40)	9.0 (7)	14.1 (11)	20.5 (16)	5.1 (4)
Lack of information	63.4 (52)	8.5 (7)	14.6 (12)	12.2 (10)	1.2 (1)
Fear of crime	41.5 (34)	1.2 (1)	17.1 (14)	34.1 (28)	6.1 (5)

Note: Some denominators are less than 82 due to missing values.

Table 5: Assessment of how government responded to the hurricane (N=82)

	Excellent % (N)	Very good % (N)	Good % (N)	Fair % (N)	Poor % (N)	Very poor % (N)
FEMA	1.2 (1)	9.9 (8)	40.7 (33)	34.6 (28)	12.3 (10)	1.2 (1)
The state and local police	----	1.4 (1)	21.7 (15)	44.9 (31)	23.2 (19)	4.3 (3)
Other part of state and local government	---	----	29.6 (21)	45.1 (32)	23.9 (17)	1.4 (1)
The national force/armed forces	---	2.9 (2)	47.8 (33)	43.5 (30)	5.8 (4)	---
Other part of federal government	---	1.5 (1)	40.0 (26)	49.2 (32)	9.2 (6)	----
Red Cross	----	26.6 (21)	57.0 (45)	16.5 (13)	----	----
Relief agencies	---	8.7 (4)	50.0 (20)	41.3 (19)	----	----
Insurance companies	1.4 (1)	16.7 (12)	26.4 (19)	51.3 (37)	4.2 (3)	----
The American public	1.3 (1)	31.6 (25)	60.8 (48)	6.3 (5)	----	---

Note: Some denominators are less than 82 due to missing values.

Table 6: Impacts of Hurricane Katrina on Vietnamese Immigrants (N=82)

	% (N)
Property losses (\$)	
Less than \$10,000	5.0 (4)
\$ 10,000-50,000	45.0 (36)
\$50,000-100,000	18.8 (15)
More than \$100,000	31.3 (25)
Property damage	
Slight	17.1 (13)
Moderate	28.0 (23)
Severe	41.5 (34)
Total destruction	13.4 (11)
Insurance coverage	
Cover most of losses	23.8 (19)
Cover some of losses	52.5 (42)
No insurance at all	20.0 (16)
Not much lost to worry	3.8 (3)
Borrowed money	
Yes	20.7 (17)
No	79.3 (65)
Life compared to pre-Katrina	
Better	4.9 (4)
The same	29.3 (24)
Worse	65.9 (54)
Intention to stay in New Orleans next 2 years	
Yes	77.8 (63)
No	22.2 (18)

Note: Some denominators are less than 82 due to missing values.

Table 7: Relationships between pre- Katrina characteristics and the probability of having returned to New Orleans by October 2006.

Individual characteristics	Bivariate results		X ² or F-statistic (p-value)	Multivariate results OR (95% CI)
	Returned (N=79) % (N)	Haven't returned (N=49) % (N)		
Age			2.18 (0.14)	
Mean age	42.4	41.0		–
s.d.	5.1	4.6		
Sex			0.00 (0.98)	
Female	38.1 (26)	61.9 (16)		1.00
Male	38.4 (53)	61.6 (33)		.90 (.37-2.22)
Marital Status			6.37 (0.01)	
Never married/separated	33.3 (7)	66.7 (14)		1.00
Currently married	67.3 (72)	32.7 (35)		1.65 (.57-4.80)
Education			3.49 (.18)	
0-6 years	45.8 (11)	57.2 (13)		–
7-9 years	70.6 (12)	29.4 (5)		–
10 years or above	65.2 (45)	37.8 (24)		–
Occupation			6.14 (.04)	
Unemployed	38.5 (5)	61.5 (8)		1.00
Labor worker	71.4 (45)	28.6 (18)		4.98 (1.28-19.38)
Professional and business	55.8 (24)	44.2 (19)		1.96 (.51-7.52)
Residence			0.35 (0.55)	
Outside Vietnamese enclave	66.7 (18)	33.3 (9)		–
Inside Vietnamese enclave	60.4 (61)	39.6 (40)		–
English proficiency			0.10 (0.75)	
Bad English	60.0 (30)	40.0 (20)		–
Good English	62.8 (49)	37.2 (29)		–
Acculturation degree (*)			0.27 (0.60)	
Mean	17.9	18.3		–
Std.	4.25	5.00		
Own or rent house			9.17 (0.00)	
Rent	38.7 (12)	61.3 (19)		1.00
Own	69.1 (67)	30.9 (30)		2.97 (1.09-8.07)
Pre-Katrina health status			0.40 (0.53)	
Good, fair, or poor	64.0 (48)	36.0 (27)		–
Excellent or very good	58.5 (31)	41.5 (22)		–
Have dependent children <18 years of age*			5.02 (0.03)	
No	57.1 (20)	42.9 (15)		–
Yes	72.2 (52)	27.8 (20)		–
Have dependent elderly >65 years of age			1.91 (0.18)	
No	61.5 (75)	38.5 (47)		–
Yes	66.7 (4)	33.3 (2)		–

Note: Some denominators are less than 82 due to missing values.

*Among those who were married pre-Katrina (n=99).

Table 8: Bivariate relationships between length of time people were displaced and post-Katrina factors

	Length of time displaced (N=82)		X² (p-value)
	Short	Long	
	(≤ 6 months)	(> 6 months)	
	N=47	N=35	
	% (N)	% (N)	
Property losses			7.4 (0.02)
Less than \$50,000	70.0 (28)	30.0 (12)	
\$50,000-100,000	60.0 (9)	40.0 (6)	
More than \$100,000	36.0 (9)	74.0 (16)	
Insurance coverage			2.7 (0.04)
Cover most of losses	77.3 (17)	22.7 (5)	
Cover some of losses	54.8 (23)	45.2 (19)	
No insurance	37.5 (6)	62.5 (10)	
Left before or after the storm			0.6 (0.68)
Before	57.8 (37)	42.2 (27)	
After	58.8 (10)	41.2 (7)	
Life compared to pre-storm			1.9 (0.16)
The same or better	67.9 (19)	32.1 (9)	
Worse	51.9 (28)	48.1 (26)	

Note: Some denominators are less than 82 due to missing values.