

Differentials in health care among Vietnamese immigrants in New Orleans pre- and post-Katrina

INTRODUCTION

The Vietnamese immigrants, notably those who lived in New Orleans East that was heavily damaged by the flooding following Hurricane Katrina, were among the firsts who returned to the city and rebuilt their life. Three years after the hurricane, the community is back on its feet and thriving. Yet, health services are virtually absent: there is only one Vietnamese family doctor in the area (compared to two physicians pre-Katrina) and the closest health facility in case of an emergency is still Tulane Hospital that is 15 miles away. This paper examines health care utilization and differences by socio-economic status among Vietnamese New Orleanians before and after Hurricane Katrina struck the Gulf Coast.

Health care utilization among Vietnamese-Americans has been reported to be low (Strand and Jones 1983), in part due to difficulties in communicating with providers. Language is a significant barrier to accessing health care for many immigrants (D'Avanzo, 1992; Le, 2004). Other constraints include unemployment, being unable to get assistance, and lack of health insurance (Stephenson, 1995). Only about half of Southeast Asian immigrants have job-based health insurance compared to almost three-quarters of whites; 27% of Southeast Asian immigrants have no health insurance at all, compared with 13% of whites and 23% of blacks without insurance (Smedley et al. 2002). A disjuncture between traditional and western belief systems has also been found in much of the literature to be an important barrier to use of health care services among Vietnamese immigrants in North America and other developed countries (see for example, Donnelly, 2006; Houston, 2002; Le, 2004). These cultural differences exist not only in knowledge and values with regard to the conceptualization of health and illness, but also in beliefs with regard to patient-provider relationship (Donnelly, 2006).

This paper aims to answer two questions: 1) what are differences, if any, in health care utilization by socio-economic status among Vietnamese immigrants in New Orleans, and 2) how do these differences change over time before and after Katrina. Results have important implications for policy making in addressing health care needs of a major immigrant population in Louisiana.

DATA AND METHODS

Data

Data for this paper come from a panel of 82 Vietnamese immigrants of working age (25-49) in New Orleans. Baseline data, including physical health measures and information related to health service utilization, were collected in 2005, only weeks before Hurricane Katrina struck the Gulf Coast. The same data were collected again in the Fall of 2006 and 2007 from the same people. Outcome of interest is whether individuals obtained a routine physical exam within the last year. The main independent variables under study include those that measure socio-status of respondents, including education, home ownership and health insurance, which is a proxy for employment status because most health insurance in this population was obtained through employers.

Statistical models

Our data include observations on the same individuals over three points in time, which means that there may be unobserved factors at the individual level that may influence the outcome. There are different approaches to analysis that control for unobserved factors at the individual level (Brüderl, 2005; Wooldrige, 2002). However, most of these approaches would require that data be aggregated at the individual level, which would not work in this case if we aim to examine changes over time.

For this reason, we need an approach that allows us to control for unobserved factors at the individual level, and at the same time, to take into account the fact that data were collected at three points in time. Fixed-effect estimation with “demeaning” method, where for each point in time, each individual is compared against the average value of all individuals observed at the same time (Brüderl, 2005). The method has been employed in economics, sociology and labor force research (see a review by Halaby, 2004); we have not been able to find a study in public health where this method has been applied.

The model takes a general form as follow:

$$Y_{ij} - \text{mean}(Y_{ij}) = \beta_0 + \beta_1[X_{ij} - \text{mean}(X_{ij})] + \beta_2 T_{ij} + \beta_3 T_{ij} * [X_{ij} - \text{mean}(X_{ij})] + \varepsilon_{ij}$$

Where:

Y_{ij} = a measure of outcome for individual i at time j ($j=0, 1$ and 2)

X_{ij} = a set of characteristics of individual i at time j

T_j = indicator of time

ε_{ij} = random error

The model depicts departure of outcome (routine physical exam) of an individual from the mean value of the outcome among all individuals observed at the same time. If there is no inequality, β_1 should be 0. A significant and positive β_1 indicates increases in likelihood of routine exam among clients of better SES status; and a significant, negative β_1 indicates the opposite. Either way, a β_1 significantly different from 0 indicates differences in health care utilization by SES. In addition, β_3 indicates

FINDINGS

Table 1 shows a remarkable declining trend of routine physical exam among Vietnamese immigrants since right before Hurricane Katrina. While 70% of them had a physical exam in a year before the hurricane, the proportion went down significantly one year later, and even further to just over 40% two years after the hurricane. There were some significant differences in the proportion of people who had routine physical exam by individual characteristics.

Before the hurricane, in 2005, the vast majority of Vietnamese women had a routine exam, compared to less than two-thirds of Vietnamese men. After the hurricane, the differences between genders no longer existed – in 2007, less than half of men and women had an exam. Ownership of the house that respondents lived in is another factor by which there were some significant differences in the proportion of individuals who had routine physical exam. In 2005, more than three-quarters of those who were home owners had the exam, compared to 43% of

those who did not own a home. In 2006, the pattern was the opposite: home owners were less likely to obtain routine exam than the others; and in 2007, home ownership was not associated with routine physical exam.

Table 1. Routine physical exam within the last year among Vietnamese immigrants in New Orleans, before and after Hurricane Katrina, 2005-2007.

Individual characteristics	Routine physical exam within the last year (%)			
	2005	2006	2007	Total
Gender				
Male	60.7**	61.1	46.2	56.2
Female	92.3**	46.4	39.3	58.5
Education				
<12 years of schooling	63.9	64.5	40.5	55.8
≥12 or more years of schooling	76.1	51.0	46.5	57.9
Household assets				
<7 items	75.0	62.5	0.0	54.2
≥7 items	70.5	54.6	46.1	57.3
Ownership of house currently lived in				
No	42.9*	83.3*	42.9	55.0
Yes	76.5*	51.4*	43.9	57.4
Have health insurance				
No	51.7**	56.8	30.8	47.8*
Yes	81.1**	55.6	50.0	62.5*
Overall health now is poor				
No	67.6	41.5**	40.0	52.9 [†]
Yes	90.9	70.7**	48.6	64.4 [†]
Total	70.7**	56.1**	43.8**	57.0
N	82	82	80	244

[†] p<.10; * p<.05; ** p<.01; *** p<.001

We also found differences in routine physical exam by health insurance and subjective assessment of overall health. As expected, those with health insurance were much more likely than those without insurance to have routine exam. In 2005, the majority of the insured (81%) had a routine exam within the year before, compared to only half of the uninsured. In 2006, the proportions of people who obtained routine physical exam were similar between the insured and uninsured – about 56%. However, in 2007, it dropped dramatically among the uninsured to less than a third (30%) while it stayed at about 50% among the insured. Routine physical exam also seemed to vary by individual’s subjective assessment of their own health. Those who considered their health to be poor were more likely than those who did not to obtain routine care, although it was not always statistically significant. In addition, there was a declining trend in routine health care among both groups; of particular concern is the drop from 91% of those who thought their health was bad obtained routine physical exam to less than half of them in 2007. There were no differences in routine physical exam by individual’s education level, nor were there differences by English skills and the degree of acculturation (not shown).

In Table 2, we examine the main factors that were hypothesized to have associations with whether one would obtain routine health care. We also examine whether these associations changed over time, in particular whether differences in health care utilization were increased or diminished with time, compared to 2005 before Hurricane Katrina struck. The models presented in the table are results of the fixed-effect models where outcomes and independent variables were time-demeaned.

Table 2. Differences in routine physical exam in the last year among Vietnamese immigrants in New Orleans by individual socio-economic characteristics, 2005-2007.

	Routine physical exam within the last year				
	Coef. (s.d.)				
	Model 1	Model 2	Model 3	Model 4	Model 5
Gender					
Male	—	—	—	—	—
Female	-.03	-.03	-.03	-.03	-.04
Ownership of house currently lived in	.02	.29*	.01	.02	.25 [†]
Education	.01 [†]	.01 [†]	.01*	.01 [†]	.01*
Household assets	.05	.06	.10	.07	.12
Have health insurance	.17*	.16*	.33**	.17*	.29*
Year					
2005	—	—	—	—	—
2006	.01	.01	.01	.01	.01
2007	.01	.01	.01	.01	.01
Year * ownership of house					
2006 * ownership		-.61**			-.55**
2007 * ownership		-.26			-.21
Year * health insurance					
2006 * health insurance			-.35*		-.26 [†]
2007 * health insurance			-.11		-.11
Year * years of education					
2006 * education				-.03*	-.03 [†]
2007 * education				.01	.01
Adj. R-squared	.04	.07	.05	.05	.08
N	243	243	243	243	243

[†] p<.10; * p<.05; ** p<.01; *** p<.001

Model 1 included only the main effects of factors under study. Health insurance was strongly associated with routine physical exam: those who had insurance were significantly more likely than the uninsured to have routine exam, after other factors were controlled for (p<.05). Education was also marginally related to routine physical exam: those more educated were more likely to get the exam (p<.10). Time was not associated with routine health care in the main model. In models 2, 3 and 4, time was interacted with ownership of the house, health insurance and education – one at a time – to see whether it moderated the associations between these

factors and health service utilization; in model 5, all three interaction terms were included. Results of these models are fairly consistent.

These models show that home owners, those with insurance, and those who were more educated were significantly more likely than others to have routine exam. However, in 2006, all of these differences were either reduced or reversed. For example, in 2006, home owners were actually less likely than the others to have routine physical exam. The differences by educational level and health insurance, similarly, were minimized in 2006. Two years after the hurricane, time did not moderate any of these associations.

CONCLUSIONS

This study shows some significant differences in health care use by socio-economic status among Vietnamese immigrants in New Orleans. In 2005, people who were more educated and had health insurance were more likely than others to have routine health care; home owners were also more likely than people who did not own a house to have a routine physical exam within the last year. After the hurricane, all of these differences were diminished or reversed. However, it is possible that the changes were not because of improved access to health care in the area. In fact, half of the respondents reported at least some difficulties in accessing health care in the year after the hurricane struck (Vu et al., 2008). More likely, the reductions in differences in health care are in part due to the special circumstance of New Orleans at the time. For example, in 2006, many of people that were surveyed had return to the area but were living in a different house/apartment than their own, while they were repairing the house. Because of it, the differences in health care utilization between home ownership groups disappeared. In 2007, when most home owners had returned to their home, the differences were observed again. Another possible reason is that in 2006 and 2007, while the entire city as well as the Vietnamese community was still in the recovery and rebuilding process, routine health care was not among top priorities for Vietnamese immigrants, while health service availability remained limited. Routine physical exam declined in all groups over time. The study suggests persistent differences in health care use by socio-economic status among Vietnamese immigrants in New Orleans, a community often considered homogenous and very closely connected. Health programs in post-Katrina New Orleans should work to not only increase access to health care, but also to improve equity of health care utilization among sub-groups of population.

Note: We are in the process of obtaining data from the Louisiana Health and Population Survey 2006. The analysis is planned to be expanded to a comparison between Vietnamese immigrants and the mainstreams populations in New Orleans post-Katrina.

References

- Brüderl, J. 2005. *Panel data analysis*. Mannheim; Baden-Württemberg: University of Mannheim.
- D'Avanzo. 192. Barriers to health care for Vietnamese refugees. *Journal of Professional Nursing* 8:245-253.
- Donnelly, T.T. 2006. The health-care practices of Vietnamese-Canadian women: cultural influences on breast and cervical cancer screenings. *The Canadian Journal of Nursing Research* 38(1):82-101.

- Halaby, C.N. 2004. Panel models in sociological research: theory into practice. *Annual Review of Sociology* 30:507-544.
- Houston, H.R. 2002. Health care and the silent language of Vietnamese immigrant consumers. *Business communication quarterly* 65(1):37-47.
- Le, T.D. 2004. *Barriers to Health Care among Vietnamese Refugees in Tarrant County, Texas*. Thesis.
- Smedley, B., Stith, A. and Nelson, A. (eds) 2002. *Unequal treatment: confronting racial and ethnic disparities in health care*. Institute of Medicine Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care. Washington, D.C.: Institute of Medicine.
- Stephenson, P.H. 1995. Vietnamese refugees in Victoria, B.C.: an overview of immigrant and refugee health care in a medium-sized Canadian urban centre. *Social Science and Medicine* 40(12):1631-1642.
- Strand, P.J. and Jones, W, Jr. 1983. Health service utilization by Indochinese refugees. *Medical Care* 21:1089-1098.
- Vu, L., VanLandingham, M.J., and Do, M. 2008. Evacuation and return of Vietnamese New Orleanians affected by Hurricane Katrina. *Working Paper No. 2008-04*. Tulane University School of Public Health and Tropical Medicine, Department of International Health and Development.
- Wooldridge, J. 2002. *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: The MIT Press.