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Undocumented immigrants and their use of medical services in Orange County, California

Leo R. Chavez*

Department of Anthropology, University of California, Campus Drive, Irvine, CA 92617, USA

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A B S T R A C T

Does an undocumented immigration status predict the use of medical services? To explore this question, this paper examines medical care utilization of undocumented Latino immigrants compared to Latino legal immigrants and citizens, and non-Latino whites in Orange County, California. Data were collected through a random sample telephone survey of 805 Latinos and 396 non-Hispanic whites between January 4 and January 30, 2006. Findings show that undocumented immigrants had relatively low incomes and were less likely to have medical insurance; experience a number of stresses in their lives; and underutilize medical services when compared to legal immigrants and citizens. Predictors of use of medical services are found to include undocumented immigration status, medical insurance, education, and gender. Undocumented Latinos were found to use medical services less than legal immigrants and citizens, and to rely more on clinic-based care when they do seek medical services.

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One of the most pressing research and ethical issues facing medical social scientists is health care for the estimated 20–30 million undocumented, or unauthorized, migrants worldwide (Ruiz-Casares, Rousseau, Derluyn, Watters, & Crépeau, 2010). A number of salient issues have emerged in the literature. For example, undocumented immigrants and other vulnerable populations face many obstacles when seeking medical care. Underutilization of medical services, as Ruiz-Casares et al. (2010: 330) note, is associated with "poorer health outcomes such as longer stays in hospitals, more acute health crises, and higher mortality rates." When facing obstacles, undocumented immigrants may turn to emergency room service as the health care of last resort, which unfortunately is not the most cost-effective form of care. Debates over a right to medical care and issues of deservingness for unauthorized residents have surfaced in the United States and many other countries, both industrialized and developing (Anya, 2007; Castañeda, 2009; Fassin, 2004; Goldade, 2010; Heyman, Núñez-Mchiri, & Talavera, 2009; Hirsch, 2003; Romero-Ortuño, 2004; Willen, 2011).

Of particular concern has been the importance of the structural factors, especially inequality, influencing im/migrant health-seeking behavior (Dressler, 2010; Farmer, 2003; Nguyen & Peschard, 2003) and transnational public health problems (Collins-Dogrul, 2006). Ruiz-Casares et al. (2010) suggest a research approach that engages the macrolevel (laws and practices established by states) when examining immigrant health-related practices, particularly during periods of hardening immigrant policies. Similarly, Willen, Mulligan, and Castañeda (2011) call for more research on how local configurations of "illegal" migration affect im/migrant health experiences. They especially argue for research that examines the way "illegality" is a risk factor that interacts with other risk factors, including "including occupational hazards; risk of exposure to infectious disease; vulnerability to violence; poverty; discrimination; and structural, institutional, linguistic, and cultural obstacles to health care, among other factors – to put unauthorized im/migrants in positions of health-related disadvantage" (Willen et al., in press). Along these lines, Wolff et al. (2005) found that low income, undocumented pregnant women in Geneva, Switzerland faced obstacles to medical services, including preventive care and cancer screening tests, a pattern also found for similar women in Southern California (Chavez, McMullin, & Hubbell, 2001). In addition, Buttenheim, Goldman, Pebley, Wong, and Chung (2010) argue that it is important to examine social diversity when considering health-related behavior of Mexican immigrants in the United States. This point was also emphasized by Malmusi, Borrell, and Benach (2010) in their study of gender, social class, and migration characteristics in relation to health inequalities among immigrants in Catalonia, Spain. Similarly, Jayaweera and Quiqley (2010) argue that it is important to collect information on all categories of migrants when examining the health of migrants and their access to health services. Finally, Horton and Barker (2010) find that a lack of access to medical care for

* Tel.: +1 949 824 4054.
E-mail address: lchavez@uci.edu.

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Mexican American farmworker children, because of inadequate medical insurance coverage, can have long-term social effects that reproduce a system of social inequality, what they call "stigmatized biologies."

Building on this literature, this paper examines survey data focusing on undocumented Latino immigrants' use of medical services in Orange County, California. The questions guiding the analysis are: Do undocumented immigrants use local medical services and if so, what types of services? And, what role, if any, does immigration/citizenship status play in the use of medical services in relation to other variables such as gender, age, immigration/citizenship status, medical insurance, income, education, and family (being married and having children in the household)?

These questions are not just of interest to medical researchers, but are also of great public interest. According to one poll, a majority of Americans believe that undocumented immigrants do not deserve social benefits such as medical care because of their unauthorized status (Rasmussen, 2009). In addition, policies governing medical care for immigrants have, as Beatrix Hoffman (2006, 238) noted, "reflected the nation's erratic immigration policies.". The Immigration Reform and Control Act of 1986 (IRCA) excluded some categories of legal immigrants from Medicaid during their first five years in the country. Also in 1986, Congress barred undocumented immigrants from medical care for any condition besides medical emergencies (Buescher, 2003; Hoffman, 2006). However, the U.S.-born children of poor, uninsured undocumented immigrants are typically covered by government-financed medical programs, and in some cases prenatal care for the mother is covered as well (Larrubia, 2006). In 1996, the Personal Responsibility and Work Opportunity Reconciliation Act (the welfare reform act) restricted state and federal benefits for non-citizen immigrants who are legal permanent residents (HHS, 1996). More recently, the Patient Protection and Affordable Care Act that President Obama signed into law on March 23, 2010, explicitly excluded undocumented immigrants (HHS, 2011).

Although undocumented immigrants are a "shadow" population, making research difficult, there have been some important contributions to understanding their social circumstances and health-related behavior. Studies using U.S. census data have relied on a number of assumptions to estimate undocumented immigrant characteristics and find that unauthorized immigrants tend to be employed in low-paying jobs such as farming, grounds-keeping, construction, manufacturing, food preparation and serving, housecleaning and other domestic services, jobs which are typically characterized as having high turnover, offer few benefits, such as vacations, pensions, and medical insurance, and little in the way of job mobility (Massey, Durand, & Malone, 2002; Passel & Cohn, 2009). In addition, undocumented immigrants are less educated than U.S.-born residents. They had median incomes significantly lower than U.S.-born residents ($36,000 compared to $50,000 median household income in 2007), often did not have health insurance (59% without health insurance in 2007) and they are barred from most government-supported, non-emergency medical services (Passel & Cohn, 2009). Undocumented immigrants in Orange County, California were found to have similar patterns of labor market participation (except fewer employed in agriculture), income, education, and medical insurance rates (Chavez, Hubbell, Mishra, & Valdez, 1997).

The obstacles to medical care experienced by undocumented immigrants are both structural, a reflection of their disadvantaged position in the labor market, and political, the result of public policies to reduce costs and to reduce the alleged magnet of social services to future migrants, views shared by about two-thirds of Americans (Beam, 2009; Rasmussen, 2010). However, there is evidence that the primary motivation of undocumented immigrants when coming to the United States is for jobs, not medical and other social services (Berk, Schur, Chavez, & Frankel, 2000). The fact that new receiving states, such as Georgia, for much of the post-2000 undocumented immigration typically offer less access to medical and other social services than traditional immigrant-receiving states such as California and New York underscores labor motivations for migration (Yang & Wallace, 2007).

Importantly, hospitals throughout the nation face major problems with uncompensated medical care expenses for uninsured patients (Bixler, 2004; Guggenheim, 2008). However, what part undocumented immigrants, who only account for about 20% of the nation's uninsured population, play in this problem is not entirely clear (Okie, 2007). Undocumented immigrants who do not have the means to gain access to medical care, which is available by paying in cash or with public or private medical insurance, often find the door closed to most health care (Rodriguez, Ward, & Perez-Stable, 2005).

Another study examined nationwide data to compare 1998 health expenditures of immigrants residing in the United States with health care expenditures of U.S.-born persons (Mohanty et al., 2005). Expenditures covered emergency department visits, office visits, hospital-based outpatient visits, inpatient visits, and prescription drugs. The study found that per capita expenditures for immigrants were 55% lower than those for U.S.-born persons. Similarly, uninsured and publicly-insured immigrants received about half of the medical expenditures of the U.S.-born under similar conditions. Immigrant children had 74% lower expenditures compared to U.S.-born children. Only in one area, emergency department expenditures, did immigrant children exceed the expenditures for U.S.-born children, which the authors attribute to access to routine and on-going medical care being especially difficult for immigrant children. The study also examined expenditures by ethnicity and found that Hispanic immigrants ($962) had about half (51%) of the per capita expenditures of U.S.-born Hispanics ($1870), and the lowest per capita expenditures compared to U.S.-born and immigrant Whites ($3117 and $1747, respectively), Blacks ($2524 and $1030, respectively), and Asian/Pacific Islanders ($1460 and $1324, respectively). Finally, Alexander Ortega et al. (2007) found that undocumented Latino immigrants, in particular, used medical services less than U.S.-born Latinos.

By comparing undocumented Latino immigrants' use of medical services with that of their legal immigrant counterparts and U.S. citizens, both Latino and non-Latino whites, this paper contributes to the literature in a number of ways. The research presented above is typically national level data. Here we examine a case study in which we can delineate Latino undocumented immigrants as a specific part of the population at the county level. Using logistic regression, we are also able to examine whether or not undocumented status predicts the use of medical services when controlling for income, age, gender, education, marital status, children, and medical insurance. Finally, this study's examination of health care use can provide insights into intriguing findings, such as that above, that undocumented immigrants receive less of the nation's expenditures on medical care than other groups.

Methods

Setting

Orange County covers an area of 789 square miles, is largely urban, and contains 34 cities and numerous unincorporated communities (U.S., 2006). It is the third most populous county in California, with an estimated 3,002,048 inhabitants in 2006, of whom 30.5% were foreign-born. With an understanding that it is

difficult to estimate the undocumented immigrant population, they may account for about 10.2% of the county's overall population in 2006 (Fortuny, Capps, & Passel, 2007; Paral, 2006; U.S., 2006). Latinos accounted for 32.5% of the county's population in 2005. Most Latinos are of Mexican heritage, but Latino immigrants are also from other nations in Latin America, particularly Central America. Latinos are found in greater concentrations in the northern half of the county, which includes Santa Ana, where about 4 out of 5 residents are Latinos (U.S., 2010). While Mexicans (56%) and other Latin Americans (22%) made up the majority of undocumented immigrants in the nation in 2005, estimates of the proportion of Latinos that are undocumented are not available at the county level (Passel, 2006).

Orange County is an excellent site for this study not just because of the large proportion and diversity of Latinos, but for other reasons as well. Even though it had a median household income in 2008 of $74,862 (almost $24,000 above the California average), it is an economically diverse county, ranging from modest working class communities to wealthy communities (U.S., 2010). The southern half of the county has been an area of rapid growth in new middle class, upper-middle class, and exclusive (i.e., mostly white) residential communities. Latino immigrants often work in south county communities but find less expensive housing in the many working class communities in the northern part of the county (Chavez et al., 1997).

Finally, Orange County has also been one of the areas where anti-immigration movements have found substantial support. In the early 1990s, Ronald Prince, one of the co-founders of the Save Our State (SOS) initiative, was based in Orange County. The SOS initiative was the basis for the 1994 California state initiative known as Proposition 187, the so-called "anti-illegal alien initiative" and a forerunner of Arizona's 2009 anti-immigration law (McDonnell, 1994). Jim Gilchrist, founder of the Minutemen movement to express concern with what they perceive as a lack of enforcement of the nation's borders, is also an Orange County resident (Delson, 2005; Kelly, 2005). In sum, the demographics of the county and the local concern for public policy issues surrounding immigration reform make Orange County a particularly apt place to examine questions about immigrants and their use of medical services.

Data

Survey data were collected between January 4 and January 30, 2006, from 805 Latinos and 396 non-Latino whites (hereafter simply whites) in Orange County. Latinos were oversampled to account for diversity in generation and immigration status. The survey used random-digit dialing on a sample from a database that includes all U.S. directory-published household numbers, both listed and unlisted, combined with a sample that had identified Hispanic markers, such as unique first and last names. The latter sample was used to increase the likelihood of finding Latinos, especially those dispersed in areas with low proportions of Latinos and Latinos with traditionally non-Latino surnames. Once on the phone, a series of questions about ethnic background and age were asked to determine eligibility for the study. Both listed and unlisted numbers were included, avoiding potential bias due to exclusion of households with unlisted numbers (Survey Sampling Inc., 1990). In addition, telephone survey findings may not be generalizable to families without telephones. In Orange County, however, approximately 94% of Latinos and 99% of whites have telephones (CSCDC, 1995). Despite these high proportions, there is still a limitation based on some members of the population without phones, for example, recent immigrants and the unemployed.

Eligible participants were English- or Spanish-speaking men and women, 18 years of age or older, who were not institutionalized and who identified themselves as white (Anglo, Caucasian, non-Hispanic white) or Latino (Hispanic or more-specific ethnic identifiers such as Mexican, Mexican American, Salvadoran, etc.). Only one person per household was interviewed. If more than one person in the household was 18 or older, the person with the birthday closest to the date of the interview was selected. Interviews were in the interviewee's language of choice. Questions were drawn on previous studies of immigration and medical care utilization to enhance comparability. Survey questions were translated to Spanish and back translated into English. Questions were pretested through face-to-face interviews conducted by the author and by the Interviewing Service of America. The research protocol was positively reviewed by the University of California, Irvine's Office of Research Administration Institutional Review Board.

Up to 8 telephone callbacks at different times of the day were made to unanswered phone numbers or to connect with respondents. Interviewing Services of America (ISA) monitored the 79 interviewers used in the study for quality and reliability. The response rate was 70%. It is not possible to give the response rates by immigrant group because immigrant group or ethnicity was not collected until after we had gained cooperation.

Measures

Although Latino and Hispanic are often used interchangeably, the term Latino is used here as a pan-ethnic identifier of people of Latin American descent living in the United States. For the purposes of this analysis, respondents who were born in a Latin American country and/or self-identified as Latino, Hispanic, or a specific Latin American nationality (e.g., Mexican, Salvadoran, etc.) were classified as Latino.

Survey questions focused on residence, family, education, work, income, discrimination, immigration status, political engagement, various social and economic experiences, use of medical services, and health. Questions of life stressors were drawn from research on an array of health outcomes and stress (Campos, Schetter, Walsh, & Schenker, 2007; Dressler, 1996; Farley, Galves, Dickinson, & Perez, 2005; Wallace & Wallace, 2004). Not all questions in the survey are examined here.

Immigration status was assessed through two questions. First, we asked if the respondent was a legal permanent resident of the United States, a naturalized U.S. citizen, or something else (the default category). We then asked if any of the following applied to their immigration status: awarded asylum; awarded Temporary Protected Status; applied for a work permit; applied for permanent residence; applied for political asylum. The default category consisted of those without authorization to be in the United States. As the findings below indicate, unauthorized immigrants differed significantly along a range of socioeconomic variables from legal permanent residents, naturalized citizens, and U.S.-born citizens.

Two questions focused on medical insurance. One questioned asked about medical insurance through work, for interviewee and/or spouse/partner. The other question asked about government-sponsored insurance programs, such as Medi-Care, Medi-Cal or Indigent Medical Services.

Questions on medical services use focused on the use of medical services in year previous to the interview. Those who did use medical services were asked about the type of services they used.

Data analysis

Data was analyzed using the Statistical Package for the Social Sciences (PASW 18). Variables were analyzed using frequencies

Table 1
Respondents in Orange County Survey, 2006.

Interviewees	Males		Females		Total	
	N	%	*N*	%	*N*	%
Mexican immigrants	215	58.7	282	64.2	497	61.7
Salvadoran immigrants	7	1.9	12	2.7	19	2.4
Other Central American immigrants	17	4.6	15	3.4	32	4.0
Other Latin American immigrants	9	2.5	14	3.2	23	2.9
Other foreign-born Latinos	2	0.6	0	0	2	0.2
US-born of Mexican descent	95	26.0	90	20.5	185	23.0
Other US-born Latinos	21	5.7	26	5.9	47	5.8
Total Latinos	366	100.0	439	99.9	805	100.0
Whites						
U.S.-born	147	96.7	226	92.6	373	94.2
Foreign-born	5	3.3	18	7.4	23	5.8
Total Whites	152	38.4	244	61.6	396	100.0
Total respondents	518	100.0	683	100.0	1201	100.0

Source: [excluded for anonymity] 2006 Survey of Orange County, California.

(means, medians), crosstabulations (Chi-square tests), and logistical regression (odds ratios and 95% confidence intervals). Cases with missing values were excluded from the analyses.

A logistic regression model was used to estimate the odds ratio (OR) of using medical services in the year prior to the interview among Latino respondents. The model uses "sought medical care in the previous year" ($0 =$ no; $1 =$ yes) as the outcome variable. Predictor variables are: private or government insurance ($0 =$ no; $1 =$ yes), citizenship status ($0 =$ undocumented; $1 =$ legal permanent resident or citizen); sex ($0 =$ male; $1 =$ female), age, income ($0 = <\$35k$; $1 = \$35k$ or more), total years of education, marriage status ($0 =$ single; $1 =$ married or living together), and children living with respondent ($0 =$ no children living with respondent; $1 =$ children living with respondent.

Findings: social determinants of health care utilization

Most Latinos in the survey (84.7%) were of Mexican origin, which includes both immigrants and U.S.-born Latinos (Table 1). There were, however, Salvadoran and other Central American immigrants, some South Americans, and a few immigrants from the Caribbean. Females accounted for 57% of the total sample; females accounted for about half (55%) of Latinos and 62% of whites. Women have particular demands for prenatal and postnatal care, and are often responsible for child health care. These proportions of females in the study should provide a better estimate of medical service utilization that would occur if only males were sampled.

Most (71.2%) of the Latino respondents were first generation, meaning that they were born in a foreign country and migrated to the United States. Second generation, the U.S.-born of at least one immigrant parent, accounted for 16.4% of Latinos surveyed. Those with three or more generations in the United States accounted for 11.9% of Latinos. Only 23 white respondents were foreign-born.

Of the 794 Latino respondents on whom we have information on citizenship status (11 interviews with missing values), 30.4% were undocumented immigrants, 25.8% were legal permanent residents, 14.6% were naturalized citizens, and 29.2% were U.S.-born citizens. None of the respondents were officially-designated political refugees nor had any applied for political asylum.

Undocumented status is associated with less time in the United States, fewer years of schooling, lower income, and being less likely to have medical insurance than other Latinos or whites (Table 2). Undocumented Latinos had a median of 9 years of education, while legal permanent residents had 11 years, and naturalized citizens 12 years. U.S.-born Latinos, with 13 years of education, had more years of education than their immigrant counterparts, but still fewer than whites.

Income varied significantly by citizenship status among Latinos ($p < .001$). Few undocumented Latinos had yearly family incomes (their earnings and their spouse/partners if relevant) above \$35,000, a significant difference from other Latinos ($p < .001$). Although legal immigrant Latinos were twice as likely to be in the upper income category than undocumented Latinos, most were also in the lower income category. On the other hand, a majority of Latino citizens, both naturalized and U.S.-born, and whites earned above \$35,000 a year. These findings are comparable to findings at the national level (Passel & Cohn, 2009) and in Orange County (Chavez et al., 1997) for unauthorized immigrants.

We also asked a series of questions on language use. For example, we asked what language respondents spoke at home as a child and what language they spoke at home at the time of the interview. We also asked about the language used at work and with friends. Undocumented Latinos are the most likely to speak Spanish at home and U.S.-born Latinos more likely to speak only or mostly English ($p < .001$).

Although their incomes were relatively low, undocumented men were more likely to be employed full-time than other Latinos and whites in the survey (Table 3). In addition, Latino immigrants are clustered in jobs (construction, manufacturing, personal services, and restaurant-type work) that often do not provide medical insurance. Medical insurance coverage, whether private or government-sponsored varies by citizenship status among Latinos ($p < .001$). Although relatively few undocumented men and women had insurance through work, undocumented women were more likely than undocumented Latino men to have had government-sponsored medical insurance, primarily for pregnancy and post-pregnancy related care. In contrast, legal immigrants and U.S.-born Latinos were more likely to have medical insurance through the workplace. Whites in the study were the most likely to have medical insurance through work or government-sponsored medical care, more often for Medi-Care given their average older age compared to Latinos.

Undocumented status is also a lived experience, what some call a condition of illegality (De Genova, 2002; Willen, 2007). To explore the lived implications of illegality, we asked questions about

Table 2
Social and economic variables by citizenship-immigration status.

	Age (median)	Married-living together (%)	Years in U.S. (median)	Years of schooling (median)	Family income \$35,000 or more (%)	Speak all or mostly English at home (%)
Undocumented Latinos $N = 241$	33	71.9	12	9	15.2	1.2
Legal Permanent Residents $N = 205$	41	68.0	20.5	11	31.4	8.3
Naturalized Citizens $N = 116$	45	67.9	27	12	65.7	11.3
U.S.-born Latinos $N = 232$	37	61.1	NA	13	73.6	65.7
All Latinos $N = 794$	37	67.3	NA	11.5	43.4	21.6
Whites $N = 396$	57	77.1	NA	16	79.2	100.0

Source: UC Irvine's Center for Research on Latinos in a Global Society's 2006 survey of Orange County.

Table 3
Employment, insurance, use of medical care by citizenship-immigration status and gender.

	Work full-time %	Work part-time %	Medical insurance work %	Medical insurance Gov't %	Medical care in past year %
Undocumented Latino					
Men ($N = 101$)	72.3	19.8	27.7	16.9	41.6
Women ($N = 140$)	27.1	17.1	22.9	30.7	64.3
Legal permanent residents & Naturalized citizen					
Men ($N = 144$)	68.1	11.8	51.4	19.4	53.2
Women ($N = 177$)	39.5	13.0	50.8	25.4	77.0
U.S.-born Latino					
Men ($N = 116$)	64.7	6.9	62.9	16.4	62.5
Women ($N = 116$)	51.7	12.1	57.8	29.3	79.1
All Latino					
Men ($N = 361$)	67.8	12.8	48.5	18.3	59.7
Women ($N = 433$)	37.4	13.9	43.4	28.8	75.7
White					
Men ($N = 152$)	54.6	4.6	76.3	34.9	86.8
Women ($N = 244$)	31.1	10.1	77.0	37.3	90.9

Source: UC Irvine's Center for Research on Latinos in a Global Society's 2006 survey of Orange County.

stressful experiences over the five years previous to the interview. Undocumented Latinos (9.1%) were more likely than Latino legal permanent residents and citizens (4.7%, $p < .05$) and whites (2.8%, $p < .01$) to have been forced to move during that time because they could not afford to pay for rent. Undocumented Latinos (18.3%) were also more likely to have experienced a period when they lacked money than Latino legal immigrants and citizens (13.1%) and whites (3.5%, $p < .001$). Undocumented Latinos (31.3%) also experienced a lack of transportation for work more often than Latino legal immigrants and citizens (16.5%, $p < .001$) and whites 6.6%, $p < .001$). And, undocumented Latinos (6.2%) were more likely to have been homeless at some point during that time period than Latino legal immigrants and citizens (3.6%) and whites (1.5%, $p < .01$).

Use of medical services

Latinos (68.8%) in general were significantly less likely than whites (89.3%) to have sought medical services in the year before the interview ($p < .001$) (Table 3). Among Latinos a lack of citizenship status made a difference in seeking medical care. Latino undocumented immigrants (54.8%) were significantly less likely than other Latinos to have sought medical care in the past year ($p < .001$). Most Latino legal permanent residents (67.8%), naturalized citizens (78.4%), and U.S.-born Latinos (79.3%) sought medical care. This utilization pattern corresponds with undocumented Latinos having the lowest income and being least likely to have medical insurance. Citizens, both Latino and white, were significantly more likely to have sought medical care than undocumented Latino immigrants.

Not only were undocumented Latinos significantly less likely to have sought medical care than citizens, they differed significantly in the type of medical services they used ($p < .001$) (Table 4). Undocumented immigrants visited private doctor's offices, hospital outpatient clinics, and health centers and clinics. Hospital

Table 4
Where medical care sought by citizenship-immigration status.

	Doctor's office (%)	Hospital ER (%)	Hospital outpatient clinic (%)	Health center-public health clinic (%)	Health management organization (HMO) (%)
Undocumented Latinos $N = 132$	29.2	6.9	34.6	26.9	2.3
Legal permanent residents $N = 139$	49.3	5.8	23.9	20.3	.7
Naturalized citizens $N = 91$	68.9	.1	15.6	8.9	5.6
U.S.-born Latinos $N = 184$	73.8	6.6	13.7	3.8	2.2
Whites $N = 352$	87.4	3.4	5.2	2.3	1.7

Source: UC Irvine's Center for Research on Latinos in a Global Society's 2006 survey of Orange County.

emergency rooms accounted for 6.9% of those seeking medical care in the year previous to the interview. Undocumented Latino immigrants used ERs at about the same proportion as U.S.-born citizen Latinos. Of the nine undocumented Latinos who sought care from hospital emergency rooms, 7 (77.8%) had medical insurance. This is about the same proportion of the 22 U.S.-born citizens (77.3%) who had insurance when they visited an emergency room for care. Citizens, both Latino and white, visited mostly private doctors' offices. Immigrants, both legal and undocumented, mostly sought care at hospital outpatient clinics, health centers, and public health clinics.

These patterns suggest that clinic-based care is a much more important source of medical care for Latino immigrants, both undocumented and legal, than citizens. Legal Latino immigrants use private doctors more than undocumented Latinos, but less than citizens. Latino legal immigrants use clinic-based care more than citizens but not as much as undocumented Latinos. That 29.2% of undocumented Latinos in the sample used private doctors may seem surprising, but this reflects the ability to pay private doctors with cash and thus avoid the financial questions associated with hospital-based care.

What predicts whether Latinos sought medical care in the previous year? Logistic regression analysis helps answer that question. In the analysis presented in Table 5, the outcome variable is seeking medical in the year before the interview. According to logistic regression analysis, Latinos with medical insurance were 2.27 times as likely as those without insurance to seek medical care. Females were 2.3 times as likely as men to seek medical care. And Latinos with more years of education were more likely than less educated Latinos to seek medical care. Finally, legal immigrants and citizens were 72% more likely than undocumented Latinos to seek medical care.

Discussion

If the data examined here can serve as a guide, undocumented immigrants in Orange County are at a disadvantage when it comes to accessing medical care. They have relatively low incomes and few receive medical insurance through their work. Some do receive government-sponsored insurance, especially women, for whom care is often provided to ensure the health of future U.S. citizen babies. In addition, undocumented immigrants are a vulnerable

Table 5
Summary of logistic regression analysis for variables predicting seeking medical care in the previous year among Latinos in Orange County, California.

Predictors	Latinos only	
	Odds ratio	95% confidence intervals
Medical insurance		
1 = Yes	2.27***	1.53–3.37
0 = No		
Gender		
1 = Female	2.32***	1.56–3.45
0 = Male		
Age	1.02	1.00–1.03
Citizenship status		
1 = Legal immigrants & citizens	1.72*	1.09–2.70
0 = Undocumented		
Yearly income		
1 = $35k +	1.47	.921–2.34
0 = <$35k		
Total years of education	1.06*	1.01–1.13
Marital status		
1 = Married	.95	.58–1.57
0 = Single		
Child in household		
1 = One or more child in house	1.05	.66–1.67
0 = No child HH		
Constant	.01***	
χ^2		81.456
df		8

*$p < .05$; **$p < .01$; ***$p < .001$.

population overall, in that they are not only stigmatized as "drains" on the health care system in public discourse, but they are more likely than other Latinos and whites in Orange County to experience a number of economically-related stressors, such as hunger, homelessness, and a lack of transportation (Keusch, Wilentz, & Kleinman, 2006).

Under such circumstances, paying for medical care is but one of many expenses that undocumented immigrants need to juggle, or even avoid. This point is underscored by Luzmila, who was 27 years old, single, and had been in the United States for about seven years living as an undocumented immigrant: "I don't have insurance. Not to have insurance is something awful, right, because here in the United States medical care is very expensive. And you know that for many people, what we earn is barely enough to eat and live. So when we have these types of illnesses we don't go to the doctor because of a lack of money. Insurance would help a great deal because then they would attend to you and you would not have to pay" (Chavez, 2009: 153). Such compromises between health needs and other survival needs are common among undocumented immigrants (Lai, Saldinger, & Spruyt, 2005; Ortega et al., 2007).

Given these socioeconomic constraints, it is perhaps not surprising that almost half of the undocumented immigrants surveyed had not sought medical care in the year previous to the study. Compared to other Latinos and whites, undocumented immigrants did not over-utilize medical care in Orange County. In sum, an undocumented immigration status is an important structural constraint when seeking medical services. This observation was supported by logistic regression analysis, which found that being undocumented was a significant predictor of not seeking medical care.

Moreover, when undocumented immigrants did use medical services, they did so in ways that were different from the services typically used by citizens, both Latino and white. Undocumented immigrants, and to some extent legal Latino immigrants, typically used hospital outpatient clinics, health centers and public health clinics. Their use of hospital emergency rooms was not their first choice for primary care and accounted for a relatively small proportion of the care they sought. Interestingly, some undocumented immigrants used private doctors, who often make it possible for undocumented patients to pay in cash, a major attraction for those without medical insurance.

A limitation of this study is that it is not able to determine health care expenditures among undocumented immigrants. However, the findings suggest that undocumented immigrants use cost-efficient, clinic-based medical care when they do seek medical care, or pay-as-you-go visits to private doctors. These services are relatively cost-efficient, in that they provide primary care for large number of low-income people, compared to more costly inpatient hospital services and emergency rooms. In addition, some do have private or government-sponsored medical insurance. Such findings may help explain the relatively low proportion of medical expenditures attributed to undocumented immigrants by the studies presented above. Thus, when it comes to medical care for undocumented immigrants, there are costs, but they appear to be mitigated by the types of services they frequent.

This study has a number of other limitations. It is focused on one county in one state, albeit a region of the country that has experienced major immigration over last fifty years. It is also limited by the use of telephone-based surveying, which was discussed under methods, above. Finally, survey data, such as that examined here, is limited in its ethnographic depth. Future research would benefit from including ethnographic research on these issues.

The findings from this study underscore the need for empirical research on undocumented immigrants and their use of medical care, especially at the local level. It is the local level where health care is provided and it is also where immigrants make social, economic and cultural contributions, key factors for medical researchers concerned with issues of equity and deservingness. It is also the level at which the cost and benefits of medical care for vulnerable populations might best be assessed, and where creative strategies for improving access to medical care might emerge. Finally, patterns of health care use presented here provide a basis for comparing the local impacts of the Patient Protection and Affordable Care Act, which does not include undocumented immigrants.

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