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Differential Health Outcomes among Hispanic Immigrants reporting Chilling Effects[1]

Nicole Maki Weller
Jennifer E. Glick
Seline Szkupinski-Quiroga
Alexandra Brewis Slade
Ben VanderMeer

Center for Population Dynamics

Arizona State University

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Background

Health outcomes in the United States vary across ethnic and socioeconomic groups with poorer health outcomes observed among low income and minority groups. These disparities may originate from lower access to health insurance or regular health care providers, from the physical environment constraints in low income communities, from higher prevalence of negative health behaviors such as smoking, or poor dietary habits (Lynch and Kaplan, 2000). Among Hispanics in the United States, variations in health status have also been attributed to nativity and duration of residence such that those with the best observed health outcomes are often those with the least amount of time in the United States (Cho, Frisbie, Hummer, and Rogers, 2004). In addition to the correlation between duration of residence in the United States and health, perceived and actual discrimination towards ethnic and minority populations may also impact willingness to access health resources and lead to subsequent health disparities between Hispanics and other groups (Walsemann, Gee, and Geronimus, 2009).

Within the United States, recent immigrant populations are considered to be more vulnerable to poor physical, psychological, and social health outcomes (Derose, Escarce, and Lurie, 2007). The immigrant population in the United States has doubled since 1970 with individuals from Latin America representing over 50% of foreign born immigrants and over 80% of undocumented immigrants in the United States (Derose, Escarce, and Lurie, 2007; Larsen, 2007). Yet, despite their increased vulnerability to poor health outcomes, studies have noted a "Hispanic health paradox", which recognizes better than expected outcomes among Hispanics. In sum, the Hispanic health paradox notes that immigrants arriving in the United States have better health outcomes when compared to

the native born population despite lower socioeconomic status (Hajat, Lucas, and Kington, 2000; Scribner, 1996). After residing in the United States however, these same populations begin to present poorer health outcomes, essentially falling in line with the expected health trajectories of individuals with lower socioeconomic indicators (Hajat, Lucas, and Kington 2000). This 'health paradox' is often attributed to an acculturation process blamed for encouraging less healthy behaviors as immigrants and their offspring spend more time in the country (Franzini and Fernandez-Esquer, 2004; Cho, Frisbie, Hummer and Rogers 2004; Markides and Coreil, 1986). Researchers have considered multiple factors which could contribute to a worsening of health among Hispanic immigrants, including adapting poor nutritional and dietary standards of the receiving country, economic constraints that would provide access to healthy lifestyle behaviors such as exercise, access to parks or healthy food sources, and restricted access to employment opportunities providing health care coverage options (Cho, Frisbie, Hummer and Rogers, 2004).

In this paper, we take advantage of an ongoing data collection effort in a low income, majority Hispanic community in Phoenix, Arizona. Since the 1880s, the neighborhoods of urban South Phoenix have been the primary receiving area for Latino immigrants, especially from Mexico, and have long been subjected to official neglect in the provision of infrastructure and access to reasonable housing. Residents have also suffered from disproportionate exposure to such environmental challenges as poor air quality and excess heat (Bolin, Grineski, and Collins, 2005; Bolin, et al., 2002; Grineski, Bolin, and Boone, 2007). Diabetes and respiratory illness rates are also much greater than in the surrounding city, as is difficulty accessing health care. Other significant factors that

affect the health and wellbeing of South Phoenix residents include very high rates of child obesity, uneven access to healthy food sources, and limited transportation choices. The community has also been hit particularly hard by the recent economic downturn. The housing downturn hit the construction industry, a major employer of documented and undocumented immigrants in Arizona (e.g. An estimated 52% of workers in construction in Arizona in 2006-2008 were foreign born) (Author's Calculations from the American Community Survey, 2006-2008). Foreclosure rates are also high in Arizona with over 13,000 foreclosures in Maricopa County in January 2010 (Realty Trac, 2010). In addition to this economic vulnerability, increased local attention and visibility of immigration enforcement may also increase the sense of insecurity and unwillingness to access health care among community members. The most visible local immigration enforcement entity in the Phoenix area is the Maricopa County Sherriff's Office (MCSO) which conducts periodic "Crime Suppression Sweeps" aimed at arresting undocumented immigrants (MCSO Press Releases, 2001).

Faced with harsh economic and immigration conditions in the local community, immigrants in the South Phoenix area may be unwilling or unable to access local health resources further exacerbating health disparities. But we may see few nativity differences within the community because U.S. born residents are subject to the same economic conditions and often have family members impacted by immigration enforcement. This paper examines the potential association between these worsening economic conditions and increased visibility of immigration enforcement and health outcomes such as access to health insurance, access to a regular health care provider, and self-rated health, for a predominantly Hispanic, mixed nativity sample.

Vulnerability: Economic Downturn

Previous studies have suggested that the existing sociodemographic inequalities among minorities in the U.S. contribute to poor health outcomes. According to Lynch and Kaplan (2000) the social status of an individual influences their level of vulnerability to social factors effecting health outcomes. For example, certain populations will be more negatively impacted by downturns in economic stability such as widespread job loss or the rising cost of living. These authors suggest that certain demographic characteristics such as income, race and ethnicity, or even nativity status may be associated with increased vulnerability levels (Lynch and Kaplan, 2000). It seems likely that the recent economic downturn will also have disproportionate effects on low income immigrants.

In addition to the implicit vulnerabilities that accompany sociodemographic characteristics is the concept of income inequality. Although briefly addressed by Lynch and Kaplan (2000) in regards to an overall concept of vulnerability, income inequality produces widespread disparities in health outcomes. Kawachi (1999) describes a linear relationship between income inequality and poor health outcomes where lower income individuals are more likely to have poor health outcomes. It is possible that a more socially disadvantaged group is likely to be in lower income categories and therefore more susceptible to poor health. Kawachi (1999) continues with the notion that additional, confounding factors contribute to the negative effect of income on health outcomes. One such confounding factor presented in this study is concerned of economic stability including fear of losing employment or housing, difficulty finding employment or housing, as well as difficulty paying bills. This study has direct access to a population

that would be characterized as a low income, highly vulnerable population that may or may not have worse health outcomes as a consequence of economic downturns.

Vulnerability: Immigration Enforcement

The perception of discrimination may lead to differential health outcomes over the life course (Geronimus, 1992; Walsemann, Gee, and Geronimus, 2009). This 'weathering' hypothesis has recently been adapted to include the experience of recent Latino immigrants as well (Gee, et al., 2006). These analyses are focused on the direct effect of discrimination on individual health outcomes. A related body of literature focuses on the impact of policy provisions and changes that may reduce uptake of available welfare or other social services. Such 'chilling effects' have been reported in studies of the 1996 federal welfare reform law, Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) which initiated a shift in immigrant access to health care. The law restricted immigrant access to government sponsored health care, Medicaid, for five years upon arriving in the U.S., and consequentially left eligible individuals afraid to apply for health services in fear of forfeiting their chances to become citizens (Kullgren, 2003; Ku and Matani, 2001). Despite the socioeconomic factors that would qualify individuals for Medicaid or other government funded health insurance programs, many immigrants are left without any medical coverage. Ku and Matani (2001) found that utilization of government funded health insurance, among citizen and noncitizen immigrants, has decreased since PRWORA was enacted and that recent immigrants are afraid to apply for any benefits that may be eligible to them, or their children, because of the strict guidelines enforced by PRWORA.

Kullgren's study (2003) supports the findings by Ku and Matani (2001) by demonstrating that the intent of PRWORA to reduce utilization of government services by undocumented immigrants has actually resulted in decreased enrollment numbers by eligible immigrants for services. Kullgren (2003) found that an additional consequence of the transformed government health care programs is the increased financial burdens on the U.S. health care system to accommodate the rising costs of uninsured patients.

Further studies have indicated that employment-sponsored insurance and public health insurance programs are the primary sources of health care coverage for low income individuals, a category in which Hispanic immigrants are considerably overrepresented (Okie, 2007; Brown, Ponce, and Rice, 2001). The subsequent policy reforms that developed from PRWORA, as well as changes in immigration policies, have left this population underrepresented in terms of health care coverage. Immigrants, both citizen and non-citizen, report that they are less likely to have and maintain consistent health insurance (Williams, Neighbors, and Jackson, 2003; Ku and Mantini, 2001; Carrasquillo, Carrasquillo, and Shea, 2000; Williams and Wiebe, 2000). Still very few studies have been able to address directly how immigrants respond to these chilling effects and their perceptions of health care access and utilization.

Access to Health Insurance

Limited access to health insurance increases the likelihood of financial burdens from the high costs of health care services as well as delaying the receipt of health care (Morales et al., 2002). Buchmueller and Monheit (2009) found that the largest disparity in health care coverage was attributed to the relationship between nativity status and employment. Nativity status, immigrant or not, in part determines whether an individual

will work for an employer that will provide health insurance coverage. Individuals reporting they had employer sponsored health insurance were more likely to report better self-rated health outcomes then individuals without employer sponsored health insurance (Buchmueller and Monheit, 2009). A study by Carrasquillo, Carrasquillo, and Shea (2000) found similar results linking immigrant status to insurance coverage finding the lack of health care coverage among immigrants is strongly correlated with the lack of employer sponsored insurance.

Access to Regular Healthcare Resources

Access to health care is essential in the development of quality health care (Antecol and Bedard, 2006; Doty, 2003; Morales, Lara, Kington, Valdez, and Escarce, 2002). The so-called Hispanic health paradox may stem, in part, from the structural barriers encountered in the receiving context that prevent immigrants from maintaining healthy lifestyles and accessing health care. Limited English language proficiency, low education, and job skills may all lower the ability of immigrants to engage in behaviors and activities that would contribute to healthy outcomes. Garcés, Scarinci, and Harrison (2006) found that Latinas reported poor health as a consequence of unfamiliarity and restricted participation in the health care system. These results were even stronger among those respondents who also reported low levels of income, education, or work experience. Subsequent studies have also pointed to an association between recent arrival in the United States and limited social networks that may assist with health care needs. This results in delayed utilization of health care services and increased risk for poor health outcomes (Derose, Escarce, and Lurie, 2007).

Beyond the barriers encountered by other immigrants and minorities, there may be additional difficulties for undocumented migrants. Poor health outcomes among Hispanic immigrants can be attributed to several factors including a lack of quality health care that can stem from difficulties communicating with health care providers, discrimination or perceived discrimination by health care providers and fears of legal retribution for utilizing health care services (Goldman, Smith, and Sood, 2006). Other studies have found that Hispanic immigrants overwhelmingly report they have less access to educational and occupational opportunities based on racial and discriminatory perceptions of Hispanic immigrants (Finch, Hummer, Kolody, and Vega, 2001; Blankenau, Boye-Beaman, and Mueller, 2000; Clark, Anderson, Clark, and Williams, 1999). This perception of stigmatization based on immigrant status is compounded by recent economic and political changes that could lead to chilling effects among immigrants and their families thus further reducing access to health care.

Self Rated Health

A further effect of recent economic and political changes is on the perception of decreased social cohesion, or in other words, increased feelings of social isolation. Individuals living in communities and neighborhoods that report lower levers of social cohesion are more likely to report poorer self-rated health (Kawachi, 1999). The connection between social isolation and recent economic and political changes occurs when people report concern that rising unemployment rates or attention on immigration enforcement results in neighbors becoming less trustworthy and increased concerns that friends and families will be arrested or deported because of immigration status (Finch and Vega, 2003; Finch et al., 2002; Kawachi, 1999). Because of the lower social cohesion,

access to health resources such as information and support, are limited and negative health outcomes arise (Franks, Gold, and Fiscella, 2003; Kawachi, 1999).

Immigrant status and the perceived stigmatization that accompanies it may also contribute to the level of predictability of self-rated health reports among immigrant populations. Finch, Hummer, Reindl, and Vega (2002) found an association between levels of acculturation and the predictive validity of self-rated health reports. In their study, the more acculturated an individual reported to be, the more valid the reports of self-rated health were to actual health outcomes (Finch et al., 2002). For example, immigrants with longer durations in the U.S. had higher reports of poor and fair self-rated health compared to immigrants with shorter duration lengths (Finch et al., 2002). An additional measure of acculturation, language preference and use, was also significant in accuracy measures of self-rated health; however, language use was not as significant as duration (Finch et al., 2002; Finch et al., 2001). Measures of self-rated health need to take into consideration the effect of acculturation, such as language and duration, when determining accurate measures of health outcomes.

Hypothesis

The analyses in this paper come from an ongoing, systematic data collection effort gathering individual, household and social network data in a low income, Hispanic community located in Phoenix, Arizona. Utilizing these rich data, the analyses examine nativity differences in four health outcomes: access to health insurance, access to healthcare resources, reported diagnoses of health conditions, and self-rated health. The analyses then assess the extent to which individual concerns and fears related to economic downturn and immigration enforcement are associated with these differential

health outcomes. Those respondents who report that changing economic conditions have made it more difficult for them to find or keep a job, find or keep housing and to pay their bills are expected to report lower access to health care resources and worse self rated health. Consistent with the weathering hypotheses and prior research on the chilling effects of policy reform, those respondents who report that increased attention to immigration at the local and national level has made it harder to find or keep a job, find or keep housing, and has reduced their willingness to access medical services are also expected to report less access to health care and worse self rated health. Based on previous research with Latino samples, we also examine the possibility that differential acculturation may be associated with lower use of health services. Therefore, supplemental analyses examine the relationship between language use (a rough proxy of linguistic acculturation) and the same health outcomes (Lara, et al., 2005).

Data and Methods

Data. The data for these analyses come from a unique ongoing data collection project in an area of the city of Phoenix commonly referred to as “South Phoenix”. This area, approximately contained within two zip codes, is 75% Latino and typified by high poverty levels. The motivation for the project originated in concern that recent immigration enforcement activities in the local area, coupled with the economic downturn, would create disproportionate fear and reduced access to economic resources making it more difficult for individuals to secure necessities including adequate food and health care. Thus, the data collection effort focused on the vulnerability of the population and directly assessed food security and resource use as well as individual perceptions of the social climate for foreign and U.S. born individuals in the community.

The sample is drawn through a random sample of Census Block Groups within these zip codes stratified by income to ensure representation of households above and below 185% of the poverty line. Property parcels were weighted by area to ensure equal probability of selection into the sample across property size. Units were randomly selected within multi-unit residential parcels.

Bilingual letters inviting participation are sent to randomly selected households in the community. Then, teams composed of interviewers and a Latino community educator visit sampled households, complete household rosters and secure agreements to participate in the study. Thus, information on basic household composition and language choice are available for some households even if the household decides not to schedule full interviews. Data collection began following field testing in May 2009. To date, 32% of the sampled households have been vacant or contact was not established after three recruitment visits. For households at which contact was established, the rate of recruitment into the study so far is 44%. The demographic composition of participants in the current sample suggests that recent arrivals to the United States (less than 5 years) are greatly underrepresented, as are single gender households.

Households successfully recruited into the study then schedule interviews at a time most convenient for the participants in an effort to ensure all household members are interviewed. All adults in the household are invited to participate in the study and interview teams are composed of anywhere from two to five bilingual interviewers depending on the size of the household. Interviews last an average of 2.5 hours and include basic demographic information, detailed migration histories, income and employment, household division of labor and intra-household resource allocation, food

security, self reported health, and personal social networks. In addition, height, weight and blood pressure are recorded.

Methods. The analyses presented here are based on 112 of the individual interviews. Because all adults in the household were invited to participate in the study, these individuals are clustered in 55 households. Thus, the observations are not independent of one another. Approximately 92% of the 112 households in the sample contained more than 1 respondent. This clustering violates the independence assumptions of ordinary regression models. Ignoring these violations sometimes lead to biased hypothesis tests, often in the form of decreased standard errors and thus greater Type I error. To model the clustering, we use multilevel models—specifically, random intercept models (sometimes called variance components models). The SAS version 9.2 GLIMMIX procedure is used to estimate these models. These models thus adjust for the non-independent reports from natives and immigrants sharing the same households. All of the primary predictor variables and dependent variables come from the individual interviews conducted with all 112 participants.

The four outcome variables in the analyses fall into two categories: access or use of health care and self reports of health status. The first outcome is a simple dichotomous measure of whether the respondent has any health insurance coverage (public or private). The second is a dichotomous measure based on respondents' reports of where they usually seek health care in Phoenix. Respondents who report that they use a primary care physician or public health clinic are reported as having regular health care access. Respondents who report no source of health care or that they only access the emergency room are coded as lacking a regular source of health care. To assess health status, we rely

on self reports. The first measure, a hybrid of health access and status, is a dichotomous variable indicating whether the respondent has been diagnosed with at least one of four common but chronic health conditions: diabetes, asthma, high blood pressure or cholesterol. The second measure of health status is a common ordinal variable representing self rated health based on respondent reports of whether they are in poor health (1) up to excellent health (5).

The analyses examine the association between nativity and these health outcomes with and without controls. The nativity variable comes from respondent reports of place of birth. The vast majority of the 68 foreign born respondents are from Mexico with a few respondents reporting other Central and South American origins. We then adjust for basic demographic characteristics of the respondents (age and sex) and their reported level of education (less than high school versus more than a high school education).

To assess the respondents' own sense of economic vulnerability and concern about immigration enforcement, we use answers to a series of questions designed to elicit how respondent's believe these conditions have impacted their own lives. The items focused on individual effects of immigration enforcement come from a series of questions modeled off those used by the Pew Hispanic Research Center's survey (Pew Hispanic Center, 2007). The subsequent economic downturn prompted the design of questions parallel to the immigration questions but focused specifically on economic conditions. The individual questions on the economic situation and immigration enforcement are shown in the descriptive analyses. All seven questions were then entered into a factor analysis confirming two distinct factors: Economic concerns and immigration concerns (eigenvalues > 1.0). The measures used in the regression models

represent counts of the number of items the respondent reports are negatively impacted by the economic downturn (range from 0-3) or immigration enforcement (range from 0-4).

Finally, the analyses include a measure of language use. This is a three category variable representing respondents' report of how often they speak Spanish and a second parallel item asking how often they speak English. Respondents who report low or no use of English are coded as "Spanish dominant" speakers. Respondents who report low or no use of Spanish are coded as "English dominant" speakers. The remaining respondents, a sizable portion of both the U.S. born and immigrant groups, are coded as "bilingual speakers". Although this preliminary measure does not capture all dimensions of acculturation, it is a reasonable proxy for linguistic acculturation (Lara et al., 2005).

Results

Table 1 provides the percent of respondents in the study who have access to health care and health insurance as well as their reports of diagnosed health conditions and self rated health. Overall, immigrants in the sample report less access to health resources than their U.S. born counterparts. Immigrants are less likely to have health insurance or to report that they seek health care from a regular source (primary care physician or public clinic in the community), and are also less likely to report that they are in very good or excellent health than the U.S. born respondents. There are no differences in the percent of respondents who had been diagnosed with one of four health conditions (diabetes, asthma, high blood pressure or cholesterol).

The majority of the sample is Latino and the clustered sample design (i.e. respondents clustered within sampled households) means that many of the respondents

live in mixed nativity households. Thus, the majority of immigrants and U.S. born respondents report speaking a mixture of Spanish and English. In Table 2 we can observe the difference in health care access and self reports of health by language use. Those who speak Spanish as their primary language are less likely to use primary care or to have health insurance than those who speak English as their primary language. But those who speak a mixture of English and Spanish (i.e. neither language is dominant) are not necessarily worse off than those who speak primarily English in this community. For example, although they are less likely to have health insurance than English dominant speakers, nearly 80% of respondents speaking both languages report access to primary care. This is in contrast to the 63% of Spanish dominant speakers group and 59% of English dominant speakers who report access to primary health care. Nonetheless, the first two descriptive tables suggest that immigrants and Spanish dominant respondents have the lowest access to health care. They are also reporting worse self rated health.

One goal of the study is to determine the association between respondents' own perception of conditions in the community and their access to health care and health status. The study asked respondents about their sensitivity to increasingly visible immigration enforcement. This is an area of particular concern in South Phoenix and its surrounding Maricopa County. In addition, given the recent economic downturn and rising rates of unemployment and foreclosures in the community, respondents were asked about their experiences in this realm as well.

Overall, as expected, immigrants report many more concerns and difficulties as a result of the increased public attention to immigration in the U.S. and Arizona than their U.S. born counterparts. Table 3 presents these results by language use and Table 4

replicates these responses by nativity. In both tables, it is clear that immigrants and those who primarily use Spanish are the most vulnerable to immigration enforcement *and* the economic conditions in the community. In particular, immigrants report more difficulty keeping a job or housing due to both immigration enforcement (52%) and the economic troubles (80.4%). Immigrants are also more likely than the U.S. born respondents to report that increased attention to immigration has made it less likely that they will use medical services in Phoenix (17.6% versus 2%). These results mirror those found by the Pew Hispanic Center survey using similar immigration related questions (Pew Hispanic Center, 2007).

The descriptive results suggest a high degree of perceived vulnerability to economic conditions and immigration enforcement among immigrants in South Phoenix. In addition, there are nativity differences in access to health care and reported health status. Table 5 presents the sample characteristics for the study. The results suggest that immigrants have lower levels of education then US born residents where half of the immigrant respondents report less then a high school education compared to only 27% of natives reporting less then a high school education. Overwhelmingly immigrants report Spanish as the dominant language compared to natives who report a mixture of English and Spanish as dominant language. For natives, a mixture of English and Spanish is preferred over English only as a dominant language. The next step is to determine if the association between nativity and perceived vulnerability and individuals' health care access or health status remains net of their demographic characteristics. We estimate multivariate multilevel regression models to account for the clustering of individuals in households in the sample.

Table 6 presents the logistic regression models predicting whether the respondent reports health insurance coverage. This may be private or public sources of insurance. Table 7 repeats the same sets of models now predicting whether the respondent reports using a primary care physician or public health clinic for health care (versus no source of care or only emergency room care). The results demonstrate that immigrants are less likely to have health insurance than their U.S. born counterparts even when we control for sex, age, and education (see Models 1 and 2 of Table 6). Contrary to our expectations, however, we do not observe an additional association between concerns about the economy or concerns about immigration and health insurance coverage with nativity also in the models (see Models 3 and 4). Models 5 and 6 in Table 6 remove the nativity variable and include a measure for language use. There is an association between language use and health insurance coverage. As in the descriptive results, those who speak predominantly Spanish are the most disadvantaged.

In Table 7, we observe little nativity difference in access to health care until we include measures of economic or immigration concerns. However, unlike the models predicting health insurance, concern about immigration enforcement appears to be particularly associated with a greater likelihood of having a source for health care (Model 4 in Table 7) while immigrants are still less likely to report a usual place for health care. Models 5 and 6 once again assess the association between language use and health care access. Here, those who use a mix of Spanish and English appear advantaged somewhat. Overall, the models in Tables 6 and 7 suggest that immigrants are less likely to have access to health care than their U.S. born community members and that this vulnerability is particularly acute among those who are speaking Spanish predominantly.

Our remaining models assess the association between nativity and reported health status in the South Phoenix community. Table 8 uses a multilevel logistic regression once again this time estimating the likelihood of being diagnosed with one of four health conditions (asthma, diabetes, high blood pressure or cholesterol). Overall, there is little association between nativity and receiving one of these diagnoses. And, there is little association between perceived impact of immigration enforcement or the economic downturn and previous diagnoses. It is clear, however, that having a regular source for health care (primary care physician or health clinic) and having health insurance are positively associated with diagnoses (see Model 5). In other words, although not statistically significant, the results suggest a pathway through which immigrants may be discouraged from seeking health care and are, in turn, less likely to receive health diagnoses or preventative care.

The results in Table 9 present the findings from multilevel ordered logit models predicting self rated health. Here we do not observe the same suggestive pathway to poor health for immigrants. There are no statistically significant differences among immigrants and their U.S. born community members in reported health status but there is a strong association between economic concerns and self rated health so that those who report more adverse effects of the economic downturn also report worse overall health. We also estimated the models for diagnoses and self rated health with the language use variables but found no significant associations with the outcomes (results not shown).

Conclusions

The analyses presented here shed light on the importance of economic and policy conditions on differential health access and outcomes by nativity. South Phoenix is a

vulnerable community both in terms of worsening labor and economic conditions as well as visible immigration enforcement. This community has been particularly hard hit by the economic downturn, and foreclosure rates are some of the highest in the nation. In addition, local efforts to discourage undocumented migration have become increasingly visible, overt, and aggressive. All of these factors are likely to impact the health and well being of all community members.

Immigrants in this community report considerably more fears and concerns about immigration enforcement and the economic downturn than natives. These results mirror those found nationally (Pew Hispanic Center, 2007). Many of the immigrant respondents speak primarily Spanish, have relatively low levels of education and lack insurance and access to health care. But, these immigrants also live with U.S. born family members and neighbors, many of whom share their concerns and vulnerabilities. The results from the first 112 interviews in the community suggest access to health care does vary by nativity. Controlling for basic demographic characteristics, immigrants are still less likely to have health insurance or a regular source of health care than their U.S. born counterparts. Those respondents whose primary language is Spanish are also less likely to have health insurance than those respondents who speak mostly English.

However, with nativity controlled in the multivariate models, it appears that those with greater concerns about immigration enforcement are also those with more access to health care, particularly in the case of access to a regular source of health care. It seems likely that the causal arrow may in fact be reversed such that those respondents who have accessed a formal health care system have encountered more questions about their immigration status or have been asked for documentation more frequently than those who

have not used local medical services. Although this provides indirect evidence at most, the results are consistent with the literature on ‘chilling effects’ such that even natives who are eligible for resources become fearful or reluctant to acquire them.

The analyses of health status reveal few nativity differences. We first examined the diagnoses of health conditions as a measure in between access and actual health status. The results do not point to an association of immigration or economic concerns with receipt of the diagnoses. But, our final model also points to the importance of access to health care as a factor in receipt of these diagnoses. Immigrants may receive fewer of these diagnoses simply because they are unable to access the diagnosticians. The analyses of self rated health also fail to show a significant association with nativity which may be reflective of our simplistic measure of acculturation. Here, however, we find that those with many concerns about the current economic conditions are also those who report the worse health.

This study is indeed a unique contribution to the literature on immigrant health access and status because it is based on a representative sample from a particularly vulnerable and understudied community. Much of the literature on immigrant health is based on purposive samples or larger representative samples in more traditional receiving communities like Los Angeles. This study is focused on a Latino community that has been particularly hard hit by both the economic downturn and more visible and aggressive anti-immigrant rhetoric and enforcement.

Nonetheless, the study does have several limitations. First, the sample is relatively small and refusal rates are not inconsequential. Second, the analyses of the impact of economic and immigration conditions are based on individuals’ perceptions of economic

and immigration conditions. In order to access such a vulnerable population, it was necessary to avoid questions about actual documented status or interactions with law enforcement and so it is not possible to determine respondents' immigration status. We did replicate our models of nativity differences with a measure designed to proxy likely undocumented status (i.e. respondents who are foreign born, do not have US drivers licenses and speak only Spanish). The results are similar to the overall results reported here. Finally, the study is cross sectional so we cannot make strong causal arguments that may be possible if subsequent follow-up interviews are conducted.

In spite of the limitations, our findings are consistent with prior research such that immigrants have lower access to health care than U.S. born members of the same community and, in some cases, same household. Those respondents who are less linguistically acculturated (i.e. speak Spanish predominantly) are the worse off when it comes to accessing health care in the local community. Although recent health care policy provisions may reduce the number of uninsured in the community and increase access to health care resources, a considerable number of community members are likely to resist accessing health care due to fears and apprehension surrounding the immigration issue regardless of their own immigration status.

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Table 1. Access to Health Care and Health Indicators by nativity, South Phoenix 2009

	Immigrants	US Born
Access to Health Care:		
Percent using Primary Care (Physician or Public Health Clinic)	64.7	75.0
Percent with Health Insurance (public or private)	48.5*	75.0
Health Status		
Self Rated Health (Percent reporting very good or excellent health)	18.8*	36.0
Percent with Diagnosed Health Condition (diabetes, asthma, high blood pressure or cholesterol)	44.1	40.9

Source: South Phoenix Community Study, Preliminary Sample (n = 112)

Note: * Indicates significant difference from US Born ($p<.05$)

Table 2. Access to Health Care and Health Indicators by language use, South Phoenix 2009

	Spanish Dominant	Spanish and English	English Dominant
Access to Health Care:			
Percent using Primary Care (Physician or Public Health Clinic)	63.0	79.6	59.1
Percent with Health Insurance (public or private)	47.8*	59.1*	81.8
Health Status			
Self Rated Health (Percent reporting very good or excellent health)	20.0*	26.8	35.0
Percent with Diagnosed Health Condition (diabetes, asthma, high blood pressure or cholesterol)	50.0	38.6	36.4

Source: South Phoenix Community Study, Preliminary Sample (n = 112)

Note: * Indicates significant difference from English Dominant ($p<.05$)

Table 3. Concerns about Immigration Enforcement and Economic Conditions, South Phoenix 2009

	Spanish Dominant	Spanish and English	English Dominant
As a result of the increased public attention to immigration:			
Are you less likely to use medical services in Phoenix?	17.4	9.0	4.6
Have you had more trouble getting or keeping a job?	52.2*	34.1	9.1
Have you been asked for documents more often?	41.3*	29.6	18.2
Have you had more difficulty finding or keeping housing?	52.2*	11.4	9.1
Has the recent economic downturn…			
Made it more difficult to get or keep a job?	80.4*	77.3	50.0
Made it more difficult to find or keep housing?	80.4*	40.9	31.8
Made it more difficult to pay bills?	84.8*	56.8	63.6

Source: South Phoenix Community Study, Preliminary Sample (n = 112)

Note: * Indicates significant difference from English Dominant (p<.05)

Table 4. Concerns about Immigration Enforcement and Economic Conditions, South Phoenix 2009

	Immigrants	US Born
As a result of the increased public attention to immigration:		
Are you less likely to use medical services in Phoenix?	17.6*	2.2
Have you had more trouble getting or keeping a job?	45.6*	22.7
Have you been asked for documents more often?	39.7*	20.5
Have you had more difficulty finding or keeping housing?	42.7*	4.6
Has the recent economic downturn…		
Made it more difficult to get or keep a job?	77.9	65.9
Made it more difficult to find or keep housing?	70.6*	31.8
Made it more difficult to pay bills?	77.9*	56.8

Source: South Phoenix Community Study, Preliminary Sample (n = 112)

Note: * Indicates significant difference from English Dominant (p<.05)

Table 5: Sample Characteristics, South Phoenix Community Study, Preliminary Sample

	Immigrants	US Born
Age	43.3	37.0
(standard deviation)	(13.2)	(19.9)
Gender		
Female	55.9	59.1
Male	44.1	40.9
	100	100
Education		
Less than High School	50.0	27.2
More than High School	50.0	72.8
	100	100
Language Use		
Spanish is Dominant Language	63.2	6.8
Spanish and English	27.9	56.8
English is Dominant Language	8.8	36.3
	100	100
Perceived Vulnerabilities		
Economic Concerns (0-3)	2.26	1.5
(standard deviation)	(1.1)	(1.0)
Immigration Concerns (1-4)	1.45	0.5
(standard deviation)	(1.4)	(.85)
Number of cases	68	44

Source: South Phoenix Community Study, Preliminary Sample (n = 112)

Table 6: Logistic regression models predicting health insurance coverage, South Phoenix Community Study, 2009

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Immigrant (vs. US born)	-1.16 ***	-1.18 ***	-1.21 **	-1.05 **		
Language Use (vs. English dominant)					-1.59 **	-1.31 **
Spanish is Dominant Language					-1.13 *	-1.17 *
Spanish and English						
Male		0.83 *	0.82	0.88 **		0.75 *
Age		0.02	0.02	0.02		0.01
Less than High School (vs. more)		-0.79 *	-0.80 *	-0.80 *		-0.95 *
Economic Concerns			0.04			0.18
Immigration Concerns				-0.14		-0.25

Source: South Phoenix Community Study, Preliminary Sample *(n = 112)*
Note: Multilevel regression models with random intercepts (household id)
*p<.10 **p<.05 ***p<.01

Table 7: Logistic regression models predicting regular access to health care, South Phoenix Community Study, 2009

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Immigrant (vs. US born)	-0.50	-0.80	-0.89 *	-1.21 **		
Language Use (vs. English dominant)						
Spanish is Dominant Language					0.16	-0.76
Spanish and English					0.98 *	0.98
Male		-0.75 *	-0.78 *	-0.91 *		-0.88 *
Age		0.03 **	0.03 **	0.04 **		0.04 **
Less than High School (vs. more)		-0.05	-0.07	-0.09		0.32
Economic Concerns			0.13			-0.04
Immigration Concerns				0.39 *		0.38 *

Source: South Phoenix Community Study, Preliminary Sample *(n = 112)*
Note: Multilevel regression models with random intercepts (household id)
*p<.10 **p<.05 ***p<.01

Table 8: Logistic regression models predicting diagnoses of health problems, South Phoenix Community Study, 2009

	Model 1	Model 2	Model 3	Model 4	Model 5
Immigrant (vs. US born)	0.14	-0.39	-0.44	-0.45	0.02
Male		-0.12	-0.12	-0.14	0.13
Age		0.08 ***	0.08 ***	0.08 ***	0.09 ***
Less than High School (vs. more)		0.08	0.08	0.08	0.39
Economic Concerns			0.08		0.13
Immigration Concerns				0.06	-0.09
Has Regular Source for Health Care					1.92 **
Has Health Insurance					1.13 *

Source: South Phoenix Community Study, Preliminary Sample *(n = 112)*
Note: Multilevel regression models with random intercepts (household id)
*p<.10 **p<.05 ***p<.01

Table 9: Ordered logit regression models predicting self rated health, South Phoenix Community Study, 2009

	Model 1	Model 2	Model 3	Model 4	Model 5
Immigrant (vs. US born)	-0.58	-0.51	0.08	-0.28	0.02
Male		1.00 **	0.96 **	1.05 **	0.83 *
Age		-0.04 **	-0.05 ***	-0.04 **	-0.05 ***
Less than High School (vs. more)		-0.95 **	-0.78 *	-0.92 **	-0.72
Economic Concerns			-0.69 ***		-0.72 **
Immigration Concerns				-0.22	0.02
Has Regular Source for Health Care					-0.54
Has Health Insurance					0.26

Source: South Phoenix Community Study, Preliminary Sample *(n = 112)*
Note: Multilevel regression models with random intercepts (household id)
*p<.10 **p<.05 ***p<.01