Healthcare Utilization as a Source of Health Disparities among U.S. Male Immigrants

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Abstract

Healthcare utilization has important implications for immigrant health, yet remains under-conceptualized, particularly as it relates to men's health. This paper uses nationally-representative data from the 2003 New Immigrant Survey (NIS) to compare utilization behaviors and health outcomes among male immigrants (n=3,901) from Mexico, India, and China. We find that Indian males are more likely than their Mexican and Chinese counterparts to interact with the healthcare system and to report good health, findings largely explained by their privileged social position and access to care. Mexican and Chinese males are hindered by their lack of English language proficiency and are more likely to rate their health as poor. In contrast to the results for self-rated health, we find no significant difference in the likelihood of being diagnosed with a medical condition across national-origin groups. These similarities and differences have broader research and policy implications, which we discuss in the conclusion.

INTRODUCTION

A wealth of studies over the past few decades has brought research on U.S. immigrant health to a crossroads. These studies have largely focused on Hispanic immigrants and provided important theoretical and empirical insight into their health trajectories. At the same time, these frameworks have continued to guide research on newer immigrant populations whose health profiles do not fit neatly within them. For example, the well-established Hispanic paradox—immigrants arrive healthier than U.S.-born whites despite being disadvantaged socioeconomically—fails to apply to many other groups who arrive in the U.S. with higher levels of economic and social capital (Akresh and Frank 2008; Read and Reynolds 2012). Likewise, the oft-noted pattern of declining health with longer duration of U.S. residence among Hispanics is inconsistent across other national-origin groups (Singh and Hiatt 2006), and explanations for the pattern among Hispanics (e.g., selectivity, health behaviors, access to healthcare) have been challenged in recent studies (Gorman et al. 2010; Read and Reynolds 2012).

These and other studies have brought us to a crossroads, one that offers a path to identify new analytic and conceptual tools to fit the increasingly heterogeneous demographic make-up of U.S. immigrant groups. The goal of this article is to take a step down that path, to build and extend past studies, all of which have been vital in our understanding of immigrant health and have brought us to this juncture. We take a slightly different tact than past research and examine the extent to which immigrant health varies by ethnicity within one gender: men. We use a unique, nationally-representative dataset to compare health-seeking behaviors and health outcomes of immigrant men, and we focus on males from the three largest sending countries in the U.S. today: Mexico, China, and India (Walters and Trevelyan 2011). The advantages of this approach are that it allows us to isolate factors that may be unique to immigrants (e.g., English

language ability) and to men (e.g., health behaviors, migration processes). Similar approaches have been used to isolate and better understand the experiences of immigrant women in terms of their health outcomes (Hummer et al. 1999) and employment patterns (Read and Cohen 2007) and may be similarly beneficial for understanding those of men. Additionally, because immigrants in our sample were interviewed within the first year after receiving their green-card, studying their health provides a snap-shot of the health of the most recent cohort of male immigrants to the U.S.

This paper uses data from the 2003 wave of the New Immigrant Survey to address two related research questions: 1) to what extent do health-seeking behaviors among immigrant men vary by country of origin and duration of U.S. residence?; and 2) to what extent are these behaviors linked to health disparities between and within these groups? We focus on contact with the healthcare system because it is an under-conceptualized health behavior that is distinct from healthcare access and taps the degree to which individuals interact with healthcare professionals (Gorman et al. 2010). Our goal is not to explain the better health of immigrants vis-à-vis native-born Americans but rather to tease out health behaviors among immigrant men that may in turn shape their health outcomes. By focusing on immigrant men, we aim to make theoretical and methodological contributions to research on gendered health disparities. Theoretically, we extend the use of a "gender lens" framework, which calls for greater attention to gender as a central organizing mechanism shaping all realms of social life (Curran et al. 2006). This framework has most frequently been used to correct for a lack of attention to women's experiences but may also be useful in research on men, whose lives are also gendered, albeit in very different ways. Methodologically, this framework requires us to consider factors that may be particularly

important for understanding differences among immigrant men (e.g., duration of U.S. residence) and exclude those that may be less relevant (e.g., household size).

Theorizing Immigrant Health

The bulk of research on immigrant health has centered on the healthy migrant effect, whereby immigrants arrive in the U.S. healthier than native-born Americans but lose their health advantage over time. As early as the 1970s, studies of Japanese Americans demonstrated a selective migration of healthy individuals and found deteriorating health with increased acculturation in U.S. society (Marmot and Syme 1976). Since then, there has been an explosion in the literature on immigrant health, with the majority of work focused on Mexican immigrants and the perplexing "Hispanic paradox" (good health despite low socioeconomic status). The concept has come under increasing scrutiny in recent years and its efficacy challenged by studies that find considerable variability in the health trajectories of different national-origin groups within broad racial and ethnic categories. Among Hispanics, for example, Mexicans have better health profiles than both Cubans and Puerto Ricans, the latter of which experiences health outcomes that parallel those of U.S.-born black Americans (Rogers et al. 2000; Vega and Amaro 1994). Similarly, among black immigrants, those from Africa exhibit better health outcomes than do those from the Caribbean, with black immigrants from Europe having the worst health (Read and Emerson 2007).

Explanations for these variations have typically fallen into two camps, those that focus on health selection from the countries of origin and those that focus on factors that influence health once immigrants are in the host country. The first camp is more conceptual than empirical because health selection is hard to test due to a lack of quality data in the home country and/or a

lack of access to such data (Read and Emerson 2007). In addition to health selection, immigrants are differentially selected based on education and income, which results in some groups (e.g., Indians) occupying more elite social positions than others (e.g., Mexicans) (Feliciano 2006). The second camp focuses on several complementary arguments related to a decline in positive health behaviors, increase in negative risk-taking behaviors, and the erosion of protective social and cultural factors the longer immigrants are in the United States, all of which contributes to their deteriorating health (Markides and Eschbach 2005; Palloni and Arias 2004). Studies have also highlighted the unequal access of some immigrant groups to healthcare, whether it be due to socioeconomic or occupational differences that limit the availability of health insurance or to cultural differences in how individuals are taught to access care (e.g.,).

More recently, studies have identified interaction with the healthcare system as a critical, yet under-conceptualized, health behavior contributing to U.S. health disparities (Gorman et al. 2010; Read and Reynolds 2012). Utilization is different from access because it gauges the likelihood and frequency of individuals coming into contact with the healthcare system above and beyond access. This is an important concept because much of the data used to discuss the health profiles of America's diverse sub-populations relies on self-reports and doctors' diagnoses. A doctor's diagnosis requires interaction with the system, and some groups are more likely to interact than others, regardless of access. For example, in 2010, U.S.-born men were twice as likely as U.S.-born women to report that they had not seen a doctor in the past year—27 percent compared to 14 percent—and that they had no usual place for care (22 percent compared to 13 percent) despite their being more socioeconomically advantaged on average than women (Schiller et al. 2011). In analyzing these relationships, two recent studies concluded that the well-established gender gap in health (women are sicker than men) and immigrant gap in health

(immigrants are healthier than the U.S.-born) is partly due to the fact that women are more likely than men and immigrants less likely than native-born Americans to interact with the U.S. healthcare system even when differences in access are taken into account (Gorman et al. 2010; Read and Reynolds 2012).

These studies have been informative and highlighted the need for a closer look at healthcare utilization patterns among immigrant women and immigrant men and not just between them. Health-seeking behaviors are gendered and shaped by the expectations and resources that accompany an individual's various social positions (Read and Gorman 2010). For men, pressures to conform to hegemonic ideals of masculinity can result in their reluctance to seek appropriate care—preventative or curative—even when they have access to resources needed for such care (for a review see O'Brian et al. 2005). These pressures can be exacerbated among immigrant men due to the disruption of traditional gender dynamics during migration and efforts to reestablish them in the host country (Parrado and Flippen 2005). Immigrant men are often charged with the economic security of the family, leaving immigrant women responsible for other domains of social life, including the well-being of household members. In this context, obstacles such as lack of health insurance and poor language skills constitute a greater barrier to men than women, whose status within the home and community depends, in large part, on taking care of the family (Read and Oselin 2008).

A recent study on Mexican immigrants provides evidence of the gendered nature of health-seeking behaviors. Gorman and colleagues (2010) found that the healthier profile of recent immigrant arrivals was due in part to lack of contact with the healthcare system, and thus lack of knowledge of their medical ailments. This was truer for immigrant men than women. On arrival, immigrant men were less likely than immigrant women to interact with the healthcare

system, and over time, their likelihood of receiving medical care increased and the gender gap in health closed. Importantly, the study concluded that the declining health of immigrants with increased duration in the U.S. partly reflected limited receipt of medical care among newer immigrants. Although research that examines health disparities between men and women (controlling for national origin/nativity) or between national origin/nativity groups (controlling for gender) has been useful, it may miss important differences in health conditions and behaviors that exist at the intersection of these social locations—among immigrants of the same gender. This study examines this possibility by focusing on immigrant men from the three largest sending countries in the U.S. today: Mexico, China, and India.

Profile of Today's Immigrants

In 2012, roughly one out of every eight Americans was foreign-born (38.2 million), up from only one out of every twenty in 1970 (9.5 million) (U.S. Bureau of the Census 2012). Over the course of the same four decades, the proportion of immigrants born in Europe plummeted from 75.4 percent to 13.7 percent, while the proportion born in Latin American (53.3 percent) and Asia (26.7 percent). The largest sending country by far is Mexico (11.7 million), followed by China (2.2 million), India (1.9 million), and the Philippines (1.8 million) (U.S. Bureau of the Census 2012). While a great deal of immigration literature has focused on the well-being of Mexicans, much less is known about the Indian and Chinese cases (Walters and Trevelyan 2011).

We know that each group has different pre- and post-migration profiles, which likely influences their health. Indian immigrants began arriving in substantial numbers after the passage of 1965 Immigration Reforms, which abolished country quotas limiting the number of racially

and ethnically diverse immigrants to the U.S. and created avenues for those with family or employment in the U.S. (Barringer and Kassebaum 1989). Indian men are highly selected on educational attainment and occupational skills and receive more employment visas than men of any other nationality (Pew Research Center 2012; Whatley and Batalova 2012). Dating back to British colonialism, the English language is widely used in education, government, and business sectors in India. As a result, 70 percent of Indian immigrants in the U.S. report having strong English language skills, compared to only 49 percent of all other immigrants (Whatley and Batalova 2012). They are also highly educated, with 75 percent of immigrant men over the age of 25 having attained a bachelor's degree or higher and only 2.3 percent having attained less than 12 years of education (Hao 2007; Whatley and Batalova 2012). As a result of high levels of English proficiency and educational attainment, Indian males have experienced considerable occupational success. Indian males are concentrated in the IT sector (29 percent) and 21 percent are employed in management, business, or finance (Whatley and Batalova 2012). With 72.9 percent between the ages of 25 to 44, the majority of Indian men are in their working years.

Chinese immigrants have a comparatively longer history in the U.S., beginning with the arrival of male laborers in the 19th century. The Chinese Exclusion Act in 1882 curbed this migration stream, and Chinese immigrants did not migrate to the U.S. again in significant numbers until the 1980s (Zhou 2009). Compared to Indian immigrants, Chinese are more likely to arrive on family reunification visas, contributing to a greater degree of socioeconomic diversity among Chinese immigrants. At the same time, a large number of Chinese immigrants receive employment visas, with 1 in 10 employment visas going to Chinese immigrants every year (McCabe 2012). The prevalence of employment visas among Chinese immigrants results in high educational attainment. For instance, 9.6 percent of Chinese immigrants have less than 12

years of education, and 45.4 percent have attained a bachelor's degree or higher (Hao 2007; McCabe 2012). Nearly two-thirds (63 percent) of Chinese immigrants report having limited English proficiency, which often results in blocked occupational mobility in this population (McCabe 2012; Zhou 2009). The average age of Chinese immigrants is higher that of Indians because many arrive as parents or grandparents of citizens (15 percent are over the age of 65) (McCabe 2012). These older adults generally have limited English language proficiency, lower rates of labor force participation, and lack knowledge about American culture, all of which can lead to isolation and depression (Kim et al. 2011; Treas 2008). Immigrant men who are in the labor force are more likely than Indian immigrant men to be concentrated in physically intensive, lower-wage service occupations, such as restaurant kitchens (Lan 2012; McCabe 2012).

Given these profiles, we might expect considerable diversity in healthcare utilization behaviors and health outcomes among male immigrants, with Indians faring better on average than their Chinese and Mexican counterparts. On the other hand, one could hypothesize little variation across national-origin groups due their shared status as males and immigrants, each of which could result in similar health-seeking behaviors and health outcomes. We examine these possibilities below.

DATA AND METHODS

Data

Data for this study derives from the first wave of the New Immigrant Survey (NIS), which was collected from May 2003 to November 2003. The second wave of the survey occurred in 2007, but these data are not yet available. The New Immigrant Survey is a nationally representative, multi-cohort panel survey of recent U.S. immigrants. The NIS sampled respondents from the electronic records of the U.S. Immigration and Naturalization Services

using four strata based on adult respondent visa category (Massey 2010). To create a sampling frame, the NIS randomly selected an equal number of respondents from the following four visa categories: 1) spouses of U.S. citizens, 2) employed by U.S. businesses, 3) diversity lottery winners, and 4) other visa categories. We omitted respondents with missing information on variables of interest, and we only include adult male immigrants in our analyses. Our final sample contains Mexican (N=429), Indian (N=410), Chinese (N=213), and other male immigrants (N= 2,849), with 3,901 male respondents total. To be clear, our sample includes new arrival immigrants with legal documentation and those with adjusted from temporary or non-legal to legal permanent residency. This excludes most foreign-born students and those without legal status. Survey interviews were conducted in the respondents' language of choice.

Given our research goals and sample characteristics, we made several choices regarding which variables to include in the analyses and how to code them. Specifically, the sample is all male, all immigrant, majority recent arrivals (less than 5 years of U.S. residence), and young (see Table 1). Ancillary analyses not shown here found that including too many variables (i.e., all of the "usual suspects" in health research) resulted in: a) multicollinearity (e.g., age and duration of residence); b) cell sizes that were too small for meaningful interpretation; or c) both. Many of the categorical variables required we dichotomize them in the analyses due to lack of variation in responses and/or small sample sizes. We relied on theory and prior research to drive our decisions on which factors to include based on their relevance to immigrant men's health.

Dependent Measures

The dependent variables in our analysis are health conditions and healthcare utilization. Because a primary goal of the study is to tease out their interrelationships, we also treat

healthcare utilization as an independent variable in various sections of the analyses. We measure health conditions with two variables that tap subjective (self-rated health) and objective (diagnosed medical conditions) dimensions of health status (Gorman et. al 2010). Self-rated health is a dichotomous variable measuring whether an immigrant reported fair or poor health in response to the question "Would you say your health is excellent, very good, fair, or poor?" Although previous research suggests that this measure accurately predicts morbidity, disability, and mortality, studies have also indicates that the correlation between self-rated health and health outcomes may vary by ethnic group (Finch et al. 2002). We measure diagnosed medical condition with a dichotomous variable indicating whether the respondent answered yes to one of the following questions: "Has a doctor ever told you that you have diabetes or high blood sugar" and "Has a doctor ever told you that you have high blood pressure or hypertension." This measure differs from self-reported health as it is dependent on a medical diagnosis, not the respondent's self-perceived health level. The combined responses were necessary due to small sample sizes.

We measure healthcare utilization with two variables that tap interaction with doctors in the U.S. and in the home country. The first is a dichotomous variable indicating whether the respondent answered yes to the question "Aside from any hospital stays, have you seen or talked to a medical doctor about your health, including emergency room or clinic visits in the last 12 months?" As habitually seeing a doctor can impact immigrants' current healthcare usage, we measure respondents' home country healthcare utilization as a binary variable, based on the question: "Before you most recently came to the United States to live, about how often did you see a doctor? Was it more than once a year, about once a year, about once every two years,

seldom, or never?" (1=more than once a year or about once a year; 0=about once every two years, seldom, or never).

Independent Variables

The primary independent variables are ethnicity and duration of U.S. residence. We categorize respondents into one of four categories of origin: Mexico (reference), India, China, or other nationality. Duration of U.S. residence is a binary variable measuring recent immigrants (1=U.S. tenure ≤ 1; 0=U.S. > 1). Our preliminary analyses found that immigrants living in the U.S. for a year or less are qualitatively different than their more settled counterparts. This cut point also allows us to gauge the relative importance of seeing a doctor in the home country for the most recent arrival. In ancillary analyses, we used unadjusted years of U.S. residence in the models, but the results did not change substantively.

The analyses also controls for other sets of factors known to influence health. *Access to healthcare* is foremost among them, and we include four variables to tap this concept, all coded to represent greater access: 1) health insurance; 2) household income; 3) education; and 4) English language proficiency. *Health insurance* measures whether the respondents reported having insurance through a private provider, Medicaid, Medicare, CHAMPUS, or CHAMPS-VA. *Household income* includes all summed wages and tips earned by the respondent and their spouse in 2003 (1= more than $44,000; 0=less than $44,000). If the respondent reported that their spouse was more knowledgeable about household finances than themselves, their spouses were also interviewed about household earnings. Education is measured as a dichotomous variable indicating whether the respondent received a bachelor's degree or higher education (reference=less than bachelor's degree). For both income and education, we ran the models using

low income and low educational attainment and found substantively similar findings. Finally, *English language proficiency* is a known obstacle to care among immigrants, thus we include a dummy variable to account for this possibility (1= speak well or very well; 0=all other). In the models predicting having seen a doctor in the past year, we include a measure to tap the presence of prior health conditions, or healthcare needs. It is a dichotomous variable indicating whether the respondent answered "yes" to the question "Because of a health condition, were you ever confined to bed or home one month or more?"

The analysis controls for risky health behaviors with three dichotomous measures for smoking, drinking, and body mass index. Frequent smokers is a dichotomous variable indicating that the respondent smokes more than one pack of cigarettes every day (1=one or more pack a day; 0= less than one pack a day). Frequent drinker is a dichotomous variable indicating that the respondent reported drinking more than four drinks on four occasions in the past three months. Obese is a dichotomous variable indicating whether the respondent's body mass index is equal to or greater than 30 (1=BMI $\geq$30; 0= BMI <30). We also control for marital status (1=married, 0=unmarried), as it is known to be an important factor in promoting men's healthcare utilization (e.g., Lillard and Waite 1995). Finally, we include the respondent's age in years as a continuous variable in all models.

Results

Table 1 begins by examining differences in health outcomes and healthcare utilization separately by national origin and duration of U.S. residence. As seen in the table, Mexican immigrants (14.1 percent) are significantly more likely than Indian immigrants (3.0 percent) to rate their health as fair or poor but do not differ from Chinese immigrants (11.7 percent) in their

subjective well-being. The rates for Mexican and Chinese immigrants are similar to those found for U.S.-born adult men (12%) (Schiller et al. 2011). Immigrants with more than one year of U.S. residence are more likely than newer arrivals to have poor self-rated health, though the difference is not significant (7.3 percent compared to 5.8 percent respectively). In terms of diagnosed medical conditions, there are no significant differences by ethnicity or duration of residence, with roughly 10 percent of each group reporting being diagnosed with either hypertension or diabetes. This is low, considering that 10 percent of U.S.-born males have been diagnosed with diabetes and 25 percent have been diagnosed with hypertension (Schiller et al. 2011). Patterns in healthcare utilization are more variable, with Indian immigrants more likely (37.8 percent) and Chinese immigrants (15 percent) less likely than Mexican immigrants (22.3 percent) to have seen a U.S. doctor in the past year. Immigrants who have been in the U.S. longer are considerably more likely to have seen a doctor in the past year (35.2 percent) compared to those with less than one year of residence (3.5 percent). However, if one considers utilization practices in the home country, fewer differences exist between shorter- and longer-term immigrants (51 percent compared to 48 percent report having seen a doctor once a year or more in home country).

(Table 1 about here)

Our primary question aims to disentangle the relationships between health outcomes and utilization, while taking into account other factors (e.g., need, access) that might influence their connection. Looking at the need for care, there are few differences by ethnicity and duration of residence, with the exception that Chinese immigrants are significantly less likely than all other groups to have been confined to bed due to a health condition (less than 1 percent compared to roughly 6 percent for both Mexican and Indian immigrants). These figures likely reflect the

selective nature of migration, whereby healthier individuals are more likely to immigrate, and the age distribution of the sample, which is relatively young. In terms of access (or barriers) to care, Indian immigrants look the most advantaged, with higher rates of insurance coverage, educational attainment, English language proficiency, and household incomes relative to Mexican immigrants. Chinese immigrants are also more highly educated than Mexican immigrants, though they report lower levels of English language proficiency, in part because more of them are newer arrivals and older, having come as parents of citizens (Kim et al. 2011). As might be expected, longer-term U.S. residents have greater access to care than do newer arrivals. Looking lastly at background and behavioral characteristics, we see that Mexican immigrants are younger and less likely to be married than Indian and Chinese men. They also have poorer health behaviors, with higher rates of obesity (59.3 percent), alcohol use (6.8 percent), and heavy smoking (13.8 percent a pack or more per day). Newer immigrant arrivals look healthier than longer-term residents with respect to obesity rates and drinking behaviors but do not differ in terms of smoking.

(Table 2 about here)

Because the sample is comprised entirely of immigrants—many of whom have been in the U.S. for less than one year—we compare healthcare utilization patterns in both the home country and in the U.S. and assess their relationships to self-rated health and diagnosed medical conditions (Table 2). Panel A focuses on immigrants with less than one year of U.S. residence and finds a significant association between healthcare utilization and diagnosed medical conditions. Men who report having seen a doctor once a year or more in their home country are significantly more likely to report being diagnosed with hypertension or diabetes (16.3 percent compared to 5.9 percent). Longer-term immigrants are also more likely to have a diagnosed

condition if they saw a doctor once a year or more in their home country (12.2 percent and 9.6 percent) or if they saw a doctor at least once in the past year in the U.S. (15.1 percent and 8.6 percent). The relationship between healthcare utilization and self-rated health is weaker, with no difference in the likelihood of reporting "fair or poor" health among recent immigrants regardless of their having seen a doctor in the home country or in the U.S. Among longer-term immigrants, those who have seen a doctor in the U.S. in the past year are slightly more likely to report being in poor health (9.2 percent compared to 6.2 percent), with no significant difference based on healthcare utilization in home country (6.4 percent compared to 8.1 percent).

(Table 3 about here)

In Table 3, we use multivariate logistic regression models to explore how patterns of home country health care utilization and need and access to care are associated with U.S. healthcare utilization. Model 1 adjusts for age and shows that Indian males are twice as likely as Mexican immigrants to have seen a doctor in the U.S. in the past (OR 2.13), while Chinese immigrants do not differ from them (OR 1.35). However, once we control for access and need of care (Model 2), Indian males do not differ significantly from their Mexican counterparts. The models in columns 2 and 3 indicate that the factors that explain whether or not an immigrant male see a U.S. doctor varies by duration of U.S. residence. For males who have been in the U.S. for one year or less, having health insurance is the only factor associated with increased odds of seeing a U.S. doctor, suggesting a primary barrier to healthcare utilization for newly arrived male immigrants is access. When we limit our sample to immigrants who have lived in the U.S. for more than a year, we observe a more complicated pattern. For these males, regular visits to a doctor prior to migration, being confined to bed due to a health condition, having health insurance, having a bachelor's degree or higher, and a having a household income greater than or

equal to $44,000 are all associated with increased of seeing a doctor in the U.S. during the past year. These findings are important, as they suggest that different factors facilitate healthcare utilization for recent arrivals compared to more established male immigrants.

In a similar vein, we use interactive models to identify which factors are related to Mexican and Indian male healthcare utilization (columns 4 and 5). The sample size for Chinese males was too small for similar analyses. When we limit the sample to Mexican males, results indicate that being insured and English language proficiency are associated with increased odds of visiting a doctor in the U.S., while living in the U.S. for one year or less is associated with decreased odds of U.S. healthcare utilization. In comparison, when we limit the sample to Indian males, our findings suggest that different factors predict U.S. healthcare utilization. Similar to Mexican males, those with insurance have significantly increased odds and recent immigrants have significantly reduced odds of seeing a doctor in the U.S. However, important differences also exist. First, Indian males who annually visited doctors prior to migration have significantly higher odds of using healthcare in the U.S. Second, having ever been confined to bed due to sickness is associated with increased odds of seeing a U.S. doctor for Indian males, which likely reflects the fact that Indian males are more likely than Mexican males to work in occupations that allow for sick days. For instance, the majority of employed Mexican immigrants work in production or transportation (29 percent) or the service industry (25 percent) (Grieco and Ray 2004), while the majority of Indian males are employed in professional occupations such as the IT sector (29 percent) and management, business, or finance (21 percent) (Whatley and Batalova 2012). English language proficiency has no significant impact on U.S. healthcare utilization patterns among Indian males, which contrasts with the findings for Mexican men. This is likely

due to the fact that there is little variation in English ability among Indian males and most have high levels of English proficiency (Whatley and Batalova 2012).

(Table 4 about here)

Tables 4 and 5 next examine whether and how these healthcare utilization patterns translate into differential health outcomes among male immigrants. Table 4 focuses on self-rated health, and Table 5 looks at diagnosed medical conditions. Both tables assess adjusted and unadjusted differences among all male immigrants (columns 1-2), as well as variation by duration of U.S. residence (columns 3-4) and ethnicity (columns 5-6). Model 1 finds that all national origin groups report better self-rated health than Mexican immigrants. In the fully adjusted model, Indian and other national-origin immigrants maintain their advantage, while Chinese immigrants look more similar to their Mexican counterparts (OR 0.84) net of controls for healthcare utilization, need and access to care, and background factors. We also find that seeing a doctor in the U.S. during the past year and need of care increase the odds of reporting poor health two-fold (OR 2.00 and 2.35, respectively). Conversely, factors related to access to care (education, language, income, duration of U.S. residence) are all associated with significantly lower odds of reporting fair/poor health. In columns 3 and 4, we use interactive models based on U.S. duration and find significant ethnic differences in self-rated health. Among newly-arrived immigrants, Indians have significantly reduced odds of reporting fair/poor health relative to Mexican immigrants, while again Chinese males do not differ from them (OR 1.03). Having been confined to bed due to a health condition is associated with higher odds of reporting poor health for both short- and long-term residents (OR 2.92 and 2.05, respectively), while being proficient in English lowers the likelihood of reporting poor health (OR 0.46 and 0.31, respectively). Among longer-term immigrants, healthcare utilization (e.g., seeing a doctor in the

U.S. within the past year) is associated with a significantly increased odds of reporting fair/poor health (OR 2.08), while access to care (e.g., having a bachelor's degree or more, having high income) are both associated with significantly reduced odds of reporting fair/poor health.

(Table 5 about here)

Findings from our interactive models for Mexican and Indian males (columns 5-6) suggest that unique factors are related to reporting fair/poor health for each group. When we limit our sample to Mexican males, seeing a doctor in the U.S. during the past year is associated with significantly increased odds of reporting fair/poor health, and English proficiency is associated with significantly decreased odds of fair/poor health. Our findings are quite different when we limit our sample to Indians males. In contrast to Mexican immigrants, healthcare utilization is not related to reporting fair/poor health, nor is English language proficiency. But being confined to bed for a month or more is associated with a significant increase in the odds of reporting fair/poor health, while having higher income is associated with significantly decreased odds of reporting fair/poor health. Importantly, results from these two models suggest that the factors associated with poor self-rated health among male immigrants varies by ethnicity, and to a slightly lesser extent, by duration of U.S. residence.

(Table 5 about here)

In contrast, Table 5 finds fewer ethnic differences in diagnosed medical conditions and greater consistency in the association to healthcare utilization across national origin and duration of residence groups. As seen in models 1 and 2, Indian, Chinese, and other national-origin immigrants do not differ from Mexican immigrants in their likelihood of being diagnosed with diabetes or hypertension, which is particularly interesting given the differences found for self-rated health. The table also shows that healthcare utilization (in the U.S. and home country) is a

primary factor linked to diagnoses. However, the strength of the relationship varies by duration of U.S. residence. For newer immigrants, what matters most is whether or not they saw a doctor annually in their home country (OR 3.13), while longer-term residents are more affected by having seen a doctor in the U.S. (OR 2.02). For both Mexican and Indian immigrants, seeing a doctor in one's home country is associated with higher odds of receiving a diagnosis (OR 2.99 and 2.30, respectively). Need of care, as defined by having ever been confined to a bed for a month or more due to illness, is also associated with a higher odds of being diagnosed with diabetes or hypertension for Indian immigrants (OR 3.29) but not Mexican (OR 0.97).

Conclusion

Research on immigrant health disparities often focuses on the unequal access of minority groups to healthcare but less in known about the role of healthcare utilization, or the degree to which individuals interact with the healthcare system. Utilization is an important concept because many health conditions require a medical diagnosis for appropriate treatment, such as hypertension or diabetes. While utilization and access are related—access can clear the path to use—they are not the same. Indeed, recent studies indicate that some U.S. groups are more likely than others to come in contact with healthcare system regardless of access (Read and Reynolds 2012). Thus, understanding differences in utilization behaviors is critical for addressing population health disparities.

This paper contributes to this line of inquiry by isolating a population known to have lower levels of utilization in the U.S.—immigrant men—and examining variation in their health profiles by ethnicity and duration of U.S. residence. The analysis finds that the factors shaping healthcare utilization behaviors and health outcomes among immigrant men are both similar to

and different from each other across population sub-groups. They are similar in that social position matters, with the most socioeconomically advantaged having greater access to and utilization of care. Indian immigrants are highly selected on education and income and have health profiles commensurate with their status. Mexican and Chinese immigrant men are less advantaged on all fronts and report worse self-rated health than their Indian counterparts. The findings are also similar in that utilization of care (seeing a doctor in the U.S. or home country) is tied to diagnosed health conditions across groups. In other words, seeing a doctor matters for diseases that require diagnoses.

Social position also helps explain the differences that emerge across groups. Mexican and Indian immigrants are equally likely to report the need for care (bed days due to an illness), but this need is more strongly linked to Indian men's health behaviors and outcomes than Mexican men's (Tables 3-5). This may be due to the fact that Mexican males are much more likely to work in service and labor industries, while Indian males are concentrated in more highly paid professional sectors where there are fewer obstacles to healthcare utilization and where paid sick leave is more common (Grieco and Ray 2004; Whatley and Batalova 2012). Differences in social class may also contribute to the conflicting patterns we find across medical conditions (self-rated health vs. diagnosed diabetes and hypertension). Specifically, Mexican immigrant men are significantly more likely than Indian men to rate their health as fair/poor but are no less likely to be diagnosed with diabetes or hypertension. A lack of economic mobility coupled with poor English language skills and work-related injuries among Mexican males may lead them to feel less healthy (and rate their health as poor), while at the same time, restricts their access to and interaction with healthcare professionals where they might be diagnosed with a medical condition.

The fact that the patterns for self-rated health differ from those for diagnosed medical conditions highlights the multi-dimensional nature of health and the unique situation of immigrant men relative to their U.S.-born counterparts. Immigrant men's self-rated health is nearly identical to that of U.S.-born men, with around 12 percent of both groups reporting fair or poor health. In stark contrast, less than 13 percent of immigrants in our sample reported having been diagnosed with *either* hypertension or diabetes compared to 25 percent of U.S.-born men being diagnosed with hypertension and 10 percent diagnosed with diabetes (Schiller et al. 2011). Medical diagnoses require interaction with healthcare professionals, and U.S.-born men are considerably more likely to have seen a doctor in the past year compared to immigrants—73 percent compared to only 23 percent of immigrants (Table 1). The gap in utilization remains sizable even for longer-term residents (35 percent saw a doctor in the past year).

Healthcare utilization also plays a role in health disparities among immigrants in our sample but cannot explain entirely why Indian immigrant men rate their health as better than Mexican and Chinese men but do not differ from them in their likelihood of being diagnosed with a medical condition. There are several plausible explanations for these patterns. First, the gap in self-rated health may stem from their unequal social locations: Chinese immigrants in our sample are older, have low levels of English language proficiency, and the majority are new arrivals (53.5 percent have been in the U.S. for less than 1 year), all of which might drive down their perceived health. Mexican immigrants are likewise disadvantaged, with the lowest levels of education and income of any group. The gap in self-rated health could also reflect different cultural interpretations of health (Finch et al. 2002), although this is hard to verify with these data and somewhat less plausible given that the rates of reporting poor health for Mexican and Chinese men mirror those found in the general population and other immigrant groups (Gorman

and Read 2006). The lack of national-origin differences in diagnosed medical conditions could also be driven by the age distribution of our sample. The mean age is 40 years or less for all groups except Chinese immigrants (46.5), with commensurate rates of diabetes/hypertension which are quite low relative the U.S. population in general (less than 13 percent compared to at least 27.1 percent of U.S.-born males) (Read and Reynolds 2012).

As with all studies of this type, the findings are not without limitations. The data are based on self-reports which introduces the possibility of response bias, though there is no evidence to suggest that any potential bias would be non-randomly distributed across immigrant groups. In addition, the sample is relatively young and health conditions that afflict immigrants may be better captured in an older population. We attempted to examine this possibility by assessing older immigrants in isolation from their younger counterparts but cell sizes were too small for meaningful analyses. However, the strengths of this study balance these limitations and offer new insight into gendered health disparities by examining behaviors and outcomes among men. There is growing evidence of how migration experiences shape the differential health trajectories of immigrant women relative to men, but less attention has focused on similarities and differences among immigrant men.

Overall, our findings have broader research and policy implications for understanding and improving the health of immigrant men. The harmful effects of social disadvantage on both mental and physical health are well-established (for a review see Read and Gorman 2010). We likewise find that social location matters for immigrant men's well-being, particularly in terms of their self-rated health—a measure known to be highly predictive of morbidity and mortality. As such, policy levers aimed at improving health outcomes in immigrant communities should focus on removing obstacles to healthcare that are tied to social disadvantage, such as English

language proficiency. Irrespective of national origin, immigrants need to be able to understand and communicate in their native language or in English to navigate an increasingly-complicated U.S. healthcare system. Clearing the path to effective communication for patients and healthcare providers will become increasingly critical as the U.S.'s immigrant population continues to grow and diversify in the coming years.

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Table 1. Descriptive Statistics for Male Immigrants, NIS 2003 (n=3,902)

	All (%)	Mexican (%)	Indian (%)	Chinese (%)	U.S. Tenure ≤1 year	U.S. Tenure >1 year
Health outcomes						
Fair/poor self-rated health	6.7	14.1	3.0*	11.7	5.8	7.3
Diagnosed with diabetes or hypertension	10.9	10.1	13.0	12.2	10.9	10.9
Healthcare utilization						
Seen doctor in U.S. in past year	22.8	22.3	37.8 *	15.0*	3.5	35.2 +
Seen doctor once a year or more in home country	49.8	41.0	60.0*	42.3	48.0	51.0
Need of care						
Ever confined to bed for one month or more due to health condition?	4.6	6.3	5.9	0.9 *	4.3	4.7
Access to care						
Insured	51.5	51.6	73.7*	47.9	27.9	66.7+
Bachelor's degree+	41.0	6.6	82.6*	43.7 *	35.8	44.3+
Proficient in English	59.0	43.1	89.2*	34.3*	43.8	68.9+
U.S. Tenure ≤ 1 year	39.3	15.0	20.6*	53.5*	100.0	0.0
Income ≥ $44,000	49.8	34.3	67.8*	44.7 *	25.1	55.1+
Background factors						
Married	70.0	74.5	91.4*	86.4*	62.8	74.7 +
Obese	45.3	59.3	53.3	22.1*	33.0	53.2+
Smokes one + pack a day	14.4	13.8	7.9 *	16.9	14.6	14.3
Drank 4+ drinks on four occasions in past 3 months	4.5	6.8	1.2 *	1.4 *	2.3	5.9 +
Age in years, mean	39.2	38.3	40.0	46.5 *	39.8	38.8
N	3,902	428	410	214	1,529	2,373

* Significantly different from Mexican immigrant men at $p < .05$.
+ Significantly different from U.S. tenure ≤1 year at $p < .05$.

Table 2: Percentage of Immigrant Men Experiencing Poor Health Outcomes by Healthcare Utilization and U.S. Tenure, NIS 2003

	Panel 1: Lived in US 1 year or less				Panel 2: Lived in US More than 1 year			
	Seen doctor in US at least once in past year		Seen doctor once a year or more in home country		Seen doctor in US at least once in past year		Seen doctor once a year or more in home country	
	Yes	**No**	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**
Fair/poor self-rated health	5.56	5.71	6.70	4.79	9.16**	6.22	6.41	8.13
Diagnosed with hypertension or diabetes	16.67	10.68	16.28***	5.93	15.06***	8.64	12.16*	9.60
N	450	1062	734	795	890	1427	1194	1123

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Table 3: Odds Ratios of Seeing a Doctor in U.S. Within the Past Year,[1] NIS 2003

	Model 1	Model 2	U.S. Tenure ≤1 year	U.S. Tenure >1 year	Mexican	Indian
Nationality (Mexican)						
Indian	2.13***	1.26	2.36	1.19		
	(0.15)	(0.18)	(0.95)	(0.18)		
Chinese	1.35	0.84	1.71	0.78		
	(0.19)	(0.25)	(0.93)	(0.27)		
Others	1.45**	1.20	2.31	1.15		
	(0.12)	(0.13)	(0.74)	(0.13)		
Healthcare Utilization						
Saw doctor in U.S. in past year		1.31**	1.29	1.34**	0.93	1.83*
		(0.09)	(0.29)	(0.09)	(0.26)	(0.25)
Saw doctor at least once a year in home country		2.08***	1.29	2.23***	1.04	5.06**
Need of care		(0.19)	(0.62)	(0.20)	(0.49)	(0.60)
Ever confined to bed for one month or more due to health?		2.72***	2.63***	2.73***	2.01*	5.99***
Access to care		(0.11)	(0.29)	(0.11)	(0.27)	(0.53)
Insured		1.19	0.84	1.26*	0.51	2.22
		(0.11)	(0.30)	(0.11)	(0.52)	(0.61)
Bachelor's degree+		1.17	1.27	1.14	2.48***	3.81
		(0.11)	(0.30)	(0.12)	(0.27)	(1.18)
English proficiency		0.10***			0.08*	0.19*
		(0.15)			(1.03)	(0.68)
U.S. Tenure ≤ 1 year		1.24*	1.11	1.24*	1.11	1.47
		(0.10)	(0.31)	(0.10)	(0.26)	(0.38)
Income ≥ $44,000		1.02	1.00	1.03	1.63	1.15
		(0.10)	(0.30)	(0.11)	(0.31)	(0.44)
N		3,902	1,529	2,373	428	410

[1]All models control for age, marital status, and health behaviors.
* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Table 4. Odds Ratios Predicting Fair/Poor Health,[1] NIS 2003

	Model 1	Model 2	U.S. Tenure ≤1 year	U.S. Tenure >1 year	Mexican	Indian
Nationality (Mexican)						
Indian	0.17***	0.47*	0.22*	0.76		
	(0.34)	(0.35)	(0.71)	(0.42)		
Chinese	0.51*	0.85	1.03	0.71		
	(0.28)	(0.29)	(0.43)	(0.46)		
Others	0.38***	0.60**	0.62	0.65*		
	(0.18)	(0.18)	(0.36)	(0.20)		
Healthcare Utilization						
Saw doctor in U.S. in past year		2.00***	1.30	2.08***	2.55*	1.67
		(0.17)	(0.68)	(0.18)	(0.39)	(0.80)
Saw doctor at least once a year in home country		1.08	1.32	0.97	1.16	1.64
		(0.14)	(0.25)	(0.17)	(0.32)	(0.68)
Need of care						
Ever confined to bed for one month or more due to health?		2.35***	2.92*	2.05*	2.23	8.85**
		(0.25)	(0.45)	(0.31)	(0.54)	(0.78)
Access to care						
Insured		1.13	0.84	1.27	0.81	3.49
		(0.15)	(0.29)	(0.19)	(0.35)	(1.02)
Bachelor's degree+		0.66*	1.14	0.53**	0.41	0.89
		(0.18)	(0.32)	(0.24)	(1.07)	(1.05)
English proficiency		0.37***	0.46*	0.31***	0.49 +	0.84
		(0.17)	(0.32)	(0.21)	(0.40)	(1.38)
U.S. Tenure ≤ 1 year		0.57***	--	--	0.67	0.46
		(0.17)	--	--	(0.44)	(1.06)
Income ≥ $44,000		0.65**	0.72	0.64*	0.62	0.20 +
		(0.17)	(0.34)	(0.19)	(0.39)	(0.83)
N		3902	1529	2373	428	410

[1]All models control for age, marital status, and health behaviors.
+ p < 0.10 * p < 0.05 ** p < 0.01 *** p < 0.001

Table 5. Odds Ratios Predicting Diagnosed Diabetes/Hypertension,[1] NIS 2003

	Model 1	Model 2	U.S. Tenure ≤1 year	U.S. Tenure ≥1 year	Mexican	Indian
Nationality (Mexican)						
Indian	1.54	1.34	1.23	1.54		
	(0.24)	(0.24)	(0.44)	(0.30)		
Chinese	0.98	0.88	1.33	0.43		
	(0.29)	(0.28)	(0.41)	(0.52)		
Others	1.34	1.25	1.15	1.35		
	(0.19)	(0.18)	(0.34)	(0.22)		
Healthcare Utilization						
Saw doctor in U.S. in past year		1.96***	1.96	2.02***	1.45	0.68
		(0.14)	(0.44)	(0.15)	(0.50)	(0.41)
Saw doctor at least once a year in home country		1.69***	3.13***	1.16	2.99**	2.30*
		(0.12)	(0.20)	(0.15)	(0.39)	(0.36)
Need of care						
Ever confined to bed for one month or more due to health?		0.92	1.22	0.69	0.97	3.29*
		(0.25)	(0.41)	(0.34)	(0.76)	(0.54)
Access to care						
Insured		1.06	0.93	1.16	0.71	2.15
		(0.13)	(0.21)	(0.17)	(0.42)	(0.49)
Bachelor's degree+		0.98	1.04	1.01	1.38	0.49
		(0.13)	(0.21)	(0.18)	(0.75)	(0.49)
English proficiency		0.83	1.14	0.66	0.60	1.00
		(0.14)	(0.21)	(0.18)	(0.51)	(0.62)
U.S. Tenure ≤ 1 year		1.004	--	--	0.88	0.85
		(0.14)	--	--	(0.50)	(0.50)
Income ≥ $44,000		0.87	0.91	0.92	1.02	0.88
		(0.13)	(0.22)	(0.16)	(0.45)	(0.44)
N		3,902	1,529	2,373	428	410

[1]All models control for age, marital status, and health behaviors.
* p < 0.05 ** p < 0.01 *** p < 0.001