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Abstract

Background: Immigrants comprise approximately 13% of the US population and 33% lack health coverage. Asian Americans are the fastest growing immigrant group; many lack a usual source of care. This study examines factors associated with health insurance among Asian American immigrants living in New York City.

Methods: Community needs assessments were conducted among Asian American subgroups in New York City from 2013- 2015; analysis was completed in 2017 and 2018. Descriptive statistics examined factors associated with health insurance status while stratifying by Asian ethnic subgroup; multivariable logistic regression models further assessed these associations ($P < 0.05$ significance level).

Results: Approximately 19% of the study population ($n=1,399$) was uninsured. Logistic regression models adjusted for all factors. Among East Asians, insurance status was associated with female sex ($OR=2.8$, $p=0.005$), excellent/very good health status ($OR=3.5$, $p=0.014$), and seeing a private doctor when sick or injured ($OR=3.2$, $p=0.033$). Among South Asians, insurance status was associated with high school/some college and college education ($OR=2.6$ and 2.9 , respectively, $p=0.039$ and $p=0.021$), having a routine health check in the past year ($OR=6.4$, $p < 0.001$), no diabetes diagnosis ($OR=2.7$, $p=0.030$), and a tuberculosis diagnosis ($OR=4.7$, $p=0.019$). Among Southeast Asians, insurance status was associated with less than high school education ($p < 0.05$), living in the US > 20 years ($OR=3.7$, $p=0.009$), having a routine health check in the past year ($OR=5.6$, $p=0.025$), and seeing a private doctor when sick or injured ($OR=2.6$, $p=0.018$).

Conclusions: Health insurance status was associated with differing factors among each subgroup. Findings may inform strategies to address challenges and barriers of healthcare access to immigrants, making healthcare more accessible to this underserved population.

Key words: health disparity research; racial/ethnic minority; health insurance; Asian Americans; immigrants

Introduction

In 2013, approximately 13% of the US population was a first generation immigrant, and an additional 12% was a second generation immigrant [1]. Asian Americans comprised 29.5% of foreign-born individuals [2]. Additionally, between 2000 and 2015, the Asian American population grew 72%, the fastest growth of any major racial/ethnic group [3]. The Asian American population is incredibly diverse, varying in nativity, migration patterns, language, education, socioeconomic status, and access to health resources [4-6]. However, data on Asian Americans often remains aggregated, masking key subgroup differences [7].

Health care in the US exceeds that in other high-income countries, despite the fact that the US does not have publicly financed universal health care [8]. Immigrants are less likely to access and use health care when compared to the US native-born population [9, 10]. In 2009, 33% of the foreign-born population was uninsured, while 12.5% of the native-born population was uninsured [11]. Similar findings have been shown for Asian Americans; data from the 2003-2005 National Health Interview Survey found that US-born Asians were more likely to be insured than foreign-born Asians [12]. In 2012, it was estimated that as many as 6 million immigrants could be potentially helped through universal health coverage [13].

Many of the key provisions from the 2010 Patient Protection and Affordable Care Act (ACA) began in October 2013, and by 2016 major changes in insurance rates were seen [14]. The best information on health insurance coverage among Asian American subgroups in New York City (NYC) comes from the U.S. Census Bureau American Community Survey (ACS). In NYC, immigrants can qualify for health insurance coverage without waiting periods, regardless of time lived in the US [15]. In 2014, uninsurance rates were highest among Koreans (21.7%), followed by Chinese (12.8%), Bangladeshis (12.1%), Asian Indians (11.5%), and Filipinos

(10.0%), compared to 8.7% among whites. Additionally in NYC, overall uninsurance rates decreased from 14.8% in 2010 to 7.8% in 2016. Drops in uninsurance rates were also seen for major Asian ethnic groups, with the largest decrease seen for Koreans, with a change from 28.0% to 10.7% during this time period [16].

Due to their lower levels of coverage, Asian Americans are less likely to have a usual source of care compared to non-Hispanic White Americans [17]. Moreover, poor health outcomes are common among immigrant subgroups due to cultural, linguistic, and socioeconomic barriers in accessing health care services [18-21]. A small qualitative study found that foreign-born Asian Indians tend to be unfamiliar with routine care for disease prevention when immigrating to the US, and chronic diseases are only discovered when emergency services are utilized [22]. Moreover, having a usual source of health care varies by Asian ethnic group, while having insurance was the only common pathway for all Asian groups [17].

A lack of health insurance coverage is both a social concern and policy issue, as having health insurance drives healthcare seeking behaviours across the population [18, 17] and health insurance coverage is strongly associated with screening outcomes such as flu vaccination and cancer screening (e.g. breast, cervical, and colorectal) [18, 23-25]. The ACA aimed to increase access to care and improve health outcomes for disadvantaged populations, however disparities continue to persist [18, 17, 20]. The objective of this study is to identify factors associated with health insurance status in an Asian American population of NYC using cross-sectional survey data collected between 2013 and 2015, a key time when the ACA was being implemented across the US, while stratifying by Asian American ethnic subgroup.

Methods

Sample and study population

The Community Health Resources and Needs Assessment (CHRNA) was a cross sectional survey collected by the NYU Center for the Study of Asian American Health (CSAAH). The survey was community-based and was administered in-language among individuals self-identifying as Asian American living in the NYC metropolitan region between the years 2013 and 2015, with most surveys completed in 2014 (69.6%) and 2015 (28.2%). Survey methods have been previously described [26].

Participants of Asian descent were recruited through community-based convenience sampling in partnership with Asian American-serving community organizations across the metropolitan New York area. The survey was conducted during community events such as religious and cultural festivals, health fairs, and informational events. All participants were residents in the NYC metropolitan area and were aged 18-85 years. A health interview survey using validated questions was used to collect details of participant demographics, health status, healthcare access, and presence of risk factors for non-communicable diseases.

Key Measures

The outcome variable was health insurance status, determined using answers to the following question: “What kind of health insurance do you have?” Responses were grouped into two categories for the purposes of the analysis: Insured (those who responded that their health insurance was through Medicaid, Medicare, Family Health Plus, Child Health Plus, private, work or company insurance, or other) and uninsured (those who responded “no health insurance”). Participants who stated that they didn’t know what kind of health insurance they had or who declined to state an answer were excluded from this study.

Control Variables

Socio-demographic variables included: Asian ethnic group (South Asian: Bangladeshi, Asian Indian, Himalayan, Pakistani, or Sri Lankan; East Asian: Chinese, Japanese, or Korean; and Southeast Asian: Cambodian, Filipino, Vietnamese, Indonesian, Thai, or Burmese); sex, age groups (continuous for logistic regression), US nativity, English spoken fluency, education, income, employment, and income. Additional health variables included: general health status, lack of accessibility to necessary healthcare in the last 12 months, last routine health check-up, health seeking behaviour when sick or injured, self-reported high cholesterol, self-reported diabetes, self-reported high blood pressure, self-reported tuberculosis, self-reported hepatitis B, and self-reported mental health related problems.

Statistical Analyses

All analyses were stratified by Asian ethnic group (East Asian, South Asian, and Southeast Asian). Descriptive statistics were computed for demographics and all other variables included in the study. To examine the association between each independent variable and health insurance status, bivariate analyses were conducted; Chi-square tests determined statistical significance at $p < 0.05$. Multivariable logistic regression was used to examine the independent association of the variables of interest with health insurance status in each of the three Asian ethnic subgroups. Any variables that were significantly associated with health insurance status in bivariate analyses were entered into the models in two steps; model 1 includes demographic variables, while model 2 (fully adjusted) also includes health characteristics. When running descriptive statistics, individuals replying “don’t know” or who refused to answer were excluded

from the denominator, unless stated elsewhere. IBM SPSS version 23.0 (Armonk, NY) was used in 2017 and 2018 to conduct analyses.

Data collection was approved by the NYU School of Medicine Institutional Review Board as an exempted human subjects study. This secondary data analysis was approved by the University of Warwick Biomedical and Scientific Research Ethics Sub-committee.

Results

Of 1,579 participants, 61 were excluded due to missing data on their health insurance status. An additional 119 individuals were born in the US, and further excluded from analysis. Table 1 provides descriptive results for all the variables included in the analysis. A total of 1,399 participants remained for inclusion in this study. The sampled population was stratified by Asian ethnic subgroup and insurance status. The East Asian subgroup consisted of 426 participants (82% insured), the South Asian subgroup consisted of 576 participants (82% insured), and the Southeast Asian subgroup consisted of 397 participants (79% insured). See Table 1.

Table 1 presents socio-demographic differences in insurance status stratified by Asian ethnic subgroup. Length of stay in the US was significant for all groups; individuals living in the US for longer were more likely to have health insurance. Among East Asians and Southeast Asians, individuals of a younger age (18-44) were significantly less likely to be insured than those of an older age.. Additionally, among East Asians, individuals who were working were significantly more likely to be insured than those who were not working. East Asians with a higher education were significantly more likely to have health insurance; however, Southeast Asians with a higher education were significantly less likely to have health insurance. Similar differences were seen between East Asians and Southeast Asians; English fluency and income

had significant associations with insurance in each group, but the directional changes differed. Additional socio-demographic findings can be found in Table 1.

Table 2 presents health-related differences in insurance status stratified by Asian ethnic subgroup. Last routine health check was significant for all groups; individuals having had a check in the past year were significantly more likely to have insurance than those having a check in more than a year or never. General health status was associated with insurance status among East Asians and Southeast Asians; among East Asians, individuals self-reporting excellent/very good health were significantly more likely to be insured, while among Southeast Asians, individuals reporting fair/poor were significantly more likely to be insured. East Asians and Southeast Asians who reported seeing a private doctor when sick or injured were significantly more likely to be insured than those reporting other health sources. Additionally, South Asians self-reporting a high cholesterol diagnosis, diabetes diagnosis, or a tuberculosis diagnosis were significantly more likely to be insured compared to those who did not self-report that health diagnosis, and Southeast Asians self-reporting a high blood pressure diagnosis were significantly more likely to be insured compared to those who did not report that diagnosis.

Table 3 presents the results of the multivariable logistic regression models stratified by Asian ethnic subgroup. Results differed by Asian ethnic subgroup.

East Asians

In model 1 adjusting for all socio-demographic factors, women were 2.0 times more likely than men to be insured (CI: 1.1-3.6, $p=0.015$), older individuals were more likely to be insured (OR: 1.02, CI: 1.00-1.05, $p=0.042$), individuals living in the US for greater than 20 years were 4.7 times more likely than individuals living in the US for ≤ 5 years to be insured (CI: 1.7-

13.3, $p=0.004$), and individuals speaking English very well were 6.1 times more likely than individuals speaking English not well/not at all to be insured (CI: 1.2-29.9, $p=0.026$). When adjusting for additional health-related factors (model 2), female sex remained significant (OR:2.8, CI: 1.4-5.6, $p=0.005$), while individuals self-reporting excellent/very good health were 3.5 times more likely than individuals reporting fair or poor health to be insured (CI: 1.3-9.7, $p=0.014$), and individuals who went to a private doctor when sick or injured were 3.2 times more likely than individuals doing nothing or taking medicine at home to be insured (CI: 1.1-9.7, $p=0.033$).

South Asians

In model 1 adjusting for all socio-demographic factors, individuals with a college education were 2.1 times more likely, and individuals with a high school/some college education were 2.0 times more likely than individuals with less than a high school education to be insured (CI: 1.1-4.5, $p=0.021$ and CI: 1.0-3.8, $p=0.039$, respectively), and individuals living in the US for greater than 20 years were 2.7 times more likely than individuals living in the US for ≤ 5 years to be insured (CI: 1.1-6.7, $p=0.033$). When adjusting for additional health-related factors (model 2), education remained significant; individuals with a college education were 2.9 times more likely and individuals with a high school/some college education were 2.6 times more likely than individuals with less than a high school education to be insured (CI: 1.3-6.3, $p=0.009$ and CI: 1.2-5.5, $p=0.011$, respectively). In addition, individuals receiving a routine health check in the last year were 6.4 times more likely than individuals never receiving a health check to be insured (CI: 2.3-17.9, $p<0.001$), individuals not receiving a diabetes diagnosis were 2.7 times more likely than those receiving a diabetes diagnosis to be insured (CI: 1.1-6.6, $p=0.030$), and individuals

receiving a tuberculosis diagnosis were 4.7 times more likely than those not receiving a tuberculosis diagnosis to be insured (CI: 1.3-17.2, $p=0.019$).

Southeast Asians

In model 1 adjusting for all socio-demographic factors, females were less likely than males to be insured (OR=0.5, CI: 0.3-0.9, $p=0.017$), individuals with a college education and individuals with a high school/some college education were less likely than individuals with less than a high school education to be insured (OR: 0.3, CI: 0.1-0.9, $p=0.035$ and OR: 0.3, CI: 0.1-1.0, $p=0.049$, respectively), and individuals living in the US for greater than 20 years were 4.4 times more likely than individuals living in the US for ≤ 5 years to be insured (CI: 1.8-10.6, $p=0.001$). When adjusting for additional health-related factors (model 2), gender and years in the US remained significant; females were less likely than males to be insured (OR=0.4, CI: 0.2-0.8, $p=0.007$), and individuals living in the US for greater than 20 years were 3.7 times more likely than individuals living in the US for ≤ 5 years to be insured (CI: 1.4-9.1, $p=0.009$). In addition, individuals receiving a routine health check in the last year were 5.6 times more likely than individuals never receiving a health check to be insured (CI: 1.2-25.2, $p=0.025$), and individuals who went to a private doctor when sick or injured were 2.6 times more likely than individuals doing nothing or taking medicine at home to be insured (CI: 1.2-5.9, $p=0.018$).

Discussion

Health insurance coverage was low in this population; overall, approximately 19% of this Asian American population was uninsured, with the highest rate seen among Southeast Asians (22%). It is likely that uninsurance rates in this Asian population are high because much of the

data was collected in the year 2014, before changes from the ACA became reachable for all individuals. After passage of the ACA, a drop in uninsured status by racial/ethnic groups over time has been shown [27], and changes can also be seen among Asian American subgroups when looking at American Community Survey data by year [28]. However, uninsured rates among particular Asian American groups (Korean and Vietnamese, for instance), remain higher than uninsured rates for whites; in 2014, 11.7% of whites were uninsured, compared to 13.6% of Koreans and 12.6% of Vietnamese [27, 28]. Similar findings have been shown in NYC, where all major Asian ethnic subgroups saw a decrease in uninsurance status before and after the ACA, yet uninsurance rates remain high among Koreans (17.1% - 2015 and 10.7% - 2016) [16]. When examining uninsurance rates in our data, the highest were seen among Indonesians (40.0%), Thai (38.9%), and Koreans (30.5%), while the lowest were seen among Japanese (5.4%), Burmese (6.8%), and Cambodians (7.1%). In comparison, the overall uninsurance rate in NYC for 2016 was 7.8% [16]. These findings further emphasize the need to disaggregate Asian American data in NYC and elsewhere [7].

Women were more likely to be insured than men among East Asians (both models) and South Asians (model 1). Previous studies have found that women are more likely than men to utilize healthcare services [29, 30], and future research should examine differences in health insurance coverage among Asian American subgroups.

Older East Asian adults were more likely to be insured before adjusting for all health-related factors. The fact that younger adults in these groups were less likely to be insured may be due to the fact that they are more likely to view themselves in good or excellent health [17]. A nationally representative sample of US adults found that younger individuals were less likely to have health insurance [31]. Acculturation may also explain healthcare coverage [19], as more

recent immigrants may be less likely to engage in healthcare due to factors such as immigrant status and language proficiency [18]. From our findings, individuals who had lived in the US for greater than 20 years (model 1 East Asians and South Asians; model 1 and fully adjusted model for Southeast Asians) were more likely to have insurance coverage than individuals living in the US for ≤ 5 years. A previous study found a mediating effect of health insurance between length of time in the US and health status [32]; future research should examine the association between time in the US, health insurance, and health status among immigrant populations.

English proficiency was associated with insurance among East Asians before adjusting for all health-related factors; other studies have found language to be an important barrier to utilizing the health care system and understanding necessary information about insurance [18, 17, 19]. However, speaking English very well was only significant among East Asians in model 1.

Previous studies have shown that higher levels of education are associated with health behaviors [33], but there is not a direct link between education and health insurance. Individuals with lower income (which often correlates with lower education) can qualify for low-cost insurance through Medicaid [34]. In our analysis, we found that higher education levels were associated with insurance among South Asians, but lower education levels were associated with insurance coverage among Southeast Asians. Comprehension and understanding healthcare services likely increases the likelihood of engaging in these services and having a usual source of care, which could be attributed to both English fluency and education [17].

Income was not significantly associated with insurance status when placed in our models; this is inconsistent with the Medicaid coverage criteria of insuring individuals up to 138% of the federal poverty level [20, 35]. Individuals earning over the average income are more likely to be

uninsured, coinciding with the theory that the “Cadillac Tax” disproportionately affects families earning \$38,000-100,000 [36]; in Table 1, we found that individuals making greater than \$55,000 were more likely to be insured. A limitation of our study was that income was not reported by 20-30% of individuals; a new category was created to capture any individual refusing to report income or reporting “don’t know.”

It is likely that employment type may also be a better demographic indicator; however, employment (working vs. not working) was not significant once in regression models and was not included). Previous research suggests that type of employment (e.g. self-employed, blue collar, service industry) may impact access to health insurance. For example, a study examining Asian Americans in the 2005-2012 California Health Interview Survey (CHIS) found that Asian Americans who owned or worked for small businesses were significantly less likely than those who worked for large companies to be uninsured (25% vs. 7%); Additionally, large variations existed between Asian subgroups [37]. Previous research has suggested that employment type may be related to access and type of health insurance [38-40]. Future research should capture type of work in order to better understand insurance by job category.

As part of the ACA, programs have been implemented to improve the management of chronic diseases. In our population, self-reporting of diabetes was inversely associated with insurance status and self-reporting for tuberculosis was positively associated with insurance status among South Asians. Other chronic conditions were no longer significant when placed into logistic regression models. However, insurance and access to healthcare is important in identifying risks for chronic diseases early, as diabetes and hypertension rates are increasing among many Asian American subgroups [41]. Insured respondents are more likely to be screened by their doctors for chronic diseases and those without insurance are less likely to be

up-to-date with their chronic disease screenings [35, 42]. Preventive care such as routine screening and vaccinations are effective in reducing chronic conditions, which can significantly cut healthcare costs in the long run [43]. We found that having a recent routine check-up in the past year was significantly associated with health insurance among South Asians and Southeast Asians, while visiting a private doctor when sick or injured was significantly associated with health insurance among East Asians and Southeast Asians, suggesting that having health insurance provides a greater opportunity for these groups to seek needed care.

Limitations

Several limitations in this study should be noted. The study sample was collected through community-based convenience sampling in NYC, thus our sample is not generalizable to other Asian populations in NYC or elsewhere. Additionally, much of the published literature on insurance status among Asian Americans has focused on California [17, 37, 38, 23, 44, 40, 24] or national datasets [45, 41, 18, 46, 35, 6, 43, 39, 47, 32, 10, 12]; it is difficult to compare our findings to Asian groups in these studies. Similarly, health insurance guidelines are different outside of New York State, and immigrants in other locations often have a five-year waiting period for public insurance eligibility [15, 13]. Second, the results are based on self-reported information from the respondents and are therefore subjected to recall and reporting bias and subsequent threats to reliability. Third, this study is cross-sectional and most of the data was collected in 2014. Because changes from the ACA were really seen beginning in 2015 and 2016, we cannot take ACA enrolment into account. Finally, variables such as income and employment do not contain adequate information to describe the demographics of this population. -

Despite the limitations, this study is novel in that sample includes Asian American subgroups often underrepresented in existing local and regional surveys, allowing for disaggregated analysis by a larger Asian ethnic subgroup. Understanding differences in insurance status by Asian subgroup is key in addressing Asian American health disparities, since different subgroups may require varying strategies to increase both insurance coverage and access to healthcare. In addition, health insurance access differs by state; thus policymakers must understand not only differences within Asian American subgroups, but also differences in qualifying for health insurance coverage. Results from this study may have important implications for future health reform efforts. For example, there is a need to target more recent Asian American immigrants across all of the groups, but extra effort may be required among East Asians who do not speak English well. Future research should examine Asian subgroup differences that further disaggregate by Asian subgroup; unfortunately, our sample was not large enough to do this, but differences in insurance status were identified by more detailed Asian American subgroup.

In conclusion, this study found health insurance status to be associated with various factors in these Asian American subgroups, with differing factors among each subgroup. This study provides insight into the association between demographic factors and health insurance status of immigrants in a privatized healthcare system. Findings may inform strategies to address challenges and barriers of healthcare access to immigrants, making healthcare more accessible to this underserved population.

Compliance with Ethical Standards

Funding: This publication is supported in part by the National Institute for Health Research Collaboration for Leadership in Applied Health Research and Care West Midlands Initiative, the National Institutes of Health – National Institute on Minority Health and Health Disparities award number U54MD000538, and the National Center for Advancing Translational Sciences award number UL1TR001445. The content is solely the responsibility of the authors and does not necessarily represent the official views of the funding agencies.

Conflict of interest: Ms. Tan declares that he has no conflict of interest. Ms. Wyatt declares that she has no conflict of interest. Ms. Kranick declares that she has no conflict of interest. Dr. Kwon declares that she has no conflict of interest. Dr. Oyebode declares that she has no conflict of interest.

Ethical Approval: This article does not contain any studies with human participants or animals performed by any of the authors.

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