THE INTERACTION OF CITIZENSHIP AND HEALTH INSURANCE COVERAGE IN THE UNITED STATES

A THESIS

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By

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Introduction

In the United States of America, significant disparities in health inequality persist. According to the National Library of Medicine (McCartney, Popham, McMaster, & Cumbers, 2019), health inequality is a result of systemic, unjust, and avoidable social and economic practices that lead to vast differences in health status, healthcare access, and ultimately healthcare outcomes, among different population groups. It stems from the inequal power between different demographics and unequal distribution of power and resources. Non-citizens especially face challenges trying to access healthcare and maintaining good health outcomes. Research has established that non-US citizens face significant barriers when accessing healthcare, such as criminalization policies, income inequality, and eligibility restrictions on Medicaid and CHIP, all contributing to this health disparity (Young, Beltrán-Sánchez, & Wallace, 2020); (Maskileyson, 2019); (Leiyu Shi, 2001); (Prentice, Pebley, Sastry, 2005); (Acevedo-Garcia, Stone, 2008). Non-citizens are 4.3 times less likely to have regular health insurance compared to citizens (Pryde, 2017). The lack of access to healthcare has serious consequences on health outcomes as well as quality of life. On top of this, immigrant criminalization policies lower odds of non-citizens having health care due to perceived government surveillance, policing, and enforcement, particularly affecting undocumented individuals. Furthermore, immigrants from countries with higher income inequality often experience faster decline in health over time after arriving in the United States. This decline is due to the long-lasting harmful effects of early exposure to high income inequality and lower skill transferability in the U.S. labor market, which often leads to employment in low paying and riskier jobs. (Maskileyson, 2019). Lack of citizenship is often paired with eligibility restrictions on Medicaid and CHIP which is a fundamental cause of health disparities for both non-citizens and children of mixed citizen status families.

For US citizens, educational attainment is another important factor when assessing access to health insurance. Generally, individuals with higher education have better access to health coverage, specifically to employer-sponsored insurance. Those employed in industries with higher educated employees, have a greater likelihood of higher compensation including health insurance benefits. Dewar's study shows a positive coefficient (0.0568) suggesting that as an individual's level of education increases, the probability of employer-sponsored health insurance also increases. (Dewar, 1998). A study on Asian subgroups in the United States found that lower education and income consistently leads to less coverage. On top of this, citizenship was found to be associated with insurance across all subgroups. Noncitizen Asians were twice as likely to lack insurance compared to US-born individuals from the same population sample (Huang, Carrasquillo, 2008). However, the relationship between education and health insurance in the context of general citizenship status remains largely understudied.

While there is ample evidence that these health disparities among non-citizens exist compared to their US citizen counterparts, there are still gaps in knowledge and research to be addressed. Specifically, there is a need for a deeper understanding of how social determinants, especially education, of health relate to citizen status and lead to various health outcomes. There is limited research on how social factors work in unison and how this combined effect may differ based on citizenship status.

This thesis will develop research on potential targeted policies that address the unique needs that non-US-citizens face when trying to access healthcare in the United States. I will investigate the question "How do the Social determinants of health, such as education and income, interact with citizenship status to influence health coverage disparities among non-US-citizens?"

This research is important for social justice as it recognizes the right of all individuals living in the United States of America, despite their citizenship status, to access the resources and opportunities needed for their health and well-being. This will give insight to the broader social factors that contribute to health inequality and help identify specific areas in which policies can be targeted to reduce these health disparities. Through exploring the data, suggestions toward promoting health equity and overall health status of non-citizens can be improved.

To approach this question, the study will draw upon census and survey data sourced from IPUMS USA. This quantitative approach will examine the relationship between social determinants of health, citizenship status and health outcomes.

Literature Review

There is ample research indicating there are significant health disparities among different demographic groups in the US such as race, income, and citizenship status. Social, political, economic, and environmental contexts can lead to inequality, but these factors are complex and evolving. A study on the "Root Causes of health inequity" 2019, found that racism, discrimination, and concentrated poverty disproportionally impact minorities and low-income populations, leading to worse health outcomes. Racism and discrimination negatively impact health through pathways such as stress and reduced access to resources like healthcare. Education, income, wealth, employment, and physical environment play a larger role in shaping health outcomes, more than medical care itself, disadvantaged communities face inequities across these social determinants. Unsurprisingly residential segregation as well as mass incarceration of disadvantaged communities perpetuate cycles of poor health. In order to promote health equity, the authors suggest addressing these

compounding and cyclical root causes (Baciu, Negussie, Geller, et al., 2019). These factors play a crucial role in health insurance coverage determining health outcomes as well as access to health care services. Studies have consistently shown that uninsured individuals, predominantly poor individuals, have higher risk of premature death, compared to those with private insurance, even after adjusting for demographic and health related factors. (Hoffman, Paradise, 2008). (Wilper, Woolhandler, Lasser, McCormick, Bor, Himmelstein, 2009). Premature death is not the only concern when it comes to uninsured individuals, lack of health insurance is associated with reduced access to primary care, preventative health measures, and timely treatment. The population are more likely to experience adverse health outcomes, including declines in health and function, preventable health problems, severe disease at diagnosis as well as premature mortality. (Hoffman, Paradise, 2008). K. Keisler-Starkey and L.N. Bunch found that by 2021 8.3% of the US population was uninsured. A decrease from 2020 when 8.6% of the population was uninsured. A major reason for this decrease in the uninsured population was the increase of public coverage, especially Medicaid which increased its coverage by 0.9% in the year. Uninsured children under the age of 19 also decreased from 5.6% in 2020 to 5.0% in 2021. These numbers were impacted by the economic shock and policy changes related to the COVID-19 pandemic, including the increased Medicaid enrollment. For those employed in this period, Private health insurance (66.0%) was more prevalent than public insurance (35.7%), with employer-based insurance being the most common (54.3%). (Keisler-Starkey and Bunch, 2022). Medicaid and SCHIP increased health coverage for low-income populations, especially children. Although there was a decrease in uninsured individuals there is an emphasis on continuous and stable health insurance coverage. Stable health insurance is crucial for achieving the personal benefits for greater financial security, prevention of illness, better physical and mental

health, longer life expectancy, and higher quality of life (Hoffman, Paradise, 2008). Having health insurance improves health outcomes including self-reported health status and mortality, especially those with newly diagnosed diseases. Individuals with health insurance consistently have higher uses of physician services, preventative services, and hospital services. This is contradictory from the RAND health insurance experiment which suggested that patients cut back on health care visits when asked for small co-payments. (Freeman, Kadiyala, Bell, Martin, 2008). Despite these findings evidence strongly supports the positive impact of health insurance on overall health outcomes and likely outweighs the potential reduction in visits due to the co-payments.

A 1996 study suggested that vulnerability as a multidimensional construct plays a large role in the variance of insurance coverage. Race, income, and self-perceived health status were the key indicators. Individuals with multiple vulnerability factors e.g., low income, minority status, poor health, have the lowest rates of insurance coverage. Income being the strongest predictor. (Leiyu Shi, 2001)

There is a complex relationship between citizenship status and health disparities among immigrants in the United States. Non-US citizens, particularly undocumented immigrants face significant barriers in accessing health care compared to their US citizen counterparts. A 2017 study in California looked at the association between citizenship status and health insurance. US citizens were 4.3% more likely to have health insurance compared to non-citizens. A binary logistic regression analysis revealed that citizenship status had the greatest influence on health insurance status, followed by employment status. Poverty was not found to be significant. In general, employed individuals were twice as likely to have health insurance as those who are unemployed. (Pryde, 2019). Most health coverage in the United States comes from an individual's employer. However, only 50.8% of noncitizen full

time workers had employer-sponsored coverage compared to 81.4% of Us-born full-time workers. Sociodemographic and employment characteristics largely accounted for this variation. Both populations show strong association of low income and lack of employer-sponsored health insurance. Differences between the highest-paid and the lowest-paid workers were most prevalent among non-citizens. At each income level, noncitizens had lower rates of employer-sponsored insurance compared to native born workers. The largest gap was seen among workers earning less than $15,000 annually, 25% of noncitizens in this category had employer-sponsored insurance compared to 58% of native-born. (Carrasquillo, Carrasquillo, and Shea, 2000).

These inequalities are further exacerbated by state-level policies that criminalize immigrants creating a place for policing and reducing non-citizen access to public services, such as healthcare. States with higher immigration criminalization policies such as verification of legal status for accessing public services or employment and criminalizing activities associated with undocumented status, lower the odds that noncitizens have health care. On average states have three or more of these policies. The journal, “States with fewer criminalizing immigrant policies have smaller health care inequities between citizens and noncitizens” suggests that the more criminalization policies a state has, the greater the inequality in health care between US and non-US citizens. These crimination policies disproportionally impact non-US citizens access to healthcare. (Young, Beltrán-Sánchez, Wallace, 2020).

Another aspect shaping the income inequality between citizens and non-citizens is income inequality. Immigrants from countries with higher income inequality tend to have better health upon arrival in the US compared to those with lower income inequality in their home country. Maskileyson indicates that it might be due to positive health selection.

Immigrants from higher income inequality countries experience a faster decline in health after migration, after controlling for the individual and country level characteristics. There are two potential reasons listed for this decline: Firstly, there is long lasting harmful effects of exposure to high income inequality which continue to persist even after migration. Secondly, immigrants from more unequal countries may have fewer transferable skills and end up in low status jobs, leading to lower income and lower health care standards. Even with the advantage of greater health on arrival, health after migration quickly declines, especially over generations. (Maskileyson, 2019). It is not helpful that alongside these health declines, immigrants are more likely to have characteristics with being uninsured such as being male, single, having lower education, income and working in lower status jobs. However, Prentice, Pebley and Sastry state that compared to naturalised citizens there is no significant difference in non-citizen's ability to gain or maintain health insurance when adjusted for socioeconomic status. Suggesting that non-citizen lack of insurance is due to their disadvantaged employment and socioeconomic position rather than their citizenship status. Health insurance is flexible. For example, Pregnancy significantly increases the likelihood of gaining insurance, while having children aged 3-12 decreases the likelihood. However, undocumented immigrants and legal residence were less likely to gain insurance and more likely to lose insurance compared to native born citizens, even after adjusting for socioeconomic factors. (PrenticePhD, ′PebleyPhD, and ′SastryPhD, 2005).

Within mixed citizen status families, non-citizen children have lower rates of health insurance coverage and face delays in receiving necessary care due to cost and eligibility restrictions on public programs like Medicaid/CHIP. There is significant state level variation in coverage with mixed status family children. For example, Colorado has the largest coverage gap of 25.7% between children in all citizen households compared to mixed status

families. New York has one of the lowest coverage gap of only 2.0% difference. These children experience substantially lower rates of employer-sponsored insurance, Medicaid helps but does not close the coverage gap. Nonetheless, among low-income families, children in mixed-status families have slightly better Medicaid coverage. (Acevedo-Garcia and Stone, 2008).

In regard to education, as might be expected, the higher one's level of education, the more likely the individual is to have health insurance in general and, specifically more likely to have employer-sponsored coverage. The likelihood of having Employer sponsored health insurance is more heavily impacted by the industry and occupation in which one works, rather than just the educational attainment. Occupations with higher concentrations of university-educated workers are associated with higher access to employer-sponsored insurance. With this in mind, people with lower educational attainment, often work in occupations with lower wages and fewer benefits, decreasing their access to health care. To access health care, people with lower incomes often must allocate a higher proportion of their income to health insurance or medical expenses. (Dewar, 1998)

A study in 2006 analyzed health insurance coverage among the six largest Asian subgroups in the United States: Chinese, Filipino, Indian, Korean, Vietnamese, and Japanese. Overall Asians have lower rates of health insurance coverage compared to their non-Hispanic white counterparts. Koreans and Vietnamese people were the least likely to have insurance. The study also examined the role of citizen status among these individuals. Noncitizen Asians were twice as likely to lack insurance coverage when compared to US-born Asian individuals. Lower income as well as lower educational attainment were consistently associated with less coverage. (Huang, Carrasquillo, 2008)

Although there is literature suggesting there is a clear correlation between educational attainment and access to health insurance, there is little literature on this relationship in regard to US citizenship status in general. This thesis aims to provide a deeper understanding into this gap in literature.

Methodology

The data has been sourced from the 2022 American Community Survey (ACS) IPUMS USA. IPUMS USA provides census and survey data from across the USA. The data is a weighted sample 1-in-100 national random sample of the US population. The ACS has advantages over other data sources because it contains detailed descriptions of years of educational attainment, citizenship status, total personal income, employment status, as well as a relatively large sample of the population.

The sample is restricted to individuals 16 and older, because of the federal nonrestricted working age. The final sample from the IPUMS USA comprised of 218,620 individuals. For the analysis I retained only individuals in which have all the information needed available.

The variables being tested include citizenship status, total personal income**,** Employment status, health insurance coverage, and educational attainment. Citizenship status data shows the citizenship status of the respondent including: Born abroad of American parents, Naturalized citizen, Not a citizen. Health insurance data indicates whether the individual had any health insurance at the time of the interview. These include employer provided, privately purchased, TRICARE or other military care, Medicaid or other governmental insurance, or veterans' administration-provided insurance. Indian Health services is not included in this data as the Census Bureau suggests that its policies are not

always comprehensive. The variables within this set include: no health insurance coverage, and with health insurance coverage. Educational attainment measures individuals' highest year of school or degree completed. If respondents attended 10th grade but didn't complete it, they are classified as completing the 9th grade. Code increases by one unit every academic year completed, other than 5,6,7 and 8th grades which together are counted as one unit increase. College years are coded similarly beginning after grade 12 (6), to first year of college (7) and so forth. Employment status indicates whether the individual was a part of the labour force, either working or seeking work and if so, if the person was currently unemployed. Employment status variables include employed, unemployed, and not in the labour force. Income indicates individuals total pre-tax personal income or losses from the previous year. (IPUMS)

The dependent variable is an individual's access to health insurance coverage. This is an objective dichotomous variable. There are various independent variables including educational attainment, income, and employment status.

The method aims to test for a connection between social determinants of health, such as education, and its interaction with citizenship status in the US. Using Maskileyson (2019) method, we can modify the logistic regression model as follows, in order to test the dichotomous variable, I will be running multinominal logistic regressions as I am testing multiple categorical variables on a dichotomous dependent variable. The model will predict the likelihood of heaving health insurance as a function of individual-level characteristics. This is presented by the following equation:

$$\log(P(HCOVANY=i)/P(HCOVANY=ref)) = b0i + b1i\mathit{EDUC} + \mathit{b2i}EMPSTAT + b3iINCTOT + b4iCITIZEN$$

Where β_0 is the intercept, P(HCOVANY=i) is the probability of having health insurance, P(HCOVANY=ref) is the probability of not having health insurance. $\beta_1 i$, $\beta_2 i$, $\beta_3 i \beta_4 i$ are the coefficients for the citizenship category.

Results

Table 1:

Likelihood Ratio Tests

Effect	Model Fitting Criteria: −2 Log Likelihood of Reduced Model	Likelihood Ratio Tests: Chi-Square	df	Sig.
Intercept	38928.288[a]	.000	0	.
INCTOT	41009.028	2080.740	1	.000
EMPSTAT	39054.810	126.521	1	<.001
EDUC	44585.294	5657.006	1	.000
CITIZEN	51017.798	12089.510	2	.000

The chi-square statistic is the difference in −2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

a. This reduced model is equivalent to the final model because omitting the effect does not increase the degrees of freedom.

Parameter Estimates

HCOVANY[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B): Lower Bound	Upper Bound
1	Intercept	.057	.032	3.213	1	.073			
	INCTOT	.000	.000	1514.658	1	.000	1.000	1.000	1.000
	EMPSTAT	.303	.027	130.253	1	<.001	1.354	1.285	1.426
	EDUC	−.157	.002	5613.112	1	.000	.855	.851	.858
	[CITIZEN=1]	−1.226	.029	1756.375	1	.000	.293	.277	.311
	[CITIZEN=2]	−1.372	.013	10462.040	1	.000	.254	.247	.260
	[CITIZEN=3]	0[b]	.	.	0	.	.	.	.

a. The reference category is: 2.

b. This parameter is set to zero because it is redundant.

The multinominal logistic regression above was conducted and shows that the overall model is statistically significant (Chi-Square = 2080.740, p<0.001). Education (Chi-

Square= 5657.006, p<0.001), Income (Chi-Square= 2080.740, p<0.001) and Employment status (Chi-Square= 126.521, p<0.001) are all significant predictors of health insurance coverage.

The parameter estimates provide insights to the relationship between citizenship status and health insurance coverage, controlling for social determinants of health. When comparing US citizens (CITIZEN 2) to noncitizens (CITIZEN 1), noncitizens have significantly lower log-odds of having health insurance (B=-1.226, p<0.001). The table suggests that non-citizens have about 71% lower odds of having health insurance compared to citizens, holding all other variables constant.

Of the social determinants, Employment (B=0.303, p<0.001) status and Education (B=-0.157,p<0.001), are the most significantly associated with health insurance coverage. Higher levels of education are associated with lower log-odds of having health insurance, however, the employment is associated with higher log-odds of having coverage. Total income doesn't seem to be statistically significant (p>0.05). Citizenship status is a significant predictor of health insurance coverage disparities even after accounting for social determinants of health.

Discussion and conclusion

The findings of this thesis show citizenship status to be significant in determining health insurance coverage in the United States. This is true even when accounting for key social determinants of health such as education, employment status, and income. There is a need to address these disparities between non-citizens and citizens living in the United States through targeted policies. The results suggested that employment status is positively associated with coverage. The findings contribute to research on health disparities and provide valuable insight for policymakers to promote health equity among citizens and non-

US citizens. By recognizing these disparities, the US can work towards ensuring that all individuals living in the US have the necessary resources for their health and wellbeing.

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