Health Insurance and the Impact of Citizenship Status, Employment Status, and Poverty Status

by

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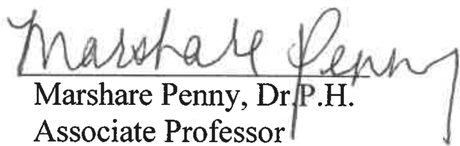

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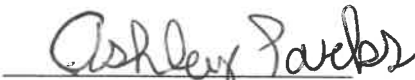

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Abstract

The Patient Protection and Affordable Care Act's expanded access to health insurance in 2014 did not guarantee access to health insurance for low-income and undocumented immigrants. While employment status and poverty status are estimated to play a major role in the prediction of health insurance status, this study hypothesized that citizenship status is the most predictive of an individual's health insurance status. Using the 2017 California Health Interview Survey (CHIS) data, this study examined a random 10% sample of the adult respondents. A Chi-square Test of Independence was performed to determine the relationship between health insurance and citizenship, employment, and poverty. A binary logistic regression was performed to identify the strongest predictor of health insurance status among citizenship, employment, and poverty. A significant association between citizenship status and health insurance status was found (X^2 (1) = 40.37, $p < .001$). The odds of being insured were 4.3 times higher among citizens compared to non-citizens. Citizenship status had the greatest significant influence on health insurance status ($p = .001$). Those who are non-citizens are 71% less likely to have health insurance compared to citizens. The findings of this study suggest that policy interventions should include further expansion of health insurance eligibility for immigrants. A wider net of eligibility would improve the uptake in health insurance, leading to better health outcomes with the improved access to healthcare. In order to minimize the barriers to accessible healthcare and for improved health outcomes of our nation as a whole, policymakers must understand the current relationship and impact of citizenship status on health insurance status. This study contributes to that understanding.

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Review of Literature

Introduction

Health insurance coverage in the United States has changed since the implementation of the Patient Protection and Affordable Care Act (ACA). For example, in 2009 employer-based health insurance covered over 50%, 170.8 million, of the US population, while government funded health insurance, such as Medicare, Medicaid, and military healthcare, covered about 30%, 93.2 million, of the US population (DeNavas-Walt, Proctor & Smith, 2010). The remaining 20%, 49.0 million, of the US population had no health insurance coverage (DeNavas-Walt, Proctor & Smith, 2010). In 2014, with the full implementation of the ACA, about 50% of health insurance coverage was still provided through employer-based plans, but there was an increase to about 40% of the population who received health insurance coverage through the Medicaid expansion and subsidies (Smith & Medalia, 2015). This shows the increase of the total population who had any type of health insurance coverage to 90% with only 10% of the population left without health insurance (Smith & Medalia, 2015). The population who did not have health insurance coverage before the full implementation of the ACA gained access to health services they wouldn't have had before.

One of the barriers to health care is access to health services, which are usually related to cost (Kominski, Nonzee & Sorensen, 2017). For example, low- to mid-income families without health insurance coverage tend to be at higher risk for chronic health conditions and delaying or not seeking care for those conditions because of lack of health insurance (Strane et al., 2016). Now that the ACA has expanded eligibility for health insurance coverage, access to free or reduced-price primary and preventative care has increased. For example, there has been an increase in primary care appointments among the newly eligible Medicaid patients to address

common chronic health conditions, such as smoking cessation, blood pressure, and diabetes management (Angier et al., 2017).

Affordability of Health Insurance with the ACA

After the implementation of the ACA in 2014, more of the U.S. population was eligible for financial assistance to purchase health insurance and more services became available free of charge or at reduced prices. For example, more than half of the states in the nation implemented the Medicaid expansion. Under the ACA's Medicaid expansion, individuals and families, specifically citizens and some legal residents, are granted financial assistance in the form of subsidized health insurance plans to purchase through the marketplace or Medicaid health insurance plans (Healthcare.gov, 2017). The subsidized health insurance plans or health insurance through Medicaid provide better affordability for prescriptions, appointments, and preventative care (Antonisse, Garfield, Rudowits, & Artiga, 2017). Subsidies can take form either as a premium tax credit to reduce monthly payments of a purchased health plan or as a cost-sharing subsidy to reduce out of pockets costs when seeing the doctor or staying in the hospital (Kaiser Family Foundation, 2017a). Even with the financial assistance to afford the purchase of health insurance, there are still approximately 28 million, low-income, uninsured people in the U.S., and an estimated 22% of these individuals are immigrants (Kaiser Family Foundation, 2017b).

California was one of the states that opted for the Medicaid expansion. This helped roughly 4% of the uninsured population to gain health insurance (Fronstin, 2018). Overall, the full implementation of the ACA increased health insurance coverage in California from 84% to 91% (Fronstin, 2018). However there are still 2.6 million people without health insurance due to affordability, no employer contribution, or citizenship status (Fronstin, 2018).

Reasons for remaining uninsured. Although the goal of the ACA and the Medicaid expansion was to reduce the burden of cost for the low-income population, affordability is still the main reason for the coverage gap (Buchmueller, Levinson, Levy, & Wolfe, 2016). One reason is that an individual or family lives in a state that did not opt for Medicaid expansion. In states that did not opt in for the expansion, there are more individuals without health insurance because they are not poor enough to qualify for subsidies but earn too much to purchase health insurance through the marketplace (Garfield & Damico, 2017). A second reason for remaining uninsured is that some employers do not offer the same coverage as before the implementation of the ACA (Strane et al., 2016). For example, the ACA's shared responsibility provision does not apply to businesses smaller than 50 full-time employees, and some employers now only offer health benefits to full-time employees (Garfield & Damico, 2017). In these circumstances, part-time employees and employees in businesses that employ fewer than 50 full-time employees do not have an employer-based coverage option (Garfield & Damico, 2017). A third reason for remaining uninsured is being undocumented since undocumented immigrants are not included in any eligibility criteria under the ACA or the Medicaid expansion (Garfield & Damico, 2017).

Employment and Health Insurance

The majority of health insurance in the U.S. is provided through employer benefits. Sixty-two percent of employees have coverage through their employer (Claxton et al., 2013). On average, the employer contribution for single person is just over 60% and 70% for family coverage (Claxton et al., 2013). Through the employer, an employee has the option to choose from different plan enrollment types. The majority of covered employees choose Preferred Provider Organization and Health Maintenance Organization plans, but since the implementation of the ACA, there has been an increase in the selection of High Deductible Health plans with

health savings accounts for the lower premium costs (Claxton et al., 2013). As employment is the means for more than 50% of health insurance coverage in the United States, employment for undocumented immigrants is essential.

Immigrants and Poverty

Undocumented immigrants are often found living under the federal poverty level. For example, McConville, Hill, Ugo, Hayes, and Johnson (2015) found that more than 50% of the undocumented immigrant population lives below the 138% Medicaid eligibility threshold. The most reported causes of stress among day laborers are money related. According to the analysis of the 2010-2011 Current Population Survey by the Center for Immigration Studies, 62% of adults and their U.S. born children live in or near poverty. In California, undocumented immigrants earn only half of the income that native born citizens earn with the same number of persons in the household. This low monthly income is not enough to cover basic needs, not enough to build savings, and not enough to avoid homelessness (Galvan, Whol, Carlos, & Chen, 2015). Also, in California, it is common to see younger immigrants earning money through street vending despite stigma, legality, and very low earnings (Estrada & Hondagneu-Sotelo, 2011). Overall, immigrants are employed in low skill, low education, and low earning occupations (Passel & Cohn, 2009). There are significant wage differences and violations between native born, documented immigrant, and undocumented immigrant employees, causing higher percentages of undocumented immigrants who live in poverty (Bernhardt et al., 2009).

Occupations and wages. Occupations where immigrants are overrepresented include service, production, transportation, material moving, construction, and maintenance (Bureau of Labor Statistics, 2017a). Undocumented immigrants are especially concentrated in the occupations of farming, construction, and production (Passel & Cohn, 2016). At maximum,

education requirements for these occupations are a high school diploma or equivalent, and when broken down into the subgroups, for example with production, most positions do not require education at all because they offer on the job training (Bureau of Labor Statistics, 2017b). In 2016, farming was one of the lowest paid occupations with the median annual wage falling even below the annual wage for all occupations ($37,040) at $23,510 (Bureau of Labor Statistics, 2017b). Median annual earning for production workers, such as assemblers, bakers, food processors, and painters, also fell below the annual wage for all occupations at $33,130 annually (Bureau of Labor Statistics, 2017b). Construction occupations wages are at a higher level due to the nature of the work, and they range from $32,000 to $62,000 (Bureau of Labor Statistics, 2017b). The wages reported by the Bureau of Labor Statistics include all types of employees, native, documented immigrant, and undocumented immigrant; thus, they may not represent the true earnings for undocumented immigrants.

Wages (and violations) compared. Wages listed for the above industries where undocumented immigrants are most present do not include the wage disparities between native and documented immigrant workers, documented immigrant and undocumented immigrant workers, or undocumented immigrant and native workers. Neither do they include wage violations such as wage theft, unpaid hours, or wages below minimum wage. In all occupations, native born employees in 2016 made an estimated $59,781, documented immigrant employees made approximately $55,559, and undocumented immigrant employees are estimated to have earned $48,066 (Semega, Fontenot, & Kollar, 2017). Overall, documented immigrant workers earn only about 80% of what native-born workers earn, and undocumented immigrant workers earn less than documented immigrant workers. In contrast to documented immigrants, the

income for undocumented immigrants does not increase the longer they live in the United States (Passel & Cohn, 2009).

Minimum wage violations are common against documented immigrants and more so for undocumented immigrants. For example, it is common for some employers trying to stay competitive in a struggling labor market to keep wages low or withhold wages from undocumented immigrant workers by threatening to disclose their citizenship status to authorities (Smith, Avendaño & Ortega, 2009). Also, immigrant workers, both documented and undocumented, are nearly twice as likely as native workers to be victims of a minimum wage violation (Bernhardt et al., 2009). Bernhardt et al. (2009) also found that 80% of immigrant workers, both documented and undocumented, experience an employer withholding overtime wages, and 85% of these individuals were undocumented immigrant workers.

Documented Immigrants and Health Insurance

Documented immigrants have access to health insurance coverage. For example, as defined by the ACA, a lawfully present documented immigrant within the five year wait time to become eligible for naturalization is eligible for some Medicare and Medicaid health insurance coverage benefits as well as some of the tax credits on health insurance premiums when purchasing health insurance (Parmet, Sainsbury-Wong, & Prabhu, 2017). After five years of living in the United States and a documented immigrant has been naturalized, she/he is eligible for the same rights and responsibilities as U.S. citizens (Witsman, 2017). This means they are allowed to fully participate in the expanded Medicare coverage and full tax credits on health insurance premiums when purchasing health insurance on the insurance marketplace under the ACA (Parmet, Sainsbury-Wong, & Prabhu, 2017). Safety-net programs also play a major role in access to health insurance coverage for documented immigrants by offering low or no cost care

for lower income documented immigrants who cannot afford to purchase health insurance coverage on the insurance marketplace or are only getting the limited benefits during the five year wait time to naturalization (Nguyen, Makam, & Halm, 2016).

Undocumented Immigrants and Health Insurance

Undocumented immigrants do not have access to health insurance coverage. The safety-net and emergency medical care are all that is available to an undocumented immigrant. The ACA even has provisions to expand resources and access to safety-net hospitals and community health centers for the low-income and underserved populations—in this case the undocumented immigrants (Shin & Regenstein, 2016). In emergency rooms, undocumented immigrants are protected by the provision of the Emergency Medical Treatment and Labor Act (EMTALA) to provide stabilizing health services regardless of their ability to pay or legal status. According to Nuila (2015), there are hundreds of cases where an undocumented immigrant has to visit the ER for dialysis treatment because he or she does not qualify for any federally funded programs to get the treatment needed.

Conclusion

Since the implementation of the ACA, most of the population has health insurance coverage through their employer, and some of the population has health insurance coverage through the expanded Medicaid eligibility criteria. However, there is still a segment of the population who does not have health insurance either because their employer does not offer it and they cannot afford to purchase it individually or because they are undocumented immigrants. Undocumented immigrants have to face both of these obstacles of low-income with poor occupational outlook and undocumented immigration status. Due to the undocumented immigration status, the only option to receive healthcare services is to utilize the services offered

at safety-net hospitals or the emergency room. Therefore, the goal of this study is to seek a better understanding of the relationship between these factors of immigration, poverty, employment, and health insurance to guide policy and legislation development.

Statement of the Problem

Undocumented immigrants do not have health insurance. The 11 million undocumented immigrants living in the United States are persons who (1) entered the United States without the proper authorization and documents; (2) once entered the United States with proper authorization but have since violated the terms of the status in which they entered the United States; or (3) have overstayed the time limit of their original status (Krogstad, Passel & Cohn, 2017; IRS, 2017). In 2010, President Obama enacted the Patient Protection and Affordable Care Act (ACA) to make health insurance more affordable and accessible for the US population. Even though the full implementation of the ACA in 2014 expanded access to health insurance to about 90% of the US non-elderly population, undocumented immigrants are not allowed to purchase health insurance through the health insurance exchanges, are not eligible to receive government funded health insurance through Medicaid, and usually are not offered employer-based health insurance benefits (Henry J. Kaiser Family Foundation, 2017b; Patient Protection and Affordable Care Act of 2010). Because the ACA does not allow the coverage or purchase of health insurance for undocumented immigrants, 3-4% of the US population lives without health insurance (Krogstad, Passel & Cohn, 2017).

Undocumented immigrants make up about 5% (8 million) of the United States workforce but have limited employment options (Passel & Cohn, 2016). For example, undocumented immigrants usually work for businesses where they earn wages at or well below the poverty level in agriculture, landscaping, manufacturing, private service, and construction (Passel & Cohn, 2016). Undocumented immigrants working for small businesses not only lose out on wages but also lose out on the option to get employer-based health insurance. For example, employers with less than 50 full-time or full-time equivalent employees are not subject to the employer shared

responsibility provision of the ACA that mandates employers to offer employer-based health insurance (Capps & Fix, 2013; IRS, 2017). The limited employment options for undocumented immigrants could be a contributing factor to the lack of health insurance coverage.

Undocumented immigrants with low-income and without health insurance underutilize health care services and are least likely to have a usual source of care (Berlinger & Raghavan, 2013; Rodríguez, Bustamante, & Ang, 2009). Safety-net hospitals and community health centers, where undocumented immigrants can get treatment regardless of citizenship status or income, serve this low-income and vulnerable population (Shin & Regenstein, 2016). The EMTALA also provides access to emergency medical services regardless of ability to pay (Zibulewsky, 2001). However, exclusion policies surrounding deportation and restrictive policies, such as the ACA, contribute to the lack of follow-through on regular appointments and immunizations for this population (Hacker, Anies, Folb, & Zallman, 2015). Continuing to exclude undocumented immigrants from access to health insurance will only make treatment for primary care and chronic health issues more expensive for the federal government (Capps & Fix, 2013).

Purpose of the Study

The purpose of this study is first to: (1) determine if there is a relationship between immigration status and health insurance status for the California population; then (2) describe the relationship between immigration status and additional influencing factors on health insurance such as poverty and employment for the California population; and lastly, (3) provide policy options based on the findings to improve the current state of uninsured, undocumented, immigrants in California.

Research Questions

The research questions are:

1. Is there a relationship between citizenship status and health insurance status?
2. Of poverty, employment, and citizenship status, which factor influences health insurance status the most?

Hypothesis

It is hypothesized that there is an association between health insurance status and immigration status, where having health insurance becomes less likely among those identified as non-citizens. It is also hypothesized that immigration status is the strongest predictor of health insurance status for immigrants.

Method

Design

Using secondary data from the California Health Interview Survey ([CHIS] 2017), this study employed a cross-sectional design. The respondents of the CHIS were the non-institutionalized California child (under age 12), adolescent (ages 12-17), and adult (age 18 and older) populations living in households with landline phones and/or with cellular devices.

Participants

The participants used for the purpose of this study were adult (age 18 and older) CHIS respondents. The number of adult participants who responded to the CHIS was 21,153. Using G*Power Software Version 3.1.9.2, a medium effect size of .30, an alpha level of .05, and a power of 80%, the estimated minimum sample size was 1,431 to perform all analyses. Due to the large sample size of the adult respondents, a 10% random sample was pulled from the original sample. The 10% random sample used for analysis was 2,049 and represented the larger 21,253 sample; thus, the minimum required sample size was met.

Procedures

The CHIS is an annually conducted population-based telephone survey of California's population. Under contract with the UCLA Center for Health Policy Research (UCLA-CHPR), Social Science Research Solutions, Inc. (SSRS) (a private firm that provides market and survey research services in the United States) conducted the CHIS 2017 data collection. The interviews were conducted from June 2017 to December 2017 using random digit dial sampling for 50% landlines and 50% cell phone numbers and six languages (English, Spanish, Chinese, Vietnamese, Korean, and Tagalog). To ensure a representative sample of the California population, CHIS surveyors oversampled Korean, Vietnamese, San Diego County, and Imperial

County populations. To improve the analytic utility of the files, SSRS and UCLA-CHPR staff filled in missing values using random selection from the observed distribution, hot deck imputation, and external data assignment. Once the interviews were complete and all data was compiled and cleaned for missing responses, the data dictionary, the questionnaire and the data files were published as Public Use Data Files on the UCLA Center for Health Policy Research website in SAS, SPSS, and STATA formats.

Dependent Variable

There was one dependent variable for this study: Health Insurance Status. CHIS measured health insurance status using the variable HMO STATUS. In the CHIS dataset, the variable HMO STATUS had three values: 1 = HMO, 2 = Non-HMO, and 3 = Uninsured. For the purpose of this research, 1 = HMO and 2 = Non-HMO were combined to a single value option of 1 = Insurance, and the value of 3 = Uninsured was redefined as 0 = No Insurance. This resulted in two values of 0 = No Insurance and 1 = Insurance.

Independent Variables

There were three independent variables in this study. The first independent variable was Citizenship Status. Citizenship Status was measured in the CHIS dataset using the variable CITIZEN2. The CITIZEN2 variable originally had three values: 1 = U.S. Born Citizen, 2 = Naturalized Citizen, and 3 = Non-Citizen. The values 1 = U.S. Born Citizen and 2 = Naturalized Citizen were combined to create the new value of 1=Citizen, and 3 = Non-Citizen was recoded as 0 = Non-Citizen.

The second independent variable, Employment Status, was measured in the CHIS dataset using the variable WRKST_P1. The WRKST_P1 variable had five values: 1 = Full-Time Employment (21+hrs/week), 2 = Part-Time Employment (0-20 hrs/week), 3 = Other Employed,

4 = Unemployed looking for work, and 5 = Unemployed not looking for work. The values of 1 = Full-Time Employment (21+hrs/week), 2 = Part-Time Employment (0-20 hrs/week), and 3 = Other Employed were recoded as Employed. The values of 4 = Unemployed looking for work and 5 = Unemployed were recoded as Unemployed. This led to two values of 0 = Unemployed and 1 = Employed.

The third independent variable was Poverty Status. The Poverty Status variable was measured in the CHIS dataset using the variable POVLL. The POVLL variable had four values of 1 = 0-99% FPL, 2 = 100-199% FPL, 3 = 200-299% FPL, and 4 = 300% FPL and above. The value 1 = 0-99% FPL was recoded to 0 = Below the Federal Poverty Level (BelowFPL). The values of 2 = 100-199% FPL, 3 = 200-299% FPL, and 4 = 300%$^{+}$ FPL were combined and recoded to 1 = Above the Federal Poverty Level (AboveFPL). This resulted in the two values of 0 = BelowFPL and 1 = AboveFPL.

Data Analysis

Data in this study was analyzed using the IBM Statistical Package for the Social Sciences (SPSS) software, version 25. To answer the first research question, "*Is there a relationship between citizenship status and health insurance status?*", a Chi-square Test of Independence was performed. The Chi-square Test of Independence was chosen to test the relationship because the cases used for analysis were mutually exclusive, independent, nominal, and had counts with at least five or more expected cases.

To answer the second research question, "*Of poverty, employment, and citizenship status which factor influences health insurance status the most?*", a binary logistic regression was performed to identify the strongest predictor of health insurance status among the three predictor variables: citizenship status, employment status, and poverty status. The binary logistic

regression was chosen to test the predictability of each variable because the outcome is dichotomous with no outliers or high intercorrelations among the predictors.

Research Ethics

This study was approved by the Institutional Review Board (IRB) at California Baptist University on March 3, 2017 (see Appendix A).

Research Findings

In this research study there were 2,049 participants. The majority of the participants were White (78%), and female (55%) (see Table 1). Most participants were U.S. citizens (92.8%), employed (52%), living above the poverty level (86%), and had health insurance (95%).

To answer the first research question, "*Is there a relationship between immigration status and health insurance status?*", a Chi-square Test of Independence was performed. A significant association between citizenship status and health insurance status was found (x^2 (1) = 40.37, p < .001) (see Table 2). The odds of being insured were 4.3 times higher among citizens compared to non-citizens. Among those with insurance, 94% were citizens, whereas among those without insurance 77% were citizens. Even with the high percentage of citizens who were uninsured, citizens were still more likely to have health insurance compared to non-citizens.

To answer the second research question, "*Of poverty, employment, and immigration status which factors influence health insurance status the most?*", a binary logistic regression was performed to identify the strongest predictor of health insurance status among the three variables: poverty, employment, and immigration status. The binary logistic regression showed a significant association between the three covariates and health insurance status (X^2 (1) = 2.92, p < .001) (see Table 3). However, citizenship status (p = .001,) had the greatest influence on health insurance status. Those who are non-citizens are 71% less likely to have health insurance compared to citizens. Employment status (p = .001) was also a significant predictor of health insurance status. Those who were employed were two times more likely to have health insurance compared to those who were unemployed. After further evaluation, it was discovered that, although the model over all is significant, poverty status (p = .053) was not a significant predictor of health insurance status.

Discussion and Conclusion

The aim of this study was to determine if there was a relationship between citizenship status and health insurance status. Additionally, the study helped to determine if citizenship status was a stronger predictor of health insurance status compared to employment status or poverty status. The Chi-square and the binary logistic regression analyses performed confirmed the hypotheses.

The results of the analysis performed to answer the first research question, *"Is there a relationship between citizenship status and health insurance status?"*, indicated that there was a significant association between citizenship status and health insurance. More specifically, the odds of being insured were four times higher among citizens compared to non-citizens. This is consistent with findings from Hammig, Henry, and Davis (2019) who used the 2010-2015 National Health Interview Survey to examine health insurance coverage among labor workers. Their research found that U.S. born labor workers had higher insured rates than foreign-born labor workers, and even foreign-born labor workers had higher odds of being insured than non-citizen labor workers.

The results of the analysis performed to answer the second research question, *"Of poverty status, employment status, and citizenship status, which impacts health insurance status the most?"*, indicated that citizenship status had a higher impact on health insurance status than poverty status or employment status. Specifically, those who are non-citizens are 71% less likely to have health insurance than citizens. This is consistent with findings from Vargas Bustamante, Chen, Fang, Rizzo, and Ortega (2013) who examined the main reasons reported for not having health insurance coverage among US immigrant adults. They determined that legal status is a strong predictor of health insurance among immigrants and is compounded by the length of time

living in the U.S. Also, Stimpson and Wilson (2018) used data from the American Community Survey to examine the impact of Medicaid expansion on health insurance coverage for US natives, naturalized immigrants, and non-citizen immigrants. They found that even after the Affordable Care Act's Medicaid expansion in 2014, there has been an overall decrease in health insurance for both naturalized immigrants and non-citizen immigrants across the nation.

In addition to citizenship status, employment status was also a significant predictor of health insurance. Specifically, those who are employed are two times more likely to have health insurance compared to those who are not employed. This is supported by Henry J. Kaiser Family Foundation (2018) report which shows that 47% of health insurance in California is provided through employers.

Although poverty status was not found to be a significant predictor of health insurance status, there are still indications that it does have some impact. For example, the low-income populations eligible for insurance through employers still do not receive enough of an employer contribution toward the high family premiums, which means that health insurance is still too expensive to cover all family members (Bindman, Mulkey, & Kronick, 2018). Those who have incomes between 138% and 400% of the Federal Poverty Level (FPL) are eligible for premium subsidies but still find the cost of premiums and out-of-pocket visits a burden and thus decide to forego health insurance altogether (Bindman, Mulkey, & Kronick, 2018). It is possible that the failure to find an association between poverty and insurance is because California has some of the most inclusive state programs for health coverage, such as Medicare, Medi-Cal, Medi-Cal Access Program, and Children's Health Insurance Program, as well as private programs to benefit adults at community clinics and hospitals.

Limitations

Limitations with this dataset include generalizability, self-report, sample size, and grouping of data variable values. These data are useful for comparisons between states with similar surveys, but overall, this survey is not generalizable to trends across the nation. Although the 2017 California Health Interview Survey collected data from 50% landline and 50% cellphone respondents using random digit dialing, there was still an over-representation of the older population with nearly 68% of respondents being over 65 years of age. This implies that surveys were conducted mostly with participants who were home during the day instead of a population more representative of younger and employed participants.

Self-report issues specifically arise with US Citizenship or Naturalization survey questions. Undocumented or illegal immigrants are more likely to be under-reported based on the stigma surrounding citizenship status (Artiga & Ubri, 2017). An example of the stigma surrounding citizenship status it that immigrant patients are asking to be unenrolled from public assistance programs like Medicare, Medi-Cal, Medi-Cal Access Program, and the Children's Health Insurance Program because they fear that they may be putting themselves, other family members, and undocumented family members at risk of detention, deportation, and separation (Artiga & Ubri, 2017).

The sample size required for the binary logistic regression analysis was much larger than needed for the Chi-square analysis. Therefore, the significance for the Chi-square analysis may have resulted from the larger sample size. Too large of a sample size can result in a Type I error, or the rejection of a true null hypothesis also known as a "false positive." However, in anticipation of a possible Type I error, a sensitivity analysis was performed where a an additional 10% random sample of the study population was drawn three times and tested to confirm that the

study results for the Chi-square analysis were still significant. The results of the additional test on the smaller sample size were still significant, indicating there was no Type I error for this study.

Lastly, the recoding of the employment and poverty variables potentially skewed number estimations. The employment status variable was recoded to have all of the population working in "Employed," and the results may not have accurately accounted for the population who were not offered employer health insurance benefits due to part-time status or working for a business that employed 50 or fewer. The poverty status variable was recoded to have all of the population above 100% of the federal poverty level (FPL), and the results may not have accurately accounted for those who are eligible for Medicaid health insurance coverage, which is at 138% of the FPL.

Public Health Implications

Potential next steps for this research and the findings of this study include further analysis of the 2017 California Health Interview Survey data to determine why there is still a very low percentage of the non-citizen population without health insurance compared to citizens without health insurance. It would also be useful to determine where health care access deficiencies are for both non-citizens and citizens. Also, further analysis of the 2017 CHIS data to measure the types of source of care utilized among non-citizens would help determine the funding needed for resources, such as community hospitals or clinics.

Overall, the significant findings of this study for citizenship status and employment status may support arguments for policy interventions to further expand health insurance eligibility for immigrants through the Patient Protection and Affordable Care Act. A wider net of eligibility for documented and undocumented immigrants would improve the uptake of health insurance and

lead to improved access to healthcare and better health outcomes. The current attempt to further reduce or replace the provisions of the ACA could possibly do the opposite.

Implementing a policy to provide health insurance to undocumented immigrants would directly benefit the undocumented immigrant population. However, there would be a strain on the already limited resources available, such as federal funds, physician caseloads, and hospital capacity. In addition to the overarching policy change to provide healthcare for undocumented immigrants, it is recommended that fiscal policies are reevaluated or created to properly allocate funding for the coverage. The shortage of physicians could be addressed by aligning with the ACA goal of focusing on preventative care. This would take form in letting community centers and clinics utilize more of the different health professionals, such as physician assistants, medical assistants, nurses and public health educators, as a first step to reduce the number of patients visiting doctor's offices for preventative or routine care, such as smoking cessation, birth control, or physical exams. Hospital capacity could also be addressed by utilizing the skills of physician assistants, medical assistants, nurses, and public health educators to treat and care for the admitted patients in a timely manner, thus reducing duration of stay and keeping beds open with more staff available to attend to patient needs. If health professionals take on the expanded roles and tasks, compensation would be increased and would eventually make it back into the economy. If hospitals reduce the duration of stay, they would increase profits. It is possible that the cost of providing health insurance to undocumented immigrants would mean that less federal money is used to cover the cost of treatment for undocumented immigrants.

If replacement of the ACA were to emulate state policies that include coverage for undocumented children, pregnant women, and adults, 11% of the US population, the immigrant population, would have more secure access to healthcare to prevent and treat their chronic

diseases. In order to minimize the barriers to accessible healthcare, for improved health outcomes of our nation as a whole, policymakers must understand the current relationship and impact of citizenship status on health insurance status. This study contributes to that understanding.

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Appendix A

IRB Approval

IRB Approval 059-1617-EXM

Institutional Review Board
Fri 3/3/2017 2:29 PM
To: Sandra M Coronado <SandraMCoronado@calbaptist.edu>
Cc: Marshare Penny <mpenny@calbaptist.edu>

RE: IRB Review
IRB No.: 059-1617-EXM

Project: Immigration, Health Insurance, and Poverty

Date Complete Application Received: 3/3/17

Principle Investigator: Sandra M. Coronado
Faculty Advisor: Marshare Penny

College/Department: Public Health

IRB Determination: Exempt Application Approved – Student research using publically available, de-identified data; acceptable documentation and data protection procedures. Data analysis may begin. There is no expiration date for this protocol.

Appendix B

Tables

Table 1

Demographics (n = 2,049)

Characteristic	*N*	%
Race/Ethnicity*		
African American	166	8.1
American Indian	80	3.9
Asian	252	12
Latino/Hispanic	466	22.7
Other Race	138	6.7
White	1595	77.8
Age		
18-34 Years	365	17.8
35-44 Years	222	10.9
45-64 Years	698	34.1
65+ Years	764	37.3
Gender		
Male	925	45.1
Female	1124	54.9
Citizenship Status		
US-Born or Naturalized Citizen	1901	92.8
Non-Citizen	148	7.2
Employment Status		
Employed	1069	52.2
Unemployed	980	47.8
Poverty Level		
Above FPL	1763	86
Below FPL	286	14
Insurance Status		
Insured	1944	94.9
Uninsured	105	5.1

**Note*. Race/Ethnicity does not sum up to *n* because respondents can report one or more race.

Table 2

Bivariate Association between Citizenship Status and Insurance Status

Citizenship Status	No Insurance *n* (%)	Yes Insurance *n* (%)	Adjusted OR 95% CI
Non-Citizen	24 (22.9)	124 (6.4)	4.3
Citizen	81 (77.1)	1820 (93.6)	(2.6, 7.1)

OR = Odds Ratio; CI = Confidence Interval. Chi-square test of independence to determine relationship between Citizenship Status and Insurance Status. * $p = .001$

Table 3

Summary of Logistic Regression Analysis for Variables Predicting Health Insurance Status

	B	SE	β	CI
Predictor				
Citizenship Status	-1.24	0.26	0.29*	(0.17, 0.48)
Employment Status	0.78	0.22	2.19*	(1.41, 3.39)
Poverty Status	-0.50	0.26	0.61	(0.37, 1.01)

Note: CI, confidence interval. Cox & Snell R^2 = .021, Nagelkerke R^2 = .062 (*p = .001).