Global Social Welfare (2019) 6:107–119
https://doi.org/10.1007/s40609-018-00131-2

Recent Immigrants' Use of Dental Care and Health Insurance Status in the USA

Shih-Ying Cheng[1] · Takashi Amano[1] · Jaime Perez-Aponte[2] · Shanta Pandey[2]

Published online: 19 December 2018

Abstract

Background According to existing research, immigrants have poorer oral health than the US-born population. Evidence suggests that immigrants' poor oral health is associated with a lack of health insurance and a lower use of preventive dental services. However, the role of Medicaid coverage on immigrants' use of dental healthcare has not been well investigated.

Methods To explore if the use of oral healthcare services increased among immigrants with Medicaid, this study analyzed a sample of 7578 legal immigrants aged between 18 and 65 using the 2003 New Immigrant Survey. Bivariate analyses and multivariate logistic regressions were performed to examine the relationship between immigrants' health insurance status and the use of dental healthcare.

Results More than 60% of recent immigrants were not covered by any health insurance, and 56% did not schedule any dental services during the year prior to the survey. The results of the logistic regression revealed that immigrants covered by employment or private insurance were 74.3% more likely to have a regularly scheduled dental service, compared to immigrants who were uninsured. Having Medicaid coverage, however, was either not associated with or had smaller effect size in predicting immigrants' use of dental services using the two analytic samples. The results of an additional bivariate analysis suggested that Medicaid was insufficient in covering dental healthcare expenses.

Conclusions This study highlighted the low use of dental services among recent immigrants and the high proportion of them currently uninsured. The study also suggested the need for better coverage of dental healthcare expenses for Medicaid recipients.

Keywords Medicaid · Health service utilization · Immigrants · Oral health

Introduction

The foreign-born population of the USA reached a record of 42.2 million, accounting for 13.2% of the total population in 2014 (Brown and Stepler 2016). Given the size of the immigrant population, understanding their adaptation process has been a key interest of policymakers and researchers (Lee et al. 2012). Moreover, the health status of immigrants plays a central role in shaping health outcomes of the US population (Jasso et al. 2004a). However, although a growing body of research has investigated immigrants' well-being, there are gaps in the literature concerning immigrants' health and healthcare service use.

Immigrants' Health and Healthcare Service Utilization

It is well established that recent immigrants to the USA are generally healthier than the general population due to positive health selection (see Akresh and Frank 2008; Antecol and Bedard 2006, 2015; Cunningham et al. 2008; Jasso et al. 2004a; Pandey and Kagotho 2010). Nevertheless, immigrants' original health advantages disappear over time. Several mechanisms behind this phenomenon have been suggested in previous studies. Finch and Vega (2003) revealed that acculturation stressors such as discrimination, legal status, and language conflicts were associated with poor health among Latinos in California. Akresh (2007) demonstrated that changing dietary behavior was associated with worse health among Hispanics after immigration and suggested that the

✉ Shih-Ying Cheng
shih-ying.cheng@wustl.edu

[1] Brown School, Washington University in St. Louis, 1 Brookings Dr., St. Louis, MO 63130, USA

[2] School of Social Work, Boston College, 140 Commonwealth Avenue, Chestnut Hill, MA 02467, USA

assimilation of health-related behavior may be associated with the disappearance of the immigrants' health advantage.

Another convincing explanation of immigrants' worsening health is their lower level of health insurance coverage and healthcare service utilization. Literature suggests that health insurance coverage is an important predictor of healthcare service utilization among immigrants. Yang and Hwang (2016), for example, applied the Behavioral Model of Health Services Use developed by Andersen and colleagues (Andersen and Newman 1973; Andersen 1968, 1995) to understand immigrants' use of healthcare services. Their model included four clusters of factors associated with health service use: perceived and evaluated healthcare need (i.e., self-rated health status and professional evaluated health status), enabling factors or resources (i.e., financial resources, social resources, and access to healthcare), characteristics which predispose immigrants' use of healthcare services (e.g., demographics), and macrostructural/contextual conditions (e.g., healthcare system, context of emigration). All four factors included variables at both the general and immigrant-specific levels. Their use of the framework, however, did not examine its empirical validity, necessitating research which confirmed its utility within the context of social policy evaluation.

In an analysis of the New Immigrant Survey (NIS) data, Akresh (2009) found that having health insurance increased the utilization of dental and physical healthcare services among Hispanic and Asian immigrants. Lee et al. (2012) found that health insurance status moderated the relationship between the duration of residence in the USA and the health status of immigrants: compared to insured immigrants, the health status of uninsured immigrants worsened faster over time. Additionally, compared to insured immigrants, uninsured immigrants were less likely to have received preventive screenings, such as a Pap smear or prostate exam (Lee et al. 2012). These results underscored the role of health insurance on immigrants' healthcare service utilization and health status.

Studies have also shown that immigrants' health insurance coverage varies by the way they attained their permanent residency status in the USA or their class of immigration. Pandey and Kagotho (2010) revealed that nearly two thirds of immigrants were uninsured, despite their strong labor force participation. Furthermore, of the four key classes of immigration—employment based, family sponsored, refugee/asylum, and Diversity Visa Program—immigrants of the last category were the least likely to be insured. This was evident even after controlling for a wide array of demographic, human capital, acculturation, and asset-related variables. Economically disadvantaged legal immigrants are generally eligible to apply for Medicaid coverage after completing the 5-year waiting period. Current literature, however, has not explored if immigrants' access to Medicaid improves their use of preventive healthcare services.

Immigrants' Oral Health and Use of Dental Services

Oral diseases are some of the most prevalent chronic conditions among any demographic group. Evidence has suggested that poor oral health leads to poor general health (Haumschild and Haumschild 2009). Thus, it is important to understand immigrants' use of dental services to promote better health outcomes. Findings from limited studies have shown contradictory conclusions about oral health among immigrants. Some studies have indicated that immigrants have poorer oral health than US-born populations (Maserejian et al. 2008; McGee and Claudio 2017). For example, McGee and Claudio (2017) demonstrated that US-born Hispanic children with US-born parents were less likely to have cavities than immigrant Hispanic children with immigrant parents. Other studies, on the contrary, have found that adult immigrants had better oral health than the general population (Cruz et al. 2001; Sanders 2010). Sanders (2010), for instance, suggested that oral health–related quality of life was higher among Hispanic adult immigrants than both whites and Hispanics born in the USA. These contradictory findings imply that oral health outcomes vary among immigrants.

One of the most important factors associated with immigrants' poor oral health may be their lower use of preventive dental services. Wilson et al. (2016) found that when compared to US-born citizens, noncitizens and naturalized citizens were less likely to have a dental service, based on an analysis of a nationally representative sample. Mao et al. (2015) found that older Chinese immigrants utilize less dental care than the general population of the USA. By reviewing studies on oral healthcare service utilization among older Chinese immigrants, they found that English language proficiency, stronger social support, and a longer stay in the host country were associated with more dental services use. They also suggested that higher educational attainment and access to dental services were associated with an increase in its utilization among Chinese immigrant adults. Cruz et al. (2010) suggested that having a regular source of dental care and having dental insurance are significantly associated with an increase utilization of oral healthcare services among diverse groups of immigrants in New York City. They demonstrated that more than 70% of the participants in their study lacked dental insurance and approximately 31% reported that they had used a dental service within the previous year.

In sum, poor oral health among immigrants might be associated with lower levels of dental service utilization. One of the most important determinants of dental service utilization is health insurance coverage. However, previous studies have not focused on the specific role of Medicaid coverage on dental healthcare service utilization among immigrants, despite the fact that Medicaid is becoming increasingly important for this population.

Medicaid Policy and Immigrants

Medicaid—a federal healthcare program which matches funding with states—plays a particularly critical role for low- and no-income individuals (Calvo 2008). However, federal legislation and state policies, such as the *Personal Responsibility and Work Opportunity Reconciliation Act* (PRWOA), have exacerbated disparities in Medicaid coverage among immigrants. As the federal government changed the entitlement-based welfare program into block grants for states, these changes influenced eligibility criteria for welfare as well as Medicaid among immigrants. The 1996 federal welfare reform law, PROWA, strictly restricted Medicaid eligibility for legal immigrants (Derose et al. 2007). Most legally admitted immigrants who enter the USA after August 1996 are *ineligible* for full Medicaid coverage during their first 5 years in the USA (Bitler and Hoynes 2011; Calvo 2008; Ellwood and Ku 1998; Ku and Matani 2001). After 5 years, an immigrant may still not qualify for Medicaid since the income of the persons who sponsored (e.g., signing an affidavit of support) the immigrant's entry is deemed available to the immigrant (Calvo 2008; Derose et al. 2007; Ellwood and Ku 1998). These restrictions were associated with declines in the Medicaid enrollment of immigrants (Ellwood and Ku 1998) and elderly noncitizens (Nam 2011, 2012). As the federal government changed the entitlement-based welfare program into block grants for states, these changes influenced eligibility criteria for welfare as well as Medicaid among immigrants. A number of states have sought to mitigate the restrictions on Medicaid coverage posed to immigrants through the creation of state-funded health plans (Bitler and Hoynes 2011; Fremstad and Cox 2004). These programs, which vary in scope by state, provide coverage for children, pregnant mothers, the elderly, and the disabled (Fremstad and Cox 2004; Fortuny and Chaudry 2011; Pew Charitable Trusts 2014).

Another reason for the decline in Medicaid coverage among immigrants was a contemporaneous spike in federal immigration enforcement activity around the time of welfare reform in the mid-1990s. These enforcement activities which located and removed undocumented immigrants created "chilling effects" which resulted in low program take-up rates among them (Bitler and Hoynes 2011; Watson 2014). Additionally, in 2003, cuts in state budgets reduced funding for Medicaid. As a result, a wide group of individuals saw policy changes, including a termination of coverage and a freeze on enrollment. Among these groups were legal immigrants (Nimalendran and Ku 2003).

Lastly, the *2010 Affordable Care Act* (ACA) also added some disparity in Medicaid coverage. This policy expanded Medicaid eligibility to low-income individuals under age 65 with incomes below 138% of the federal poverty level (Garfield et al. 2014; Goodman 2017; Urban Institute n.d.). However, the June, 2012 Supreme Court ruled that the ACA did not require states to expand Medicaid eligibility (Schwartz and Sommers 2014), making its expansion optional for them (Garfield et al. 2014). As of July, 2017, 19 states had not yet expanded Medicaid coverage under the ACA (Families USA 2017). Low- and no-income immigrants who live in states that have not expanded Medicaid coverage thus have a higher risk of being uninsured.

Medicaid Coverage and Dental Benefits in Adults

Health insurance coverage through Medicaid and its resulting coverage for dental service use also vary by state. There is no minimum standard of coverage for adult dental care, resulting in a disparity among states which do not provide coverage, states which provide emergency coverage such as for infections and oral pain, and states which provide preventative, diagnostic, and corrective dental services (Choi 2011; Decker and Lipton 2015; Ku and Matani 2001; Schneider and Garfield 2002). There is, however, an exception for children who all receive preventative and corrective care (Centers for Medicare and Medicaid Services n.d.).

Research has demonstrated a relationship between Medicaid dental service coverage and use and a reduction in negative oral healthcare outcomes. This includes an increased probability in the use of preventative dental services (Choi 2011), a reduction in needing but not receiving care, and a relationship with both self-reported and clinically demonstrated dental health (Decker and Lipton 2015). However, prior studies did not examine the relationship among the immigrant population.

Research Question

Immigrants have lower health insurance coverage, less dental healthcare service utilization, and worse oral health compared to the US-born population. Additionally, there is a variation in health insurance coverage among immigrants. To some extent, the disparities in Medicaid coverage were created by federal and state policies. Recently admitted immigrants with low and no income are especially vulnerable. Using the Behavioral Model of Health Services Use developed by Andersen (Andersen and Newman 1973; Andersen 1968, 1995) and Yang and Hwang (2016), this study investigates the association between health insurance status (i.e., employment or private insurance, Medicaid, no insurance) and adult immigrants' utilization of dental services. In addition, the relationships are examined after controlling for factors related to their need for healthcare, resources, and the characteristics which predispose their use.

Methodology

Data

Data were drawn from the first wave of the 2003 NIS. The NIS is a multicohort prospective-retrospective panel study of new legal immigrants to the USA. The data collection occurred between May and November of 2003. Data were collected using self-reported surveys of adult and child immigrants recently admitted for legal permanent residence (LPR). The survey was conducted with a frame based on nationally representative samples of electronic administrative records. The sampling frame, that consisted of all new LPRs whose records were compiled in the 7-month period of May to November, 2003 (Jasso 2011), included 12,500 adult immigrants and 1250 children. The response rate was 68.6% for adults and 64.8% for children. This resulted in a final sample of 8573 adults and 810 children. The survey instrument was translated into 19 languages. Interviews were conducted in respondents' preferred languages including, for example, English and Spanish. Adults were interviewed in-person or on the telephone. For more detailed descriptions of the NIS, please see Jasso et al. (2004b) and Jasso et al. (2014).

Study Sample

The current study only utilized those who were between age 18 and 65 and excluded immigrants who were covered by Medicare ($N = 7578$, full sample). Among this sample, 172 (2.27%) had missing value(s) in at least one dependent or/and independent variable. In the multivariate logistic regression analysis (models I and II), we excluded those with missing values on variables used in the model and ran an analysis on the sample of 7406 people. Furthermore, in order to focus on the use of dental services in the USA, a subsample was created by excluding observations whose dental visits were all in foreign countries ($n = 1407$, see Fig. 1). This subsample ($n = 6171$, US dentist sample) contained observations of those who did not have a regular dental visit, who had one or more dental visit in the USA, and who had one or more dental visit in both the USA and foreign countries. In the multivariate logistic regression analysis (model III), we excluded those with missing values ($n = 144$, 2.33%) on variables used in the model and ran an analysis on the sample of 6027 people. Results of further descriptive analyses suggested that the list-wise deletion approach was appropriate for the current study. We did not find any significant difference between the sample of all individuals ($n = 7578$; 6171) and the sample of individuals analyzed in the regression models ($n =$ 7406; 6027).

Measures

Table 1 shows the detailed descriptions of coding schemes for all of the dependent variables, independent variables, and covariates utilized in this study.

Use of Dental Care The use of dental care (dependent variable) was measured by whether the respondent visited a dentist at least once, in the year prior to the survey.

Health Insurance Status We utilized two independent variables: *insurance status* and *type of health insurance*. Insurance status is a binary variable that indicated whether or not the respondent was covered by any health insurance (e.g., being covered by a policy through employment, private insurance, or Medicaid). Type of health insurance measured if the respondent was not covered by any health insurance, covered by employment or private insurance, or covered by Medicaid.

Covariates The control variables were selected based on the health service utilization model developed by Andersen (1968) and Yang and Hwang (2016). Their theoretical framework included three factors: characteristics which predispose use, their enabling resources, and the perceived and professionally evaluated need for healthcare service use. For characteristics which predispose use, we included the principle immigrant's visa category, their birth country, age, sex, the number of people living in the household, their relationship status, English proficiency, and whether the respondent was a new arrival or someone who had been in the USA and was adjusting their immigration status. The enabling resource factors included their employment status, completed years of education, and home ownership. The perceived need for healthcare was measured by a binary variable, health status. This variable was generated by two questions in the survey: a five-scale question asking the participant to rate his/her own health conditions and a question asking whether the participant had a health or nervous condition that limits work. If the respondents indicated that they did not have a health or nervous condition that limited work and they rated their health as good, very good, or excellent, then they were considered as having good health.

Data Analysis

The descriptive analysis, bivariate chi-squared tests, and multivariate logistic regressions were used to examine the relationship between the use of dental healthcare services and health insurance type. This study conducted three multivariate logistic regression models using the same dependent variable and the same array of covariates. Model I and model II were performed with the full sample. Model I used the binary

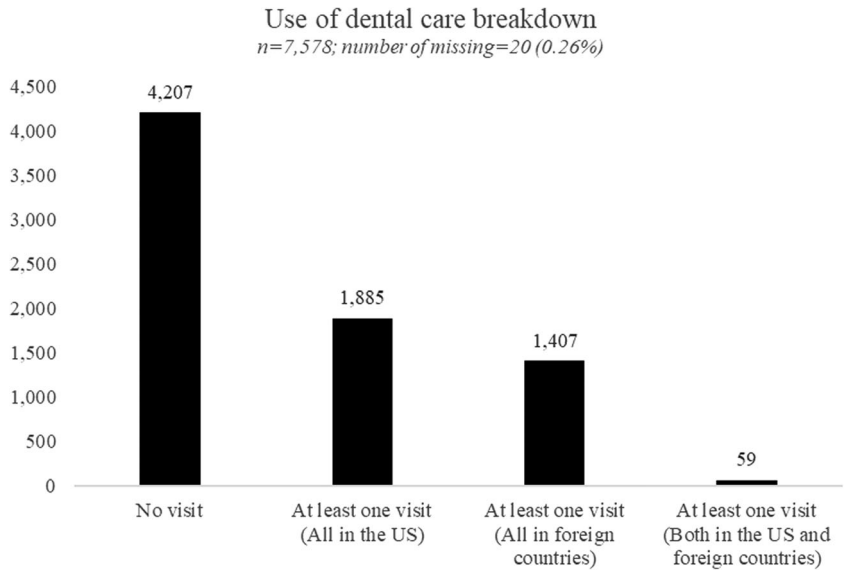

Fig. 1 Use of dental care breakdown (full sample, $n = 7578$, number of missing = 20 (0.26%))

variable insurance status (i.e., being insured and uninsured) as the independent variable. Model II used the types of health insurance (i.e., Medicaid, private/employment insurance, uninsured) as the independent variable. To further examine the relationship between the use of dental services in the USA and Medicaid, model III excluded the observations whose dental visits were all in foreign countries ($n = 1407$, see Fig. 1 for details) and included only those immigrants who either did not have a regular dental visit or had at least one dental visit in the USA during the prior year to the survey, henceforth referred as the "US dentist sample." An additional bivariate analysis was also conducted to examine the relationship between health insurance type and dental expense coverage on a subsample of insured immigrants who had visited a dentist during the year prior to the survey.

Results

Descriptive Analysis

Among the full sample ($n = 7578$), about 36% of LPR immigrated to the USA for family reunification. Others came to the USA as refugees (24.65%) or for employment-related purposes (21.14%). A smaller portion of immigrants became LPRs due to the Diversity Visa Program (17.91%). About 35% of the immigrants had employment or private insurance, 4% had Medicaid coverage, and 61% were uninsured. During the year prior to the survey, about 56% of the sample did not have a regular dental visit and only 44% had one or more dental visit. Detailed descriptions on the sample can be seen in Table 2. Table 2 also includes detail descriptions on the US dentist sample ($n = 6171$).

Bivariate and Multivariate Analysis

Tables 3 and 4 show the results of the bivariate analysis on the relationship between regularly scheduled dental services and health insurance status among both the full sample and the US dentist sample. Results revealed an association between an insured respondent (1: insured; 0: not insured) and the likelihood of having a regularly scheduled dental service ($\chi^2(1) = 233.13, p < .001$ for the full sample; $\chi^2(1) = 682.23, p < .001$ for the US dentist sample). Insured, compared to uninsured immigrants, were significantly more likely to have a regularly scheduled dental service. As we further explored the type of health insurance, the role of Medicaid varied in the two analytic samples. The association between health insurance status and regularly scheduled dental services appeared attributed to private/employment health insurance, instead of Medicaid, in the full sample. As 57.44% of immigrants with employment or private-based health insurance had a regularly scheduled dental service, the percentage of immigrants with no health insurance and with Medicaid were similarly low—37.44% and 36.71%, respectively ($\chi^2(2) = 278, p < .001$). Whereas, in the US dentist sample, the Medicaid population, compared to the uninsured population, had a higher percentage of those who had a regularly scheduled dental service—25.51% and 18.41%, respectively ($\chi^2(2) = 755.59, p < .001$).

The results of the multivariate analyses further confirmed these findings. The results of model I revealed that, compared to immigrants without any health insurance, insured immigrants were 60% more likely to have a regularly scheduled dental service ($OR = 1.603, CI = 1.432\sim1.793$), when characteristics which predispose use, enabling resources, and the need for healthcare factors are held constant. The type of insurance mattered. Model II showed that compared to immigrants without any health insurance, those with private/

Table 1 The data management scheme

	Variable	Description	Coding
Independent variable 1	Insurance status	The participant's insurance status	0: Not covered by any health insurance in the USA 1: Insured by private, employment, or US government insurance (e.g., Medicaid)
Independent variable 2	Type of health insurance	Type of health insurance the participant has	0: Not covered by any health insurance 1: Employment or private insurance 2: Medicaid
Dependent Variable	Use of dental care	Whether the participant had at least one dental visit during the year prior to the survey	1: At least one visit 0: No visit
Control variable: predisposing	Visa category	Visa category of the participant	1: Employment preference 2: Family preference 3: Diversity 4: Refugees and others (reference: employment preference)
	Birth country	Birth country of the participant	1: North America and Europe 2: Latin and Central America 3: Asia and Pacific Oceania 4: Africa, Middle East, and other (reference: North America, UK, and Europe)
	New arrival	Whether the participant was a new arrival at interview or adjusting their immigration status	0: Adjusting status 1: New arrival
	English proficiency score	English proficiency score measured by the sum of two ordinal variables asking how well the participant understands English and how well the participant speaks English	Ranged from 1 to 7, higher suggested more proficient
	Sex	The participant's sex	0: Male 1: Female
	Age	The participant's age at interview (2003—year born)	N/A
	Number of people living in the household	The number of people living in the participant's household	Numbers over 15 were coded as 15
	Relationship status	The participant's relationship status	1: Married or cohabiting 2: Separated, divorced, or widowed 3: Never married or not cohabiting (reference: never married or not cohabiting)
Control variable: resource	Work status	The participant's working status	1: Working now 2: Unemployment, looking for job, temporary laid off 3: Disabled, retired, homemaker, other (reference: working now)
	Years of education completed	The total years of schooling that the participant completed	Years over 25 were coded as 25
	Home ownership	Whether the participant or his/her spouse/partner owned or bought the place s/he lives	0: No 1: Owned or bought a home at interview
Control variable: need for healthcare	Good health	What the participant says about his/her own health. This variable is generated by two variables: (a) a five-scale question asking the participant to rate his/her own health conditions and (b) a question asking whether the participant had a health or nervous condition that limits work.	1: Good or excellent health 0: Bad health

employment insurance were 74% more likely to have a regularly scheduled dental service (*OR = 1.743, CI = 1.548~1.964*), when holding covariates constant. Medicaid coverage was not significantly associated with the likelihood of having a regularly scheduled dental service (*OR = .972, CI = 1.548~1.964*). A separate analysis was conducted in

Table 2 Characteristics of respondents

Categorical variable	Full sample ($n = 7578$)			US dentist sample ($n = 6171$)		
	%	*n*	Total *n* (% of missing)	%	*n*	Total *n* (% of missing)
Use of dental care			7559 (0.25%)			6152 (0.31%)
At least one visit during the year prior to the survey	44.23	3352		31.52	1945	
No visit	55.52	4207		68.17	4207	
Types of health insurance			7540 (0.50%)			6141 (0.49%)
Not covered by any health insurance in the USA	61.03	4625		57.49	3548	
Insured by employment or private health insurance	34.68	2628		38.07	2349	
Insured by Medicaid	3.79	287		3.95	244	
Visa category			7578 (0.00%)			6171 (0.00%)
Employment preference	21.14	1602		23.06	1423	
Family preference	36.30	2751		36.61	2259	
Diversity	17.91	1357		14.42	890	
Refugees and other	24.65	1868		25.91	1599	
Birth country			7565 (0.17%)			6158 (0.21%)
North America and Europe	17.95	1360		15.70	969	
Latin and Central America	36.53	2768		38.55	2379	
Asia and Pacific Oceania	31.39	2379		30.74	1897	
Africa, Middle East, and other	13.96	1058		14.80	913	
New arrival			7578 (0.00%)			6171 (0.00%)
New arrival	46.16	4080		63.68	3930	
Adjusting status	53.84	3498		36.32	2241	
Sex			7578 (0.00%)			6171 (0.00%)
Male	49.13	3723		50.75	3132	
Female	50.87	3855		49.25	3039	
Relationship status			7572 (0.08%)			6166 (0.08%)
Married or cohabiting	71.48	5417		72.13	4451	
Separated, divorced, or widowed	6.18	468		6.37	393	
Never married or not cohabiting	22.26	1687		21.42	1322	
Working status			7569 (0.12%)			6164 (0.11%)
Working now	62.56	4741		65.37	4034	
Unemployment, looking for job, temporarily laid off	17.95	1360		15.67	967	
Disabled, retired, homemaker, other	19.37	1468		18.85	1163	
Home ownership			7527 (0.67%)			6127 (0.71%)
Own or buy a home	16.38	6286		18.93	1168	
No	82.95	1241		80.36	4959	
Good health			7572 (0.08%)			6165 (0.10%)
Good or excellent health	91.70	6949		91.44	5643	
Bad health	8.22	623		8.46	522	
Continuous variable	Mean (SD)	Median	Total *n* (% of missing)	Mean (SD)	Median	Total *n* (% of missing)
Age	36.62 (10.69)	35	7578 (0.00%)	36.49 (10.59)	35	6171 (0.00%)
Number of people living in the household	3.70 (1.95)	3	7554 (0.32%)	3.64 (1.91)	3	6153 (0.29%)
Years of education completed	13.08 (4.72)	13	7557 (0.28%)	12.99 (4.81)	13	6154 (0.28%)
English proficiency score (1-7, higher suggested more proficient)	4.56 (2.02)	5	7560 (0.24%)	4.67 (2.02)	5	6157 (0.23%)
Time span (year) from the year of US (non)immigrant visa to the interview	1.56 (3.50)	0	5573 (26.46%)	1.97 (3.82)	0	4242 (31.26%)
Wage and salary income in the year prior to the survey	29,992 (73,691)	15,000	2888 (61.89%)	32,272 (63,999)	19,000	2361 (61.74%)

model III using the US dentist sample. The results of model III suggested that both private/employment insurance (*OR = 2.310, CI = 2.012~2.652*) and Medicaid (*OR = 1.419, CI = 1.023~1.970*) were significantly associated with an increase of dental service utilization—although Medicaid had a smaller effect size. Other factors associated with the likelihood of regular dental healthcare service use included their visa category, birth country, new arrival status, English proficiency score, sex, their working status, years of education completed, and whether the immigrant owned a home. For detailed descriptions on the results of the logistic regression model, please see Table 5.

The fact that having Medicaid either did not improve the use of dental services in the full sample or had a smaller effect size in predicting the use of dental services in the US dentist sample was interesting. First, it is reasonable to expect that the role of immigrants' use of dental services through Medicaid might be diluted when the analytic sample did not exclude

Table 3 The relationship between immigrants' use of dental service and insurance status

Full sample ($n = 7578$, number of missing = 52 (0.69%))				US dental visit sample ($n = 6171$, number of missing = 44 (0.71%))			
	Whether the participant had at least one dental visit during the year prior to the survey				Whether the participant had at least one dental visit during the year prior to the survey		
Health insurance status (row%)	No	Yes	Total	Health insurance status (row%)	No	Yes	Total
Not covered by any health insurance	2889	1729	4618	Not covered by any health insurance	2889	652	3541
	62.56%	37.44%	100%		81.59%	18.41%	100%
Insured	1297	1611	2908	Insured	1297	1289	2586
	44.60%	55.40%	100%		50.15%	49.85%	100%
Total	4186	3340	7526	Total	4186	1941	6127
	55.62%	44.38%	100%		68.32%	31.68%	100%
$\chi^2(1) = 233.13\ (p < .001)$				$\chi^2(1) = 682.23\ (p < .001)$			

observations whose dental visits were all in foreign countries. The coverage of Medicaid might only influence immigrants' dental visits in the USA. Further, another potential explanation is states' discretion in the coverage of Medicaid dental benefits (see Ku and Matani 2001; Schneider and Garfield 2002). Perhaps, the dental coverage was not sufficient, and the out-of-pocket expenses were too high. To investigate the validity of this hypothesis, we ran a bivariate analysis on a subsample of immigrants who had visited a dentist during the year prior to the survey and who were covered by private, employment health insurance, or Medicaid ($n = 1605$). The results revealed an association between health insurance type and dental expense coverage ($\chi^2\ (1) = 48.03,\ p < .001$). Approximately 80% of dental expenses were fully or partly covered by private and employment-based health insurances, whereas only 50% of dental expenses were fully or partly covered by Medicaid. For detailed descriptions, please see Table 6.

Discussions

In this study, we examined dental service use disparities among immigrants in the USA using nationally representative data. In the discussion that follows, we highlight some of the key findings. First, consistent with previous literature (e.g., Pandey and Kagotho 2010), we found that the majority of LPRs were not covered by any health insurance (61%). The proportion of the uninsured among nonelderly immigrants appeared to be much higher than the general US population—the estimates for the uninsured rate among the nonelderly US population ranged from 10 to 18% from 1998 to 2016 (The Henry J. Kaiser Family Foundation 2017). We also found that immigrants had a low use of oral healthcare: about 56% of LPRs did not have a regularly scheduled dental service. The results highlighted immigrants' vulnerability in oral health. The findings of this study also reinforced the association between health insurance coverage and the use of

Table 4 The relationship between immigrants' use of dental service and insurance type

Full sample ($n = 7578$, number of missing = 52 (0.69%))				US dental visit sample ($n = 6171$, number of missing = 44 (0.71%))			
	Whether the participant had at least one dental visit during the year prior to the survey				Whether the participant had at least one dental visit during the year prior to the survey		
Health insurance status (row%)	No	Yes	Total	Health insurance status (row%)	No	Yes	Total
Not covered by any health insurance	2889	1729	4618	Not covered by any health insurance	2889	652	3541
	62.56%	37.44%	100%		81.59%	18.41%	100%
Employment or private health insurance	1116	1506	2622	Employment or private health insurance	1116	1227	2343
	42.56%	57.44%	100%		47.63%	52.37%	100%
Medicaid	181	105	286	Medicaid	181	62	243
	63.29%	36.71%	100%		74.49%	25.51%	100%
Total	4186	3340	7526	Total	4186	1941	6127
	55.62%	44.38%	100%		68.32%	31.68%	100%
$\chi^2(2) = 278.00\ (p < .001)$				$\chi^2(2) = 755.59\ (p < .001)$			

Table 5 The results of logistic regression on the likelihood of having at least one dental visit during the year prior to the survey (1: yes; 0: no) using the full sample ($n = 7578$, number of missing = 172 (2.27%)) and the US dental visit sample ($n = 6171$, number of missing = 144 (2.33%))

	Variable	Model I Odds ratio ($n = 7406$)	Model II Odds ratio ($n = 7406$)	Model III Odds ratio ($n = 6027$)
Independent variable 1	Insurance status *(ref: not covered by any health insurance)*			
	Insured by private, employment, or US government insurance (e.g., Medicaid)	1.603***		
Independent variable 2	Types of health insurance *(ref: not covered by any health insurance)*			
	Employment or private insurance		1.743***	2.310***
	Medicaid		0.972	1.419*
Predisposing	Visa category *(ref: employment preference)*			
	Family preference	0.701***	0.709***	0.584***
	Diversity	0.663***	0.686***	0.369***
	Refugees and others	0.720***	0.747**	0.593***
	Birth country *(ref: North America and Europe)*			
	Latin and Central America	0.631***	0.625***	0.702**
	Asia and Pacific Oceania	0.470***	0.466***	0.461***
	Africa, Middle East, and other	0.300***	0.299***	0.478***
	New arrival *(ref: adjusting status)*			
	New arrival	1.358***	1.366***	0.269***
	English proficiency score	1.063***	1.059***	1.157***
	Sex *(ref: male)*			
	Female	1.432***	1.440***	1.416***
	Age	1.004	1.004	1.001
	Number of people living in the household	1.029*	1.032*	1.013
	Relationship status *(ref: never married or not living with someone)*			
	Married or cohabiting	1.050	1.051	1.124
	Separated, divorced, or widowed	0.987	1.003	1.244
Resource	Working status *(ref: working now)*			
	Unemployment, looking for job, temporary laid off	0.850*	0.865*	0.686**
	Disabled, retired, homemaker, other	0.774***	0.788**	0.753**
	Years of education completed	1.058***	1.056***	1.039***
	Home ownership *(ref: no)*			
	Owned or bought a home	1.110	1.089	1.214*
Need for healthcare	Good health *(ref: bad health)*			
	Good or excellent health	0.871	0.854	0.870
	Model fit	LR $\chi^2(20) = 690.62$*** Pseudo $R^2 = 6.79\%$ Hosmer-Lemeshow $\chi^2(8) = 12.16$ AUC = 0.675	LR $\chi^2(20) = 708.92$*** Pseudo $R^2 = 6.97\%$ Hosmer-Lemeshow $\chi^2(8) = 16.94$* AUC = 0.678	LR $\chi^2(20) = 1557.76$*** Pseudo $R^2 = 20.66\%$ Hosmer-Lemeshow $\chi^2(8) = 51.14$*** AUC = 0.794

*$p < .05$; **$p < .01$; ***$p < .001$, two-tailed test

dental services, as previous literature and theoretical frameworks posited (e.g., Akresh 2009; Cruz et al. 2010; Yang and Hwang 2016). Immigrants who did not have any health insurance were less likely to have a regularly scheduled dental service compared to those who were insured.

Second, the type of insurance mattered. Findings of bivariate and multivariate analysis implied that unlike employed-based health insurance, Medicaid had either no or a small impact on immigrants' use of dental healthcare services. Future studies should also examine if LPRs with Medicaid

Table 6 The relationship between health insurance status and dental expense coverage (n = 1605)

How the dental expenses were covered by health insurance			
Health insurance status (row%)	Fully or partly covered	Not covered at all and not settled yet	Total
Employment or private health insurance	1194	306	1500
	79.6%	20.4%	100%
Medicaid	53	52	105
	50.48%	49.52%	100%
Total	358	1247	1605
	22.31%	77.69%	100%
$\chi^2(1) = 48.03$ ($p < .001$)			

also skip other preventive healthcare services including Pap tests, colonoscopies, and mammograms.

Third, it appears that out-of-pocket expenses may be one of the reasons for skipping oral healthcare use among LPRs. This was evident when we conducted a subanalysis of insured immigrants and examined their level of dental expense coverage during the year prior to the survey. The results suggested that Medicaid coverage is insufficient for increasing the use of dental services among immigrants. This is, probably, also due to the disparity in its dental benefits among states in the year of 2003. Medicaid dental coverage for adults was comprised of optional benefits which were administered by, and varied between, states (Ku and Matani 2001; Schneider and Garfield 2002). As Medicaid and its coverage for dental service use still varies in the current state health policies, future studies should further investigate the current disparity in dental expense coverage and its impacts on the immigrant community.

Finally, the results produced contradictory findings concerning the effects of acculturation. Two variables representing acculturation—new arrival and English proficiency score (see Yang and Hwang 2016)—had opposite effects on the use of dental services. Consistent with previous findings, a higher level of English proficiency was associated with an increase of oral healthcare service utilization. Conversely, the current study found that newly arrived immigrants, compared to those who adjusted their immigration status to LPR, were more likely to use dental services. This result contradicted the previous finding which suggested that a longer stay in the host country was associated with a higher level of dental service utilization (Mao et al. 2015). Future studies should further investigate the roles these constructs play in acculturation, as well as their effects on immigrants' health service use.

Study Limitations and Implications

One of the major limitations of this study is the explanatory power of the models. The pseudo R-squared for models I and II showed that approximately 7% of the variation in the use of dental services was explained, whereas the pseudo R-squared for model III showed that approximately 21% of the variation in the use of dental services was explained. The Hosmer-Lemeshow χ^2 was insignificant for model I, indicating good model fit. However, the Hosmer-Lemeshow χ^2 was significant for models II and III, suggesting a poor fit for this model. Our models were guided by the existing literature and the theoretical frameworks that explain health service use; they did not, however, fit the data well when only immigrants were involved suggesting a need for further scrutiny in model specification.

Further, limitations were also generated due to the choice of data. The Medicaid coverage and policy has experienced great changes since the ACA. There have also been shifts in legal immigrants' US experience. Those changes are not captured in the current study, which used data from the 2003 NIS. Moreover, some of the critical variables of acculturation (e.g., immigrants' time span (year) from the year of US (non) immigrant visa to the interview) and social economic status (e.g., wage and salary income) were not used in the models due to a high percentage of missing data (see Table 2). Although proxy variables were used (e.g., whether the participant was a new arrival at interview or adjusting their immigration status, English proficiency score, work status, years of education completion, and home ownership), the lack of certain variables might contribute to the models' poor fit.

In spite of these limitations, this study is useful for its unique contribution to filling the lack of scientific understanding about immigrants' use of dental care. First, it is the only empirical study investigating the association between the type of health insurance and immigrants' use of dental care. As previous studies have compared health service use among US-born with naturalized citizens, and noncitizens using other sources of data, these data do not account for critical information such as immigration pathways. By using the only available nationally representative dataset which gathers detailed information about their country of origin and immigration pathways, the current study provides important information

for social work practitioners. Future studies should continue investigating immigrants' health service use by analyzing more current data.

This study suggests that although employment-based or private insurance was significantly associated with more use of dental services, Medicaid was either not associated with or had smaller effect size in predicting immigrants' use of dental services (see Table 5). We tested to see if this had anything to do with their level of reimbursement. It appears that Medicaid reimbursement did not cover dental healthcare service expenses enough to make it possible for beneficiaries to use. This is also probably related to the disparity in Medicaid dental benefits among states. Future studies should investigate immigrants' use of dental care at different levels of Medicaid and dental benefit coverage. Studies should also investigate how Medicaid covers actual dental expenses in different states by using administrative (nonsurvey) data. Comparing the effects of Medicaid on the use of dental services among the immigrant and US-born population may also be helpful in understanding factors that are unique to immigrants' health service utilization.

The current study highlighted the poor use of dental services among immigrants as well as the high proportion of uninsured immigrants. Although the majority of immigrants in this sample were working during the interview, the percentage of those that were covered by employment or private insurance remained low. Even under the ACA, immigrants are almost twice as likely to be uninsured. According to recent 2016 statistics, among the nonelderly population, 17% of LPRs were uninsured—which is a much higher percentage than the uninsured (i.e., 9%) population of US-born and naturalized citizens (The Henry J. Kaiser Family Foundation 2017). Due to the restriction included in the PRWORA of 1996 that restricted low-income legal immigrants from federal programs (e.g., Medicaid), immigrants must prove at least 5 years of residence in the USA to qualify for these benefits. During the 5-year waiting period, the LPRs are eligible to purchase coverage through the ACA and may be eligible to receive subsidies for this coverage, but it does not appear that they are doing so—given that they are nearly twice as likely to be uninsured as US citizens. The uninsured rate among the recent LPRs is probably even higher. It appears that legal immigrants' enrollment in federally subsidized insurance plans has remained low or dipped in recent months due to the fear that their information may be used to identify, confiscate their LPR status, or deport them and their relatives (Cohen and Schpero 2018; Kline 2017). The high percentage of uninsured immigrants warrants further examination.

To increase immigrants' well-being, it is imperative that the issue of low health insurance coverage is addressed. Additionally, as the results of this study have suggested, Medicaid reimbursement does not cover dental healthcare service expenses. It is important to explore ways to expand Medicaid coverage for dental care, including making dental care a required benefit in Medicaid. Meanwhile, programs and strategies, such as partnerships with schools of dentistry, can be developed to offer bona fide service learning opportunities to address community needs (see Kunzel et al. 2010).

Conflict of Interest The authors declare that they have no conflict of interest.

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

Funding This study was not funded.

References

Akresh, I. R. (2007). Dietary assimilation and health among Hispanic immigrants to the United States. *Journal of Health and Social Behavior, 48*(4), 404–417.

Akresh, I. R. (2009). Health service utilization among immigrants to the United States. *Population Research and Policy Review, 28*(6), 795–815. https://doi.org/10.1007/s11113-009-9129-6.

Akresh, I. R., & Frank, R. (2008). Health selection among new immigrants. *American Journal of Public Health, 98*(11), 2058–2064. https://doi.org/10.2105/ajph.2006.100974.

Andersen, R. M. (1968). *A behavioral model of families' use of health services*. Chicago: Center for Health Administration Studies.

Andersen, R. M. (1995). Revisiting the behavioral model and access to medical care: does it matter? *Journal of Health and Social Behavior, 36*(1), 1–10.

Andersen, R., & Newman, J. F. (1973). Societal and individual determinants of medical care utilization in the United States. *The Milbank Memorial Fund Quarterly. Health and Society, 51*(1), 95–124. https://doi.org/10.2307/3349613.

Antecol, H., & Bedard, K. (2006). Unhealthy assimilation: why do immigrants converge to American health status levels? *Demography, 43*(2), 337–360. https://doi.org/10.1353/dem.2006.0011.

Antecol, H., & Bedard, K. (2015). Immigrants and immigrant health. In B. R. Chiswick & P. W. Miller (Eds.), *Handbook of the economics of international migration* (Vol. 1, pp. 271–314). Amsterdam: North-Holland.

Bitler, M., & Hoynes, H. W. (2011). *Immigrants, welfare reform, and the U.S. safety net*. Cambridge: National Bureau of Economic Research.

Brown, A., & Stepler, R. (2016). *Statistical portrait of the foreign-born population in the United States*. Retrieved May 31, 2018, from Pew Research Center website: http://www.pewhispanic.org/2016/04/19/statistical-portrait-of-the-foreign-born-population-in-the-united-states-2014-key-charts/.

Calvo, J. M. (2008). The consequences of restricted health care access for immigrants: lessons from Medicaid and SCHIP. *Annals of Health Law, 17*(2), 175–212.

Centers for Medicare and Medicaid Services. (n.d.). Dental Care| Medicaid.gov. Retrieved May 31, 2018, from Centers for Medicare & Medicaid Services websitehttps://www.medicaid.gov/medicaid/benefits/dental/index.html.

Choi, M. K. (2011). The impact of Medicaid insurance coverage on dental service use. *Journal of Health Economics, 30*(5), 1020–1031. https://doi.org/10.1016/j.jhealeco.2011.08.002.

Cohen, M. S., & Schpero, W. L. (2018). Household immigration status had differential impact on Medicaid enrollment in expansion and nonexpansion states. *Health Affairs, 37*(3), 394–402. https://doi.org/10.1377/hlthaff.2017.0978.

Cruz, G. D., Xue, X., LeGeros, R. Z., Halpert, N., Galvis, D. L., & Tavares, M. (2001). Dental caries experience, tooth loss, and factors associated with unmet needs of Haitian immigrants in New York City. *Journal of Public Health Dentistry, 61*(4), 203–209. https://doi.org/10.1111/j.1752-7325.2001.tb03392.x.

Cruz, G. D., Chen, Y., Salazar, C. R., Karloopia, R., & LeGeros, R. Z. (2010). Determinants of oral health care utilization among diverse groups of immigrants in New York City. *The Journal of the American Dental Association, 141*(7), 871–878. https://doi.org/10.14219/jada.archive.2010.0286.

Cunningham, S. A., Ruben, J. D., & Narayan, K. M. V. (2008). Health of foreign-born people in the United States: a review. *Health and Place, 14*(4), 623–635. https://doi.org/10.1016/j.healthplace.2007.12.002.

Decker, S. L., & Lipton, B. J. (2015). Do Medicaid benefit expansions have teeth? The effect of Medicaid adult dental coverage on the use of dental services and oral health. *Journal of Health Economics, 44*, 212–225. https://doi.org/10.1016/j.jhealeco.2015.08.009.

Derose, K. P., Escarce, J. J., & Lurie, N. (2007). Immigrants and health care: sources of vulnerability. *Health Affairs, 26*(5), 1258–1268. https://doi.org/10.1377/hlthaff.26.5.1258.

Ellwood, M. R., & Ku, L. (1998). Welfare and immigration reforms: unintended side effects for Medicaid. *Health Affairs, 17*(3), 137–151. https://doi.org/10.1377/hlthaff.17.3.137.

Families USA. (2017). *A 50-state look at Medicaid expansion*. Retrieved May 31, 2018, from Families USA website: http://familiesusa.org/product/50-state-look-medicaid-expansion.

Finch, B. K., & Vega, W. A. (2003). Acculturation stress, social support, and self-rated health among Latinos in California. *Journal of Immigrant Health, 5*(109), 109–117. https://doi.org/10.1023/A:1023987717921.

Fortuny, K., and Chaudry, A. (2011). *A comprehensive review of immigrant access to health and human services.* Retrieved October 15, 2018, from Urban Institute website: https://www.urban.org/research/publication/comprehensive-review-immigrant-access-health-and-human-services/view/full_report.

Fremstad, S., & Cox, L. (2004). *Covering new Americans: a review of federal and state policies related to immigrants' eligibility and access to publicly funded health insurance.* Retrieved October 15, 2018, from Henry J. Kaiser Family Foundation website: https://kaiserfamilyfoundation.files.wordpress.com/2013/01/covering-new-americans-a-review-of-federal-and-state-policies-related-to-immigrants-eligibility-and-access-to-publicly-funded-health-insurance-report.pdf.

Garfield, R., Damico, A., Stephens, J., & Rouhani, S. (2014). *The coverage gap: uninsured poor adults in states that do not expand Medicaid—an update*. Retrieved October 15, 2018, from the Henry J. Kaiser Family Foundation website: http://files.kff.org/attachment/the-coverage-gap-uninsured-poor-adults-in-states-that-do-not-expand-medicaid-issue-brief.

Goodman, L. (2017). The effect of the affordable care act Medicaid expansion on migration. *Journal of Policy Analysis and Management, 36*(1), 211–238. https://doi.org/10.1002/pam.21952.

Haumschild, M. S., & Haumschild, R. J. (2009). The importance of oral health in long-term care. *Journal of the American Medical Directors Association, 10*(9), 667–671. https://doi.org/10.1016/j.jamda.2009.01.002.

Jasso, G. (2011). Migration and stratification. *Social Science Research, 40*(5), 1292–1336.

Jasso, G., Massey, D. S., Rosenzweig, M. R., & Smith, J. P. (2004a). Immigrant health: selectivity and acculturation. In National Research Council (US) panel on race, and health in later life. In N. B. Anderson, R. A. Bulatao, & B. Cohen (Eds.), *Critical perspectives on racial and ethnic differences in health in late life*. Washington, DC: National Academies Press.

Jasso, G., Massey, D. S., Rosenzweig, M. R., & Smith, J. P (2004b). *The U.S. New Immigrant Survey: overview and preliminary results based on the new-immigrant cohorts of 1996 and 2003*. Retrieved May 31, 2018, from http://nis.princeton.edu/downloads/nis_2003/JMRS-IRSS-NIS-Overview-2005.pdf.

Jasso, G., Massey, D. S., Rosenzweig, M. R., and Smith, J. P. (2014). *The New Immigrant Survey 2003 Round 2 (NIS-2003-2)*. Retrieved May 31, 2018, from the New Immigrant Survey websitehttp://nis.princeton.edu.

Kline, N. (2017). Pathogenic policy: immigrant policing, fear, and parallel medical systems in the US south. *Medical Anthropology, 36*(4), 396–410. https://doi.org/10.1080/01459740.2016.1259621.

Ku, L., & Matani, S. (2001). Left out: immigrants' access to health care and insurance. *Health Affairs, 20*(1), 247–256. https://doi.org/10.1377/hlthaff.20.1.247.

Kunzel, C., Kaur, S., Ahluwalia, K., Darlington, T., Kularatne, P., Burkett, S., … Edelstein, B. (2010). Considering theory-based reflection in the service-learning training of advanced education in general dentistry (AEGD) residents. *Journal of Dental Education, 74*(1), 58–64.

Lee, S., O'Neill, A., Park, J., Scully, L., & Shenassa, E. (2012). Health insurance moderates the association between immigrant length of stay and health status. *Journal of Immigrant and Minority Health, 14*(2), 345–349.

Mao, W., Wu, B., & Chi, I. (2015). Oral health among older Chinese immigrants and implications for social work practice. *Health and Social Work, 40*(3), e75–e82. https://doi.org/10.1093/hsw/hlv035.

Maserejian, N. N., Trachtenberg, F., Hayes, C., & Tavares, M. (2008). Oral health disparities in children of immigrants: dental caries experience at enrollment and during follow-up in the New England Children's amalgam trial. *Journal of Public Health Dentistry, 68*(1), 14–21. https://doi.org/10.1111/j.1752-7325.2007.00060.x.

McGee, S. A., & Claudio, L. (2017). Nativity as a determinant of health disparities among children. *Journal of Immigrant and Minority Health*, Advance online publication 1–12. https://doi.org/10.1007/s10903-017-0667-4.

Nam, Y. (2011). Welfare reform and older immigrant adults' Medicaid and health insurance coverage: changes caused by chilling effects of welfare reform, protective citizenship, or distinct effects of labor market condition by citizenship? *Journal of Aging and Health, 24*(4), 616–640. https://doi.org/10.1177/0898264311428170.

Nam, Y. (2012). Welfare reform and elderly immigrants' health insurance coverage: the roles of federal and state Medicaid eligibility rules. *Journal of Gerontological Social Work, 54*(8), 819–836. https://doi.org/10.1080/01634372.2011.614679.

Nimalendran, S., & Ku, L. (2003). *Losing out: states are cutting 1.2 to 1.6 million low-income people from Medicaid, SCHIP and other state health insurance programs*. Retrieved October 15, 2018, from Center on Budget and Policy Priorities website: https://www.cbpp.org/research/losing-out-states-are-cutting-12-to-16-million-low-income-people-from-medicaid-schip-and.

Pandey, S., & Kagotho, N. (2010). Health insurance disparities among immigrants: are some legal immigrants more vulnerable than others? *Health and Social Work, 35*(4), 267–279. https://doi.org/10.1093/hsw/35.4.267.

Pew Charitable Trusts (2014). *Mapping public benefits for immigrants in the States*. Retrieved October 15, 2018, from the Pew Charitable Trusts website https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2014/09/mapping-public-benefits-for-immigrants-in-the-states .

Sanders, A. E. (2010). A Latino advantage in oral health-related quality of life is modified by nativity status. *Social Science and Medicine, 71*(1), 205–211. https://doi.org/10.1016/j.socscimed.2010.03.031.

Schneider, A., & Garfield, R. (2002). *The Medicaid resource book*. Washington: The Kaiser Commission on Medicaid and the Uninsured.

Schwartz, A. L., & Sommers, B. D. (2014). Moving for Medicaid? Recent eligibility expansions did not induce migration from other states. *Health Affairs, 33*(1), 88–94. https://doi.org/10.1377/hlthaff.2013.0910.

The Henry J. Kaiser Family Foundation (2017). *Key facts about the uninsured population*. Retrieved October 15, 2018, from the Henry J. Kaiser Family Foundation website: http://files.kff.org/attachment/Fact-Sheet-Key-Facts-about-the-Uninsured-Population.

Urban Institute (n.d.). *Poor uninsured Americans eligible for Medicaid under ACA expansion*. Retrieved October 15, 2018, from Urban Institute website: http://www.urban.org/policy-centers/health-policy-center/projects/poor-uninsured-americans-eligible-medicaid-under-aca-expansion.

Watson, T. (2014). Inside the refrigerator: immigration enforcement and chilling effects in Medicaid participation. *American Economic Journal: Economic Policy, 6*(3), 313–338. https://doi.org/10.1257/pol.6.3.313.

Wilson, F. A., Wang, Y., Stimpson, J. P., McFarland, K. K., & Singh, K. P. (2016). Use of dental services by immigration status in the United States. *The Journal of the American Dental Association, 147*(3), 162–169. https://doi.org/10.1016/j.adaj.2015.08.009.

Yang, P. Q., & Hwang, S. H. (2016). Explaining immigrant health service utilization: a theoretical framework. *SAGE Open, 6*(2), 1–15. https://doi.org/10.1177/2158244016648137.