

Immigrant-Native Disparities in Perceived and Actual Met/Unmet Need for Medical Care

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Published online: 10 September 2014

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Abstract This study compares the unmet medical needs of foreign-born and U.S.-born adults. Both subjective and objective unmet medical needs are considered, and the roles of duration of U.S. residence, English language proficiency, and state-level destination type in explaining immigrants' unmet need are assessed. Multivariate analyses of the 2007–2009 Medical Expenditure Panel Survey reveal that immigrants reported less subjective unmet need and equal or greater objective unmet need vis-à-vis natives. Among immigrants only, living less than 5 years in the U.S. and in a new or traditional, high-skill destination state versus a traditional, low-skill state is significantly associated with greater objective, but not subjective, unmet need. While this study reinforces the importance of stable health insurance and, to a lesser extent, income for gaining entry to the formal healthcare system for both immigrants and natives, it also highlights the need to identify factors that influence immigrants' positive health-related perceptions, including characteristics of the healthcare system in origin countries.

Keywords Unmet medical need · Immigrants · MEPS · Behavioral model · Health care disparities

Background

Providing healthcare to immigrants often presents a greater challenge than it does for the U.S. born [1–3]. This

difficulty reflects immigrants' extraordinary circumstances: facing common barriers to healthcare (e.g., undereducation, low income) in addition to poor English proficiency [4, 5], limited knowledge of community resources, and legislative obstacles to health insurance coverage such as the 1996 residency requirement for federal benefits [6–9]. Consequently, immigrants may have greater unmet medical needs than their U.S.-born counterparts. However, while immigrants and non-citizens receive less preventive and ambulatory care than natives [3, 10, 11], several studies suggest that natives are more likely to report forgone care or difficulty in receiving necessary care than immigrants [8, 12]. Insofar as unmet medical needs influence the timing of diagnosis and downstream health events, such as severe morbidity and, ultimately, mortality [13, 14], immigrants may face deteriorating health and higher acute care expenditures than the U.S.-born.

The present study used recent data from the Medical Expenditure Panel Survey (MEPS) to compare immigrants' and natives' unmet medical needs and to assess the role of English language proficiency, length of U.S. residence, and state-level destination type in explaining differences in unmet medical need among the foreign born. Originally appearing in the family planning literature (i.e., unmet need for contraceptives) [15], unmet need for medical care is most often measured using a subjective, or perceived, survey question, such as “During the past 12 months, was there ever a time when you felt that you needed healthcare but did not receive it?” [16–18]. The current study used a similar question as well as a more objective measure of healthcare utilization. Objective measures of unmet need are commonly used in the pediatric literature to indicate inadequate or poorly timed care given the importance of up-to-date immunizations for children [19, 20].

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Methods

Data and Participants

Data came from the 2007–2009 Medical Expenditure Panel Survey (MEPS, Panels 12 and 13), a nationally representative survey, with an oversampling of Hispanics and blacks, conducted by the Agency for Healthcare Research and Quality (AHRQ) since 1996. The sampling frame includes households that participated in the previous year's National Health Interview Survey (NHIS); additional survey design details are described elsewhere [21]. From 2007 to 2009, 30,727 individuals completed at least one interview with an overall household-level response rate of 62.5–64.4 % [22, 23]. A total of 19,560 adults 18 or older with non-missing data on all study variables were included in the analytic sample. Panels 12 and 13 contributed 8,035 and 11,525 participants, respectively. Missing data did not exceed 0.5 % on any variable; 138 cases (<1 %) were excluded for this reason. Approximately a quarter of the sample ($n = 4,868$) was foreign born. Sensitivity analyses confirmed the same results for the non-elderly sample only (<65 years old). This study has been reviewed and approved by the Penn State institutional review board.

Measures

Outcome Variables

Two dichotomous measures of unmet medical need were analyzed. A respondent who had forgone or delayed needed medical care in the past year was considered to have subjective unmet need. Respondents were directed to evaluate their need based on statements made by a medical provider and/or their personal perceptions. An inevitable weakness of this measure is that respondents must be aware of their needs and be willing to report them [24]. Thus, limited recall and social desirability bias threaten reliability and validity of the measure.

Objective measures of unmet medical need, at least in part, circumvent the problems associated with subjective unmet need [24]. Objective unmet need is commonly inferred if an adult has not received a service during a clinically-accepted interval, for example, a blood pressure screening in the past year [25–27]. Given the increasing importance of general preventive care for adults and children [19, 28], the current study improves upon past research by employing a measure of whether adults have had a routine check-up in the past year. Routine care was defined as a “visit with a doctor or other health professional for assessing overall health, usually not prompted by a specific illness or complaint.” Respondents without a routine check-up in the past year were considered to have

objective unmet need. Since guidelines for adult routine care differ by age, gender, and service (e.g., blood pressure check, Pap smear), the benchmark of one check-up per year was chosen to indicate respondents' regular access to preventive healthcare [10, 29].

Immigrant-Specific Variables

Andersen's behavioral model largely guided the selection of independent variables [30]. In collaboration with various colleagues, Andersen's model of the relationship between individual-level characteristics, divided into predisposing factors, enabling resources, and need for health care, and the use of health services is a staple in health services research. However, despite multiple revisions, Andersen's model does not include immigrant-specific characteristics, which are pertinent to the present study and have been central to other conceptual frameworks of help-seeking among Mariel Cuban and Haitian refugees [31] and the use of oral health care of U.S. Hispanics [32].

The first set of analyses included nativity status to measure the difference between natives and immigrants in unmet medical needs. The second set of analyses incorporated characteristics that only apply to the foreign-born population: length of U.S. residence and English language proficiency are related to the adaptation or assimilation process, and state-level destination type may be indicative of contextual differences in access to healthcare. While previous literature has frequently used a categorical measure of length of time in the U.S., in the current study a continuous measure is used in addition to quadratic and cubic terms to test for non-linearity in the relationship between duration in country and healthcare access. English language proficiency was determined by the respondent's interview language. The final immigrant-specific characteristic was state-level destination type (see Fig. 1). De Jong et al. [33] developed a relevant typology, classifying states by their immigration history and the ratio of high- to low-skill immigrant residents, where skill ratio is calculated as the number of foreign born (≥ 25 years) with a college degree divided by the number of foreign born with less than a high school degree. A ratio less than 1 indicates a low-skill destination. Four destination types result: (1) traditional, high-/balanced-skill; (2) traditional, low-skill; (3) new, high-/balanced-skill; and (4) new, low-skill.

Sociodemographic Covariates

Demographic risk factors were sex, race/ethnicity, and age. Age, age squared, and age cubed terms controlled for the non-linear age-dependent trends of healthcare access and utilization, while interactions between age, race/ethnicity, and sex captured sex and race/ethnic differences in healthcare utilization across the life course [27, 34, 35].

Fig. 1 State-level immigrant destination typology. Adapted from the work of De Jong et al. [33]



Self-reported health status measured need for healthcare. Educational attainment, family income, and insurance status were included as indicators of respondents' available resources. Finally, family context, measured by marital status, was included.

Statistical Analysis

Means and frequencies were calculated to describe the distribution of all variables in the total, U.S.-born, and immigrant samples. Binary logistic regression models were generated to assess the association between the independent variables of interest and the two dichotomous measures of unmet medical need. Strata and cluster variables and person-level survey weights provided by MEPS accounted for the survey's complex sampling and longitudinal design features. SAS (version 9) was used for all analyses. Because not all of the independent variables applied to the full sample, two sets of analyses were conducted for each dependent variable, one of the full sample that focused on the relationship between education, income, and insurance status and nativity status and one among immigrants only that looked at the immigrant-specific variables above and beyond the first set of predictors.

Results

About 5 % of all sample respondents reported delaying or forgoing needed medical care in the past year (i.e.,

subjective unmet need) as shown in Table 1. Natives and immigrants did not differ considerably, with immigrants slightly less likely to report subjective unmet need (4.2 vs 5.6 %). In contrast, more than a third of the sample did not have a check-up in the past year (i.e., objective unmet need), and the discrepancy between natives and immigrants was more pronounced. Immigrants were 6.5 % points more likely to experience objective unmet need than their U.S.-born counterparts (43.9 vs 37.4 %). Importantly, the higher prevalence of objective versus subjective unmet need among the total sample demonstrates that not having a routine check-up is not consistently perceived as a problem.

Table 1 also confirms the largely known differences in demographic, human capital, and other household characteristics between immigrants and the U.S. born. It also demonstrates substantial differences within the immigrant population—namely, in educational attainment, income, and English language interview—which justify multivariate analysis.

Table 2 Panel A shows regression results for models predicting subjective unmet need among the total sample. In the unadjusted model, immigrants had lower odds of reporting subjective unmet need than natives (Model A1—OR 0.74, 95 % CI 0.61–0.91) after controlling for age, race/ethnicity, sex, and health status, as well as enabling resources and family context. Immigrants maintained significantly lower odds of reporting subjective unmet need in the full model (Model A3—OR 0.76, 95 % CI 0.58–0.99). Having income below the high income category (at or below 400 % FPL) was associated with higher odds of

Table 1 Characteristics of sample respondents

Variable unweighted N	Total % N = 19,560	U.S. born % N = 14,692	Foreign born % N = 4,868
Subjective unmet need	5.4	5.6	4.2
Objective unmet need	38.5	37.4	43.9
Foreign-born (vs. native)	15.8	0.0	100.0
Age ^a	46.2 (0.27)	46.7 (0.30)	43.9 (0.43)
Female (vs. male)	52.1	52.3	50.7
Race/ethnicity			
Non-Hispanic white*	70.4	79.9	19.4
Non-Hispanic black	11.3	12.3	6.5
Hispanic	13.8	6.6	51.9
Asian	4.5	1.2	22.2
Self-reported health status			
Fair/poor	13.2	13.2	13.7
Good	27.2	26.3	32.3
Very good	32.7	33.4	28.9
Excellent*	26.9	27.2	25.1
Educational attainment			
Less than high school	15.6	12.1	34.0
High school diploma	32.9	34.7	22.9
Some college	25.2	26.6	17.8
Bachelor's degree or higher*	26.3	26.6	25.2
Income (as percentage of poverty line)			
Poor/near poor	15.4	14.0	22.7
Low income	13.3	12.4	18.6
Middle income	32.2	32.3	31.6
High income*	39.0	41.3	27.1
Ever uninsured (vs. never uninsured)	26.0	22.6	43.9
Family type			
Married*	55.2	53.9	62.2
Widowed	6.2	6.5	4.5
Divorced/separated	12.1	12.4	10.5
Never married	22.7	23.4	18.6
Cohabiting	3.9	3.8	4.3
<i>Immigrant-specific variables</i>			
Length of time in U.S. ^a	–	–	20.7 (0.38)
English interview (vs. non-English interview)	–	–	60.4
State destination type			
Traditional, high-/balanced-skill*	–	–	54.7
Traditional, low-skill	–	–	25.7
New, high-/balanced-skill	–	–	12.9
New, low-skill	–	–	6.7

All statistics are weighted with sample weights. Percentages may not add up to 100 due to rounding

* denotes reference category

^a Mean and standard deviation are shown for continuous variables

reporting subjective unmet need as was lacking health insurance sometime in the past year. All non-marital family types, excluding cohabiting, were associated with greater subjective unmet need. In fact, being divorced/separated (OR 2.10, 95 % CI 1.68–2.62) was associated with a

similar increase in the odds of reporting subjective unmet need as having unstable health insurance (OR 2.55, 95 % CI 2.07–3.13).

Pertaining to immigrants only, Table 2 Panel B reports regression results for models of the association between the

Table 2 Odds ratios (OR) and 95 % confidence intervals (CI) for determinants of subjective unmet medical need

Variables (unweighted N = 19,560; unweighted immigrant N = 8,868)	Panel A: Full sample			Panel B: Immigrant sample		
	Model 1	Model 2 ^a	Model 3 ^a	Model 1	Model 2	Model 3
Foreign-born	0.74** (0.61, 0.91)	0.81 (0.62, 1.04)	0.76* (0.58, 0.99)	—	—	—
Length of time in U.S.				0.97 (0.88, 1.07)	0.96 (0.86, 1.06)	0.96 (0.86, 1.07)
Length of time in U.S. squared	—	—	—	1.00 (1.00, 1.01)	1.00 (1.00, 1.01)	1.00 (1.00, 1.01)
Length of time in U.S. cubed	—	—	—	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)
English interview	—	—	—	1.06 (0.69, 1.63)	1.43 (0.85, 2.42)	1.57 (0.94, 2.61)
State destination type (vs. traditional, high-/balanced-skill)						
Traditional, low-skill	—	—	—	1.04 (0.60, 1.78)	1.03 (0.59, 1.79)	1.02 (0.61, 1.72)
New, high-/balanced-skill	—	—	—	0.60 (0.31, 1.16)	0.66 (0.35, 1.26)	0.73 (0.39, 1.34)
New, low-skill	—	—	—	0.82 (0.35, 1.96)	0.96 (0.43, 2.13)	1.05 (0.48, 2.31)
Educational attainment (vs. bachelor's degree or higher)						
Less than high school			0.63** (0.47, 0.86)			0.50* (0.28, 0.88)
High school diploma			0.71** (0.56, 0.91)			0.46** (0.26, 0.82)
Some college			0.85 (0.66, 1.10)			1.15 (0.67, 1.97)
Income as % of poverty line (vs. high income)						
Poor/near poor			1.74*** (1.33, 2.27)			3.14*** (1.68, 5.88)
Low income			1.71*** (1.31, 2.24)			3.00** (1.42, 6.36)
Middle income			1.35** (1.09, 1.68)			1.68 (0.80, 3.51)
Ever uninsured			2.55*** (2.07, 3.13)			1.57* (1.05, 2.34)
Family type (vs. married)						
Widowed			1.88** (1.27, 2.79)			1.57 (0.64, 3.88)
Divorced/separated			2.10*** (1.68, 2.62)			2.49*** (1.49, 4.15)
Never married			1.74*** (1.31, 2.29)			2.79*** (1.85, 4.21)
Cohabiting			1.37 (0.94, 2.00)			0.85 (0.41, 1.76)
Control variables	No	Yes	Yes	No	Yes	Yes

* $P < .05$; ** $P < .01$; *** $P < .001$ ^a Models 2 and 3 in both panels control for age, age², age³, gender, race, and self-reported health status, and all interactions between age, gender, and race. All models are weighted with sample weights

immigrant-specific variables and subjective unmet need. In both unadjusted and adjusted analyses, none of the three variables was significant at the 5 % level. Similar to the total sample, having low income (in this case, at or below

200 % FPL) and being divorced/separated or never married were associated with higher odds of subjective unmet need among immigrants. Unstable health insurance was also significantly related to greater subjective unmet need. In

Table 3 Odds ratios (OR) and 95 % confidence intervals (CI) for determinants of objective unmet medical need

Variables (unweighted N = 19,560; unweighted immigrant N = 4,868)	Panel A: Full sample			Panel B: Immigrant sample		
	Model 1	Model 2 ^a	Model 3 ^a	Model 1	Model 2	Model 3
Foreign-born	1.31*** (1.15, 1.50)	1.11 (0.96, 1.29)	0.98 (0.84, 1.16)	—	—	—
Length of time in U.S.				0.95* (0.91, 1.00)	0.96 (0.92, 1.00)	0.96 (0.92, 1.01)
Length of time in U.S. squared	—	—	—	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)
Length of time in U.S. cubed	—	—	—	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)
English interview	—	—	—	0.71*** (0.58, 0.86)	0.67** (0.51, 0.87)	0.97 (0.74, 1.27)
State destination type (vs. traditional, high-/balanced-skill)						
Traditional, low-skill	—	—	—	0.55*** (0.44, 0.69)	0.58*** (0.46, 0.73)	0.58*** (0.45, 0.75)
New, high-/balanced-skill	—	—	—	1.47 (0.97, 2.21)	1.25 (0.86, 1.82)	1.23 (0.86, 1.76)
New, low-skill	—	—	—	1.03 (0.75, 1.41)	1.06 (0.76, 1.49)	1.16 (0.80, 1.69)
Educational attainment (vs. bachelor's degree or higher)						
Less than high school			1.34*** (1.13, 1.58)			1.26 (0.96, 1.66)
High school diploma			1.27*** (1.12, 1.44)			0.82 (0.64, 1.07)
Some college			1.06 (0.94, 1.21)			1.02 (0.77, 1.34)
Income as % of poverty line (vs. high income)						
Poor/near poor			1.20* (1.04, 1.39)			1.64** (1.17, 2.29)
Low income			1.35*** (1.17, 1.55)			1.84*** (1.35, 2.50)
Middle income			1.16* (1.03, 1.31)			1.29 (0.96, 1.74)
Ever uninsured			2.02*** (1.82, 2.24)			2.61*** (2.12, 3.22)
Family type (vs. married)						
Widowed			1.13 (0.91, 1.40)			0.46** (0.27, 0.77)
Divorced/separated			1.17* (1.02, 1.34)			1.25 (0.95, 1.65)
Never married			1.21** (1.08, 1.36)			1.46* (1.09, 1.94)
Cohabiting			1.37** (1.09, 1.72)			1.63* (1.04, 2.56)
Control variables	No	Yes	Yes	No	Yes	Yes

* $P < .05$; ** $P < .01$; *** $P < .001$ ^a Models 2 and 3 in both panels control for age, age², age³, gender, race, and self-reported health status, and all interactions between age, gender, and race. All models are weighted with sample weights

this sample, contrary to evidence that education promotes healthcare utilization, immigrants with up to a high school diploma had lower odds of subjective unmet need than those with a bachelor's degree or higher.

For objective unmet need, the results differed considerably. In Table 3 Panel A, among the total sample, immigrants had higher odds than natives of experiencing objective unmet need (Model A1—OR 1.31, 95 % CI

1.15–1.50). However, controlling for the model covariates, immigrants no longer had significantly higher odds. Additional analysis (available upon request) revealed that age, sex, and racial composition differences between the immigrant and U.S.-born samples explain the immigrant-U.S.-born inequality in objective unmet need. Self-reported health status did not influence the foreign-born coefficient. Educational attainment was inversely associated with objective unmet need. Respondents with up to a high school diploma had significantly higher odds of objective unmet need than those with a bachelor's degree or higher. Similar to the findings for subjective unmet need, the lowest three income categories (under 400 % FPL) were associated with higher odds of experiencing objective unmet need. Unstable health insurance was associated with doubled odds of objective unmet need (OR 2.02, 95 % CI 1.82–2.24), and separate analyses (not shown) demonstrated that having public insurance only versus any private insurance corresponded to marginally lower odds of experiencing objective unmet need whereas being uninsured for the entire year was associated with higher odds of objective unmet need. Except for widowed, all non-marital family types were positively associated with objective unmet need.

Exclusive to immigrants, Table 3 Panel B reports regression results for models of the association between the immigrant-specific variables and objective unmet need. In the unadjusted model, objective unmet need decreased linearly with length of time in the U.S., and having an English language interview and living in a traditional, low-skill state were also associated with lower odds of objective unmet need. After accounting for demographic risk factors and need for health care, length of time in the U.S. was no longer significantly related to objective unmet need. However, in additional analyses (not shown), a categorical length of time variable showed that living in the U.S. for less than 5 years versus 15 or more was associated with higher odds of objective unmet need in all three models. In Model 3, no differences by English interview were present once insurance status, and to a lesser extent, income and education, were included, but residing in a high-/balanced-skill state or new state of either skill type versus a traditional, low-skill state was associated with higher odds of objective unmet need (coefficients not shown). These results provide some evidence that all three immigrant-specific variables are important in explaining inter-immigrant differences in routine healthcare utilization.

In the full model, educational attainment was not significantly related to objective unmet need among immigrants, but being poor/near poor or low income was associated with higher odds of objective unmet need. In addition, unstable health insurance was associated with higher odds, and there was no difference between public and any private insurance. Lastly, widowed immigrants

had lower odds of objective unmet need than married immigrants, while immigrants who were never married or cohabiting had higher odds of objective unmet need.

Discussion

Immigrants reported less subjective unmet need than the U.S. born despite experiencing greater (or equal) objective unmet need. This inconsistency may result from foreign-born adults' less frequent attempts at accessing healthcare for a number of reasons. The selective migration perspective (or 'healthy migrant hypothesis') posits that immigrants are healthier than non-migrants in their origin countries and may be healthier than U.S. natives [36–38], and therefore do not need formal health services, even routine ones. In addition, immigrants may rely on other forms of health promotion such as traditional healing practices, e.g., acupuncture, or familial and communal social support [39–42]. Both of these explanations hinge on the idea that immigrants understand their health status and the role of formal healthcare differently than the U.S. born, since most originate from countries with distinct (or limited) healthcare systems and beliefs about what constitutes a healthy and happy life [43]. Although the degree of mutability is lower for health beliefs than for organizational conditions and health insurance provision [30], and therefore cannot be as easily remedied, immigrants' initial health beliefs and how they change over time deserve increased scrutiny. Future research could consider differences in health beliefs by country of origin and compare their trajectories over time in the U.S. vis-à-vis U.S.-born non-Hispanic whites: do immigrants from certain countries move toward non-Hispanic whites while other immigrants move away?

Concerning the immigrant-only analyses, length of U.S. residence, English proficiency, and state-level destination type did not significantly impact subjective unmet need, suggesting that no matter how long immigrants reside in the U.S., their views of health and healthcare are driven by earlier life experiences outside the U.S. On the other hand, immigrants' perceived unmet need may not change with increased time in country, because as the foreign born become familiar with and gain formal access to the U.S. healthcare system, their improved ability to access healthcare services may offset their increased need for these services.

For objective unmet need, state-level destination type and the categorical length of time variable remained significant predictors of objective unmet need in adjusted analyses. After reaching the 5-year bar, immigrants become eligible for federal benefits and are likely more familiar with the locations of clinics and how other Americans access health insurance and visit the doctor.

Moreover, the communities themselves become more familiar with immigrants' challenges. Immigrants who live in traditional, low-skill states compared to those who inhabit all other destination types may benefit from a more equipped healthcare infrastructure. New destination states, with small but burgeoning immigrant populations, may not be prepared for the substantial demographic trend [9]. Determining what this infrastructure is and what other environmental characteristics are invaluable to immigrants' healthcare utilization is a promising topic for future study and conceptual development. Surprisingly, English language proficiency was not associated with objective unmet need after controlling for the model covariates, in particular health insurance.

Finally, Andersen's original behavioral model performed well in predicting subjective and objective unmet medical need among immigrants. For both outcomes, however, the influence of educational attainment did not match expectations. Having up to a high school diploma as opposed to at least a bachelor's degree was associated with *lower* odds of subjective unmet need, suggesting that immigrants' standards of care may be impacted by education. College graduates, assuming they more frequently interact with the healthcare system, may perceive certain procedures or specialty appointments (e.g., allergist) as necessary unlike those with less education. For objective unmet need, however, educational attainment had little direct association with unmet need in the full model, mediated largely by insurance status. While the value of having (private) health insurance for immigrants' and natives' receipt of regular doctor check-ups should not be downplayed, the somewhat weaker association between insurance status and subjective unmet need highlights that perceptions of (and access to) care are determined by more than stable health insurance. For one, being married versus divorced/separated or never married reduced the likelihood of reporting subjective unmet need whether because of instrumental or emotional support or other selection processes.

Some limitations of this study should be considered in light of its findings. First, the immigrant sample may not represent the actual U.S. immigrant population. More than 96 % of the survey's non-English language interviews were completed in Spanish. The survey instrument was exclusively developed in English and Spanish. In cases where the respondent did not speak either language, an English-speaking family member (if present) was questioned, and in rarer cases MEPS hired a professional translator. Because the survey draws its sampling frame from the previous year's NHIS and immigrants who speak neither English nor Spanish (i.e., recent movers) are likely to refuse participation, MEPS is skewed towards more established immigrants. In addition, undocumented immigrants, who are also more likely to be recent movers, may have declined to participate

in the government-affiliated survey, cautious of their illegal status being exposed [12]. To the extent that more recent immigrants report greater subjective unmet need, this limitation may also account for the small percentage (<5 %) of immigrants who reported subjective unmet need and the resultant wide standard errors.

Another potential limitation is that English language interview may not have captured respondents' actual ability to speak English, particularly in the case of an English-speaking child or spouse completing the interview for a non-English speaker [5]. However, this study is more easily compared to past studies of English language proficiency and access to healthcare using this operationalization. Sensitivity analyses using a combined measure of interview language and language spoken at home (three categories: English interview, speaks English at home; non-English interview, speaks English at home; and non-English interview, does not speak English at home) also supported English language interview as the defining characteristic in terms of healthcare utilization.

Third, several probable determinants of immigrants' healthcare access were omitted: citizenship status, country of origin, and the health beliefs of respondents. Illegal immigrant and non-citizen status has been linked to fewer physician visits and lower odds of having a usual source of healthcare [3, 12]. Even with the recent passage of the Affordable Care Act, illegal immigrants are restricted from accessing public health insurance [44]. Including documentation or citizenship status questions in national health surveys would augment our ability to make inferences about immigrants' health and care.

This study contributes to the literature on immigrant-native health inequalities by utilizing a nationally representative health survey, analyzing two conceptualizations of unmet medical need, and incorporating immigrant-specific characteristics. A limited number of studies have examined the influence of multiple immigrant-specific variables on access to and utilization of healthcare. State-level destination type, and other contextual or ecological variables, has received little attention as a determinant of immigrant health and healthcare access.

As we embark on a new healthcare regime that may exacerbate immigrant-native disparities in public health insurance coverage, it is prudent to consider immigrants' current healthcare access and their need for greater access. This study finds that, compared to the U.S. born, immigrants are more likely to receive all of the care that they need despite lower odds of having an annual routine check-up. Among immigrants only, more recent immigrants and those who live in new immigrant destinations and traditional, high-/balanced-skill destinations are at risk for unmet need. Together, these findings help elucidate the factors that contribute to

immigrants' potential under-utilization of healthcare services, which may be responsible for future changes in healthcare utilization based on demographic change and continuing immigration streams. Because more diverse immigrants are moving to new destinations within the U.S. [45–47], we all have an incentive to ensure immigrants' integration into the country's healthcare system, or reorganize that system. Safeguarding adult immigrants' health is likely to prevent economic setbacks (e.g., depressed productivity), future increases in healthcare costs stemming from greater reliance on emergency room care and delayed diagnosis of chronic conditions, and worse health for children of immigrants [48, 49].

New Contribution to the Literature

This study contributes to the current literature by evaluating the relationship between nativity status and two measures of unmet medical need and testing immigrant-specific variables that have traditionally been left out of health services research.

Acknowledgments This research was supported in part by a grant from the National Institutes of Health (P01 HD062498) and the Thomas F. Morgan Graduate Research Scholarship from the College of Liberal Arts at Penn State University. I would like to thank my Master's thesis committee, the anonymous reviewer, and Ray Kuntz, who accessed the restricted-use files of the Agency for Healthcare Research and Quality (AHRQ). The research in this paper was conducted at the AHRQ Center for Financing, Access, and Cost Trends Data Center, and the author acknowledges support of AHRQ. The results and conclusions of this paper are those of the author and do not indicate concurrence by AHRQ or the U.S. Department of Health and Human Services.

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