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ORIGINAL PAPER

# Nativity Differences in Chronic Health Conditions Between Nationally Representative Samples of Asian American, Latino American, and Afro-Caribbean American Respondents

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**Abstract** Immigrants on average have better health than native-born residents. However, no clear understanding of prevalence of chronic conditions across foreign-born groups exists, and few studies include Afro-Caribbean populations. This study utilizes the National Latino and Asian American Study and the National Survey of American Life to investigate nativity differences in reports of chronic cardiovascular, respiratory, and pain conditions between foreign-born (n = 3,579) and native-born (n = 1,409) respondents. Native-born respondents were significantly more likely than foreign-born counterparts to report chronic respiratory [c2(1, n = 4,958) 30.78, $P \leq .05$] and pain [c2(1, n = 4,958) 3.77, $P \leq .05$] conditions. Logistic regression models reveal significant associations between chronic conditions and other demographic factors known to influence immigrant health. Afro-Caribbean populations were less likely than other foreign-born respondents to report respiratory and pain conditions. Findings illustrate the importance of comparing health profiles across native-born and foreign-born counterparts with the inclusion of Afro-Caribbean Americans.

**Keywords** Chronic health · Caribbean · Race · Ethnicity

## Background

With some variation across research findings, immigrants in the United States on average have better overall health than native-born residents despite having to negotiate adverse social and economical conditions in a new country [1, 2]. Referred to as the immigrant paradox [3–8], this pattern appears to be consistent across most immigrant groups for which data is available. Differences between foreign-born and native-born health profiles have been found across several health indicators [9–15]. In general, studies on population health suggest health advantages exist among most foreign-born groups compared to their native-born counterparts [16–18].

A number of pre- and post-migration explanations exist for the immigrant paradox. Many potential immigrants (those still in the country of origin) rely on social ties for the acquisition of pharmaceuticals and medical treatment [19] and remittance payments [20]. Remittance payments are found to be associated with lower risks of low birth weight infants within the households that received them [21, 22]. As a result of these remittance payments, pre-migration health profiles of potential immigrants may be healthier than profiles of those who remain in the country of origin. Thus the selective effects of family reunification policies and the positive effects of remittance payments may produce the healthier profiles among recently arriving immigrants.

Massey [23] suggests that historical assimilation and adaptation patterns are linked to cultural profiles of immigrants through structural forces that influence the type of cultural profiles (or the rate of assimilation) most easily adaptable in the United States. Perhaps the health patterns among culturally different ethnic groups can be linked back to the way in which their cultural profile corresponds to the social structure of the destination country, thus exaggerating the appearance of a positive health profile for particular groups of immigrants.

Furthermore, research also reveals that religious participation, affiliation, and practice are associated with the

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migrant experience across multiple ethnic groups including Korean [24, 25], Hispanic [26], and African Americans [27], which may operate as a selectivity factor in who decides to migrate.

Despite the contributions of these studies, a clear understanding of the immigrant health paradox remains elusive. First, although many studies have focused on the health outcomes of Hispanic ethnic subgroups, less attention has been given to outcomes among various other racial groups. When the health patterns of Asian subgroups are considered, it is often within the context of acculturation [28]. Additionally, with very few exceptions, studies for African Americans fail to consider variations in physical health among Afro-Caribbean immigrant populations [29, 30].

Further, research into racial differences in prevalence of chronic conditions has focused on comparisons between White and Black native-born respondents [31] instead of comparisons between foreign-born and native-born counterparts. Afro-Caribbeans, who are often included in the African American category, clearly identify as being different from African Americans in terms of ethnic identity [32]. By grouping Caribbean Americans within African Americans, researchers have missed distinct health differentials. For example, Read and Emerson [33] found differences between African, Caribbean, and European Black immigrants living in the United States: African Blacks exhibited far better overall health, followed by Caribbean Blacks, and then European Blacks. Additionally, Read et al. [34] found that Black immigrants who came to the United States from majority white geographic regions had worse health outcomes than those from majority Black or mixed race locations. Fang et al. [30] also found that Black foreign-born populations have better overall health than Black native-born populations. Davis and Huffman [35] observed that, among the foreign-born respondents, foreign-born Afro-Caribbeans had lower levels of elevated blood glucose, cholesterol, and low-density lipoprotein than did African Americans and US-born Afro-Caribbeans. Research is needed to extend the analysis to Afro-Caribbean subgroups and draw comparisons between foreign-born and native-born populations of Caribbeans, Asians, and Latinos.

Second, most studies concentrate on general physical health outcomes; only a few consider the immigrant health advantage as it relates specifically to chronic health indicators. Among the studies to date, most examined individual chronic conditions and very few covered multiple chronic conditions [36]. In one such multiple-condition study, Singh and Siahpush [37] found lower risks for foreign-born immigrants compared with their native-born ethnic counterparts across a number of chronic cardiovascular and pain diseases such as cancer, chronic obstructive pulmonary disease, cirrhosis, pneumonia, and influenza. More comprehensive research is needed to examine chronic conditions across multiple immigrant populations.

Third, despite studies that have attempted to clarify the linkage between health and immigrant status, measurement and model specification issues have been identified that have likely led to masking the true health profiles. The hierarchical nature of health in the United States justifies the need to examine the distribution of health by racial categories. However, general definitions of race tend to be based on sociopolitical constructs [38] that measure vulnerability to various forms of risk [39]. Therefore, racial self-identification may be capturing the effects of a host of other factors including cultural, social, and environmental ones [40]. In addition, the study of health by race among foreign- and native-born residents may contain a hidden bias since the nature of self-identifications may differ by nativity, thus increasing the complexity of the data collection process [41]. Likewise, changing conceptualizations of race and the multiple identification process influenced by social and political factors [42] may introduce errors into statistical analyses [43].

Inconsistent and multiple operationalizations of immigrant status in health research have made it difficult to draw comparisons across studies and may be an important factor in inconsistent findings across studies, poorly measured constructs, and inflated immigrant health profiles. Loue and Bunce [44] identified three common paradigms for defining "immigrant status": social science, immigration law, and public benefit law/entitlement. Each paradigm's operationalization of immigrant status results in slight differences in measurement (place of birth, algorithms, and inference-based strategies) that require tests of validity and reliability to ascertain their accuracy. This is also true when conducting cross-national comparisons or using national data sets involving different racial/ethnic indicators, thus complicating comparisons across findings [45].

Sampling migrant populations can be a complex process in immigration research when study surveys often ask sensitive, intrusive questions concerning immigrant status and/or the naturalization process. This is especially true if respondents include refugee groups or over-stayed visa holders [44] who perceive risk in participating in studies that request personal information. Further, many of the recent surveys on immigrants were unable to distinguish between legal and illegal immigrants, adding to the complexity of the analysis [46]. In addition, the use of various sampling frames for minorities in population-based research contains inherent flaws that lead to un-representative results. For example, disproportionate stratified sampling in areas of higher group concentrations may lead to unfavorable statistical effects [47] whereas over-sampling may lead to multiplicity problems if the sample population is more transient during sample selection [47].

Since stable social support is positively related to health [48, 49], sampling may over-represent healthier immigrant profiles who have relatively stable socio-economic and cultural supports. In addition, inconsistent sampling strategies become problematic when comparing findings from one study to the next.

Statistical techniques in modeling immigrant health, in particular, have been subject to differential outcomes. For example, when comparing health profiles across groups, age-specific health profiles tend to result in higher rates than do age-adjusted profiles [38]. Statistical models based on census-derived data fail to acknowledge the influence of the total combined "in- and out-movement" and hidden movement of migrants on the distributional proportions of migration research [50]. Plane and Mulligan [51] have suggested that many of the current measures of migration include "arbitrary or non-intuitive processes," such as comparisons to a non-existent mean, squaring differences and logarithmic transformations that are found to alter final values. Whatever the statistical approach, interpretation of results must involve referencing the population from which the data came [52].

### Purpose

To address the research issues described above, the present study compared overall chronic health status between Asian, Latino, and Afro-Caribbean respondents and then focused the analysis on three specific chronic conditions, considering the multiple factors that are said to explain the healthy outcomes of immigrant populations. This study analyzes logistic regression models for foreign-born and native-born Asian, Latino, and Caribbean American respondents across three categories of chronic conditions: cardiovascular, respiratory, and pain. Logistic regression models control for the multiple factors said to influence the health profiles of immigrants. Measurement issues will also be considered.

This present study furthers understanding of the immigrant health advantage by disaggregating the immigrant advantage across chronic conditions by race and nativity while including Caribbean populations underrepresented in health research. Further, this study provides the groundwork for future analysis of demographic factors such as acculturation, length of residency, and perceived discrimination, which may also be associated with the health outcomes of foreign-born respondents.

## Methods

### Participant Data and Measures

This analysis draws on the Collaborative Psychiatric Epidemiology Surveys (CPES) merged data file from the National Latino and Asian American Study (NLAAS) and the National Survey of American Life (NSAL) (Table 1). Using a multi-stage area probability sample, researchers conducted face-to-face surveys from 2001 to 2004 resulting in 4,649 completed interviews for the NLAAS and 6,199 face-to-face interviews for the NSAL [53, 54]. Of completed surveys, foreign-born respondents accounted for 42 % of the interviews, and native-born respondents accounted for 58 %. Of the total foreign-born respondents, 37 % were Asian Americans, 33.7 % Latinos, and 29 % Caribbeans. Approximately 56 % of the foreign-born respondents were women, compared to 61 % of native-born respondents. The average age was 40.34 for foreign-born and 42 for native-born respondents.

In this analysis, the NLAAS and NSAL data is utilized to examine nativity differences in the reports of chronic cardiovascular, respiratory, and pain conditions among ethnically diverse Asian American, Latino American, and Caribbean American respondents. Utilizing the CPES merged data files allows this study to deal with some of the methodological issues that may inflate the health profiles of immigrants, including operationalization, sampling error, and inadequate statistical models. Each survey interview was conducted within the same time period (2001–2004) utilizing the Blaise computer-assisted interviewing software for each question, allowing for greater statistical efficiency and for more accurate comparisons across data sets and groups, and thereby addressing the issue of consistency across data sets and sample representation. A multi-stage area probability sampling design with over-sampling for targeted race and ethnicity subpopulations was utilized to insure a representative sample. Data harmonization and merging were achieved through Blaise metadata, crosswalk table, and SAS meta-data for constructing tables. Variables with similar operationalizations and names (including immigrant status, years in the United States, and ethnicity) were linked, whereas the remaining variables were left unlinked or recoded for consistency. The use of these sampling methods allows researchers to draw comparisons across studies as if the findings were one data set (for more details on data merging, see Heeringa et al. [55]).

### Analysis

All analyses use weighted data that adjust for demographic variables in the multi-stage stratification sampling, non-response rates, and post-stratification factors. The analyses also take into account sample design effects using SAS-Callable SUDAAN. To adjust for the factors that may inflate the health profiles of the immigrant sample, all models are controlled for gender, age, income, education, and marital status. Consistent with Gee et al. [56], four measures of chronic health were created from 14 binary chronic health

**Table 1** Weighted sample characteristics of Asian American, Latino American, and Afro-Caribbean American respondents by nativity

| | Total sample | Native-born (n = 1,409) | | Foreign-born (n = 3,579) | |
|---|---|---|---|---|---|
| | | n | Weighted % | n | Weighted % |
| Total sample | 4,988 | 1,409 | 64 | 3,579 | 36 |
| *Demographic characteristics* | | | | | |
| Race | 4,988 | | | | |
| Asian American | 1,626 | 302 | 14 | 1,324 | 33.1 |
| Latino American | 1,939 | 734 | 80.3 | 1,205 | 60.3 |
| Caribbean American | 1,423 | 373 | 5.7 | 1,050 | 7 |
| Women | 4,988 | 792 | 49 | 1,993 | 49.2 |
| Average age | 4,988 | | | | |
| 18–34 | 1,915 | 588 | 45 | 1,327 | 46 |
| 35–49 | 1,671 | 476 | 33 | 1,195 | 30 |
| 40–64 | 947 | 230 | 15 | 717 | 17 |
| 65+ | 455 | 115 | 8 | 340 | 7.5 |
| Household income | 4,818 | | | | |
| <20,000 | 1,290 | 344 | 29.1 | 946 | 31.4 |
| 20,000–34,999 | 922 | 253 | 19 | 669 | 19 |
| 35,000–49,999 | 720 | 197 | 14.4 | 523 | 14 |
| 50,000–64,999 | 531 | 174 | 12 | 357 | 10.4 |
| 65,000 or more | 1,355 | 400 | 26 | 955 | 26 |
| Education | 4,988 | | | | |
| 0–11 years | 1,345 | 260 | 26.3 | 1,085 | 46.5 |
| 12 years | 1,217 | 394 | 30.1 | 823 | 20.3 |
| 13–15 years | 1,187 | 432 | 28 | 755 | 15.7 |
| ≥16 years | 1,239 | 323 | 16 | 916 | 18 |
| Years in US | 3,565 | | | | |
| <5 years | | | | 491 | 16.3 |
| 5–10 years | | | | 593 | 16.4 |
| 11–20 years | | | | 1,046 | 31.4 |
| 20+ years | | | | 1,435 | 36 |
| Marital status | 4,988 | | | | |
| Married cohabitating | 2,989 | 698 | 57 | 2,291 | 73 |
| Divorce/separated/widowed | 842 | 223 | 15 | 619 | 12 |
| Never married | 1,157 | 488 | 29 | 669 | 16 |

18 Respondents did not respond to nativity question and were dropped from this analysis

conditions coded (1, 0): cardiovascular (heart attack, stroke, heart disease, high blood pressure, blood circulation), respiratory (hay fever, asthma, chronic lung), pain (back pain, headache, arthritis, ulcer), and other (diabetes, cancer). (The "other" category is not part of the analysis herein.)

This analysis examined the prevalence of chronic cardiovascular, respiratory, and pain conditions among a sample of foreign-born and native-born Asian, Latino, and Caribbean Americans to determine whether nativity was significantly associated with prevalence of chronic conditions controlling for gender, age, household income, education, and marital status (Table 1). Chi-square analysis was used to determine whether a significant difference exists between native-born and foreign-born respondents. To disaggregate race from nativity, nine logistic regression models were run for each racial group and chronic condition with US-born as the reference group, while controlling for gender, age, household income, education, and marital status.

## Results

### Weighted Prevalence of Chronic Conditions by Nativity

To determine whether significant group differences exist in the prevalence of chronic cardiovascular, respiratory, and

pain conditions, Chi-square analysis was used and weighted prevalences were analyzed. Results reveal a significant difference in the weighted prevalence for respiratory and pain conditions. Native-born respondents reported significantly higher rates of respiratory conditions (37 %) than did foreign-born respondents (24.4 %), [c2(1, $n = 4{,}958$) 30.78, $P \leq .001$]. Similarly, native-born respondents had a significantly higher prevalence of pain conditions (43 %) than did foreign-born respondents (37 %) [c2(1, n = 4,958) 3.77, $P \leq .05$]. Chi-square test results indicated no significant nativity differences in prevalence of chronic cardiovascular conditions for native-born and foreign-born respondents.

### Weighted Logistic Regression Results of Chronic Conditions by Nativity and Race

To confirm whether nativity plays a significant role in reports of chronic conditions, logistic regression analysis was conducted with native-born respondents as the reference group. This relationship was further disaggregated by comparing these models by racial group to determine if nativity increased or decreased the likelihood of reporting a chronic cardiovascular, respiratory, or pain condition, compared to their native-born counterparts. Consistent with the Chi-square results, regression analysis reveals a significant relationship between nativity and chronic respiratory conditions among Asian Americans and Latino Americans, and a significant relationship between nativity and chronic cardiovascular, respiratory, and pain conditions among Caribbean Americans.

Foreign-born Asian Americans were −.65 times less likely to report a chronic respiratory condition (b = −.65; $P \leq .000$) and −.38 times less likely to report a chronic pain condition (b = −.38; $P \leq .01$) than were their native-born counterparts. There was no significant relationship between reports of cardiovascular conditions and nativity for Asian Americans (Table 2). For Latino Americans, foreign-born were −.68 times less likely to report chronic respiratory conditions (b = −.68; $P \leq .000$) and −.46 times less likely to report chronic pain conditions (b = −.46; $P \leq .001$) than were their native-born counterparts, with no significant relationship between reporting cardiovascular conditions and nativity (Table 3). Finally, for Caribbean Americans, foreign-born where −.98 times less likely to report chronic cardiovascular conditions (b = −.98; $P \leq .000$), −.73 times less likely to report chronic respiratory conditions (b = −.90; $P \leq .001$), and −.84 times less likely to report chronic pain conditions (b = −.84; $P \leq .01$) (Table 4).

**Table 2** Summary of logistic regression analysis for modeling chronic conditions for Asian Americans

| Variables | Model | | |
|---|---|---|---|
| | Cardio (n = 1,624) | Resp (n = 1,626) | Pain (n = 1,625) |
| Intercept | −.98** | −.62** | −.12 |
| Nativity | | | |
| Native born | – | | |
| Foreign-born | −.05 | −.65*** | −.38** |
| Gender | | | |
| Men | – | – | – |
| Women | −.23 | −.11 | .42*** |
| Average age | | | |
| 18–34 | – | – | – |
| 35–49 | −.09 | .59*** | −.07 |
| 40–64 | −.02 | .43** | −.28 |
| 65+ | .71* | .77** | .05 |
| Household income | | | |
| <20,000 | – | – | – |
| 20,000–34,999 | −.08 | .21 | .06 |
| 35,000–49,999 | −.12 | .25 | .09 |
| 50,000–64,999 | .42 | −.16 | −.16 |
| 65,000 or more | .21 | .25 | −.01 |
| Education | | | |
| 0–11 years | – | – | – |
| 12 years | −.19 | .13 | −.28 |
| 13–15 years | −.30 | .12 | −.04 |
| ≥6 years | −.28 | .39 | −.08 |
| Marital status | | | |
| Married cohabitating | – | – | – |
| Divorce/separated/ widowed | .32 | .22 | .59** |
| Never married | −1.42*** | −.30 | −.86*** |

* $P < .05$; ** $P < .01$; *** $P < .001$

## Discussion

This study provides evidence that reports of chronic disease vary by nativity, race, and chronic condition and confirms that chronic disease is also a factor to be considered when examining nativity differences in health (immigrant paradox). When weighted prevalence of chronic disease is examined by nativity, distinct differences in chronic disease prevalences appear in the logistic regression models, in which foreign-born and native-born show significant differences in reports of chronic respiratory and pain conditions: native-born respondents report a 12 % higher prevalence of chronic respiratory and a 7 % higher prevalence of pain conditions.

When disaggregating chronic pain conditions by nativity and race, Caribbean immigrants had the lowest likelihood of reporting chronic pain conditions among the foreign-born groups. This is interesting considering the aggregated prevalence rate difference between native-born and foreign-born; when disaggregated, it appears that Caribbean immigrants

**Table 3** Summary of logistic regression analysis for modeling chronic conditions for Latino Americans

| Variables | Model | | |
|---|---|---|---|
| | Cardio (n = 1,934) | Resp (n = 1,938) | Pain (n = 1,936) |
| Intercept | −1.71*** | −1.31*** | −.50*** |
| Nativity | | | |
| Native born | – | – | – |
| Foreign-born | −.11 | −.68*** | −.46** |
| Gender | | | |
| Men | – | – | – |
| Women | .22 | .39*** | .84*** |
| Average age | | | |
| 18–34 | – | – | – |
| 35–49 | .44* | .05 | .15 |
| 40–64 | .95*** | −.13 | .40*** |
| 65+ | .89** | .23 | .06 |
| Household income | | | |
| <20,000 | – | – | – |
| 20,000–34,999 | −.43 | .26 | .04 |
| 35,000–49,999 | −.17 | −.11 | −.36 |
| 50,000–64,999 | −.47* | .38 | −.29 |
| 65,000 or more | −.05 | .51* | −.02 |
| Education | | | |
| 0–11 years | – | – | – |
| 12 years | −.36 | .33* | −.41* |
| 13–15 years | −.35 | .37 | −.36** |
| ≥16 years | −.04 | .40 | .08 |
| Marital status | | | |
| Married cohabitating | – | – | – |
| Divorce/separated/ widowed | .90*** | .08 | .57*** |
| Never married | −.44 | .0 | −.31 |

* $P < .05$; ** $P < .01$; *** $P < .001$

**Table 4** Summary of logistic regression analysis for modeling chronic conditions for Caribbean Americans

| Variables | Model | | |
|---|---|---|---|
| | Cardio (n = 1,394) | Resp (n = 1,394) | Pain (n = 1,395) |
| Intercept | 1.04* | −.57 | .14 |
| Nativity | | | |
| Native born | – | – | – |
| Foreign-born | −.98*** | −.90*** | −.84** |
| Gender | | | |
| Men | – | – | – |
| Women | .06 | .1 | .46 |
| Average age | | | |
| 18–34 | – | – | – |
| 35–49 | −.18 | −.43 | 0 |
| 40–64 | .26 | −.06 | .58** |
| 65+ | .41 | −.22 | −.03 |
| Household income | | | |
| <20,000 | – | – | – |
| 20,000–34,999 | −.26 | .42 | .05 |
| 35,000–49,999 | −.38 | −.04 | .62 |
| 50,000–64,999 | −.46 | −.48 | 0 |
| 65,000 or more | .18 | −.22 | .26 |
| Education | | | |
| 0–11 years | – | – | – |
| 12 years | −1.05* | 0 | −.73* |
| 13–15 years | −1.58** | .9* | −.99*** |
| ≥16 years | −.45 | −.1 | −.45 |
| Marital status | | | |
| Married cohabitating | – | – | – |
| Divorce/separated/ widowed | −.15 | −.37 | .38 |
| Never married | −.78* | .31 | .13 |

* $P < .05$; ** $P < .01$; *** $P < .001$

have the most influence on this outcome. For example, whereas logistic regression models for Asian and Latino foreign-born Americans found no significant differences in the likelihood of reporting chronic cardiovascular conditions compared to their native-born counterparts, Caribbean foreign-born respondents had a significantly lower likelihood of reporting chronic cardiovascular conditions compared to their native-born counterparts. Yet, significant differences did not show up among cardiovascular conditions in the aggregated prevalence model (Table 2). This suggests that aggregated models for evaluating chronic cardiovascular conditions among foreign-born and native-born respondents may mask the distinct immigrant advantage that Caribbean immigrants experience. Additionally, when drawing comparisons between the healthiest groups, Caribbean immigrants have the lowest prevalence of chronic conditions compared to their native-born counterparts and the lowest rates of chronic pain conditions compared to foreign-born Asian and Latinos. Such findings indicate unique differences in who carries the burden of a particular chronic condition.

Results from this study also reveal that, across all racial groups, foreign-born respondents reported significantly lower likelihood of chronic respiratory conditions than did their native-born counterparts. This suggests that immigrants are less likely than native-born populations to experience conditions such as hay fever, asthma, and chronic lung disease. Herein lies an excellent example of the paradox in health among immigrants. Respiratory conditions are often associated with poverty, urban living [57], and low SES [58]; yet the results of this present study reveal that immigrants seem to be less likely to report chronic respiratory conditions, even when they are living within these situations. Cagney,

Browning, and Wallace [59] found a similar paradox in their study of asthma and respiratory conditions among Latinos.

The results of this investigation confirm previous findings that native-born respondents typically report a higher prevalence of chronic respiratory and pain conditions than do foreign-born respondents [35–37]. However, this study goes a step further by disaggregating the model by racial group and comparing foreign-born responses to their native-born counterparts. Specifically, aggregated data makes it appear that all foreign-born and native-born groups share the same chronic disease profiles when in reality unique racial profiles emerge. Further, the analyses herein, involving comparisons between native and foreign-born counterparts instead of comparisons between generalized racialized groups and white Americans (which is often standard in epidemiological studies), indicate that additional factors may be influencing the poor health of native-born racialized respondents.

Results and interpretation of this analysis should include a consideration of its limitations. First, despite the representation of three different racial groups and the inclusion of Caribbean respondents, the role of ethnicity was not explored. Race may provide insight into how race as a social structure determines one's social experiences and predetermines health status [39], but the inclusion of ethnicity would allow us to consider differences among populations that share a similar history or cultural tradition [60, 61].

Second, these findings could be associated with length of residency where immigrants within this sample may be less likely to experience chronic respiratory and pain conditions due to shorter length of residency in the US. Given the cross-sectional nature of this data, future studies need to disaggregate the role of length of residency on these current findings.

Finally, this study relies on self-reported health measures. While this may be somewhat problematic, self-reported general health measures have been found to be useful for understanding health status [62–64].

## New Contribution to the Literature

Immigrants are well-known to demonstrate health advantages across multiple health indicators. This study takes the understanding of the immigrant health advantage a step further by disaggregating the immigrant advantage by race (Asian American, Latino Americans, and Caribbean Americans) and nativity, extending the analysis to chronic health indicators, which are less frequently studied, and finally including Caribbean populations that have often been overlooked in studies on immigrant health. Results of this study have implications for the way in which immigrant health is predicted prior to arrival in the United States. The findings further have implications for the way in which researchers categorize immigrants. Future studies also should examine whether deterioration in health occurs for most foreign-born groups in this study across all three indicators. The current study, however, does illustrate the importance of comparing health profiles across native-born and foreign-born counterparts with the inclusion of Afro-Caribbean Americans and illustrates the need to extend the analysis of immigrant health to multiple chronic health conditions.

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