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Race, Ethnicity, and Self-Rated Health Among Immigrants in the United States

Sirry M. Alang[1] · **Ellen M. McCreedy**[1] · **Donna D. McAlpine**[1]

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Abstract
Objectives Previous work has not fully explored the role of race in the health of immigrants. We investigate race and ethnic differences in self-rated health (SRH) among immigrants, assess the degree to which socio-economic characteristics explain race and ethnic differences, and examine whether time in the U.S. affects racial and ethnic patterning of SRH among immigrants.
Methods Data came from the 2012 National Health Interview Survey (N=16, 288). Using logistic regression, we examine race and ethnic differences in SRH controlling for socio-economic differences and length of time in the country.
Results Hispanic and non-Hispanic Black immigrants were the most socio-economically disadvantaged. Asian immigrants were socio-economically similar to non-Hispanic White immigrants. Contrary to U.S. racial patterning, Black immigrants had lower odds of poor SRH than did non-Hispanic White immigrants when socio-demographic factors were controlled. When length of stay in the U.S. was included in the model, there were no racial or ethnic differences in SRH. However, living in the U.S. for 15 years and longer was associated with increased odds of poor SRH for all immigrants.
Conclusions Findings have implications for research on racial and ethnic disparities in health. Black-White disparities that have received much policy attention do not play out when we examine self-assessed health among immigrants. The reasons why non-Hispanic Black immigrants have similar self-rated health than non-Hispanic White immigrants even though they face greater socio-economic disadvantage warrant further attention.

Keywords Immigrant health · Self-rated health · Race and ethnic disparities · Health disparities

MSC Codes 62 · 65

Introduction

There is a large body of evidence that recent immigrants are healthier than persons born in the USA [1]. This phenomenon, also known as the healthy immigrant effect, describes a pattern whereby first generation immigrants to North America have significantly less all-cause and disease-specific mortality [2, 3] and lower rates of chronic disease [4, 5] than their U.S.-born counterparts of the same race or ethnicity. As time in the USA increases, the health advantages of immigrants decrease significantly in what has been termed the Paradox of Assimilation [6]. Explanations for the observed initial health advantage of immigrants and the decline in health that comes with time in the USA include: selective immigration of healthier people [7, 8]; acculturation with negative health behaviors including changes in diet and substance use [9, 10]; and undiagnosed or undetected disease at time of immigration [11, 12].

Since race and ethnicity play an important role in shaping health outcomes in the U.S. population, much of the existing research compares the health of immigrants to U.S.-born populations using the broad categories that constitute the racial hierarchy in the USA. However, the degree of immigrant pre-migration exposure to these (or any) racial hierarchies varies

✉ Sirry M. Alang
alang002@umn.edu

[1] Division of Health Policy and Management, University of Minnesota School of Public Health, 420 Delaware St S.E., Minneapolis, MN 55455, USA

based on immigrants' country of origin. For example, immigrants from countries such as Canada, France, and England have had exposure to racial structures that are comparable to the USA; whereas, immigrants from sub-Saharan Africa, South America, and Southeast Asia may not be as familiar with a heterogeneous, white majority system of racial stratification [13], although systems that advantage more light-skinned persons are still in place. As foreign-born persons enter a specific form of racialized space in the USA where, historically, opportunity has been provided based on whiteness and where racial health disparities are persistent [14–17], immigrants may begin to be forced into U.S. racial hierarchical patterning or may distinguish themselves from U.S.-born racial/ethnic minority populations to avoid marginalization and discrimination.

Immigrants in the USA may share similar experiences of migrating, but their immigrant status plays a smaller role than their race and ethnicity in determining socio-economic outcomes in the USA [18]. Hispanic/Latino immigrants and immigrants from racial minority groups are significantly more disadvantaged, while non-Hispanic White immigrants quickly become like U.S.-born Whites—occupying higher positions within the social hierarchy [19, 20]. Hispanic immigrants, even though they constitute a racially heterogeneous group, are racialized as one group of individuals with many races but who are linked closely by ethnicity [21]. In general, Hispanics and Latinos in the USA are perceived to occupy a distinct and sometimes intermediate position between non-Hispanic Whites and non-Hispanic Blacks. And, although most light-skinned Latinos, classify themselves as White, they are often excluded from the privilege that non-Latino/Hispanic Whites experience [22, 23]. Race and ethnicity complicate the immigrant experience such that it no longer makes sense to talk about a monolithic immigrant population. Immigrants experience racial and ethnic differences in opportunities and constraints that might have implications for health over time.

The main goal of this study is to explore the effects of U.S. race-based and ethnicity stratifications on the health trajectories of immigrants over time. Health trajectories are associated with subjective perceptions of self-rated health (SRH). Identifying racial and ethnic patterns in SRH among immigrants is relevant if there is genuine interest in eliminating health disparities in the USA and in guaranteeing overall population health and wellbeing. Cross-sectional, nationally representative survey data are used to address three specific objectives: (1) Examine racial and ethnic differences in self-rated health among immigrants; (2) Assess the degree to which differences in education, income, employment status, and access to insurance explain racial and ethnic differences in self-rated health among immigrants; and (3) Determine the effect of time in the USA on racial and ethnic patterning of self-rated health among immigrants. Since more time in the USA reflects longer exposure to the U.S. racial terrain where persons who belong to racial minority groups and who are of Hispanic ethnicity are exposed to circumstances such as socio-economic disadvantage and discrimination that impact health [24–26], we hypothesize that longer time in the USA should be associated with poorer SRH among immigrants who belong to minority groups compared to non-Hispanic White immigrants. Assessing racial and ethnic patterns in SRH among immigrants is an important step towards predicting future patterns of disparities in the general population, especially as immigration continues to be the dominant factor in population growth in the USA.

Materials and Methods

Data

Data were obtained from the Integrated Health Interview Series (IHIS). The IHIS is an online resource of harmonized data from the National Health Interview Survey (NHIS) from 1969 to present [27]. The NHIS is a cross-sectional annual survey that uses a multi-stage probability sample design to collect health data on a nationally representative non-institutionalized U.S. sample. Data from 2012 were used for analyses. The analytic sample consisted of 16,288 persons who were not born in the USA or in a U.S. territory. Distinction of immigrants based on reason for immigration is not provided in dataset, but we assumed that the sample included short-term visitors such as students and temporary workers, permanent residents, asylees, refugees, undocumented non-citizens, and naturalized citizens.

Measures

Main Variables The dependent variable is self-rated or self-reported health. In the NHIS, respondents are asked whether they would rate their health in general as excellent, very good, good, fair, or poor. Responses were dichotomized into poor health (fair or poor) and good health (excellent, very good, or good), as is commonly done in health research [28–30]. The key independent variable is race/ethnicity. Respondents selected a racial category and indicated whether they were of Hispanic ethnicity. Since Hispanics/Latinos do not conceptualize racial categories exclusively in terms of skin color, and are racialized based on ethnicity [21], a combined race/ethnicity variable was created with ethnicity assigned first. The variable consists of the following categories: non-Hispanic White, non-Hispanic Black, Hispanic, and Asian. Non-Hispanic persons who identified as American Indian/Alaskan Native and multiple and other race were excluded because of their limited sample size among the foreign-born population.

Socio-economic Indicators Socio-economic indicators included educational attainment (less than high school, completed high school, some college, college degree, and graduate degree), employment status (employed/unemployed or not in the labor force), annual household income in relation to percentage of the Federal Poverty Line (FPL) (less than 100 % FPL, 100–199 % FPL, 200–299 % FPL, 300–399 % of FPL 400 % or more of FPL), and health insurance status (insured/uninsured).

Time in the USA In the NHIS, length of stay in the USA is divided into five categories (<1, <5, <10, <15, or ≥15 years). The first two categories are combined in our analyses to increase cell sizes.

Other Covariates Other variables controlled for in this study include age (continuous), gender (male/female), marital status (single/never married, divorced/separated/widowed, married), U.S. citizenship (yes/no), and language in which the survey was completed (English only, Spanish/Spanish, and English). These factors are associated with health status and might confound the relationships between race, length of stay in the USA and SRH among immigrants [31–36].

Analyses

Bivariate differences between groups on socio-demographic factors and health status were assessed using two sample tests of proportions with non-Hispanic Whites as the reference. Logistic regressions were computed to assess the association between race/ethnicity and poor SRH. The unadjusted model was fitted first. Next, demographic variables and socio-economic indicators were included successively to assess if any of these factors intervened in the relationship between race/ethnicity and SRH (Aim 2). Then, U.S. citizenship status, language of survey, and length of stay in the USA were adjusted. An interaction between race/ethnicity and length of stay was tested to assess whether the association between race/ethnicity and SRH varied by length of stay (Aim 3). In all analyses, sampling weights were used to account for differential selection probability [24]. Standard errors were adjusted for the complex sampling design. We used the standard alpha level of 0.05 to assess significance of relationships.

Results

Table 1 describes characteristics of the immigrant population by race. Non-Hispanic Black immigrants make up the smallest percentage of foreign-born persons (8.1 %) and Hispanics the largest accounting for almost one half of the immigrant population (45.8 %). There are important differences in SRH. Compared to non-Hispanic White immigrants (13.1 %), a significantly smaller proportion of non-Hispanic Black immigrants (8.8 %) and Asian immigrants (10.9 %) have poor SRH, while a greater proportion of Hispanic immigrants have poor SRH (14.7 %).

There are also important differences in demographic and socio-economic characteristics. Hispanic immigrants are less likely than non-Hispanic White immigrants to be women. Non-Hispanic White immigrants are also significantly older than each of the other immigrant groups. Black and Hispanic immigrants are more likely to be socio-economically disadvantaged than their non-Hispanic White counterparts. For example, about four times as many Hispanic immigrants have less than a high school education compared to non-Hispanic White immigrants. Both Black and Hispanic immigrants are less likely to have a college degree, more likely to be unemployed or living in poverty, and are more likely to be uninsured compared to non-Hispanic White immigrants. Relative to Whites, the only area where Asian immigrants show greater disadvantage is likelihood of living in poverty. The majority of immigrants who took part or all of the survey in Spanish are Hispanic immigrants. Finally, White immigrants have spent longer time in the U.S., and a greater proportion of them are naturalized U.S. citizens compared to the other groups. Although approximately two thirds of Hispanic immigrants are not naturalized U.S. citizens, more than one half of foreign-born Hispanics have lived in the USA for at least 15 years.

Results from logistic regressions[1] are presented in Table 2. The unadjusted model shows that non-Hispanic Black immigrants and Asian immigrants had lower odds of rating their health as poor compared to non-Hispanic White immigrants (OR=0.69, CI=0.54–0.87 and OR=0.82 CI=0.70–0.96, respectively). However, Hispanic immigrants had higher odds of poor SRH than their non-Hispanic White counterparts (OR=1.25, CI=1.09–1.43). Once socio-demographic characteristics were controlled in Model 2, the odds of poor SRH became similar for Asians and non-Hispanic Whites, and for Hispanics and non-Hispanic Whites. Age accounted for the White-Asian difference in SRH as the odds of poor SRH for Asians became similar to non-Hispanic Whites with the addition of age to the model. Controlling for education and family income accounted for the White-Hispanic difference in SRH. However, holding demographic and socio-economic indicators constant across immigrant groups did not eliminate the Black-White difference. Non-Hispanic Blacks still fared better and had significantly lower odds of poor SRH compared to non-Hispanic Whites (OR=0.76, CI=0.58–0.98).

In the third model, after language, U.S. citizenship and length of stay were controlled; Blacks and Whites had similar

[1] Analyses were also run beginning with racial categories only, (Black, White, Asian) and then controlling ethnicity (Hispanic). The results were similar to those obtained with the combined race and ethnicity categories (non-Hispanic Black, non-Hispanic White, Hispanic, Asian) that we present in this paper.

Table 1 Descriptive statistics of U.S. immigrants by race

	Non-Hispanic White		Non-Hispanic Black		Hispanic		Asian		Total	
	(*N*=2224, 23.3 %)		(*N*=1189, 8.1 %)		(*N*=8729, 45.8 %)		(*N*=4146 22.8 %)		(*N*=16,288)	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Poor self-rated health	285	13.1	110	8.8***	1358	14.7**	449	10.9*	2202	13.0
Gender: female	1186	52.9	644	51.8	4501	47.8*	2249	53.1	8580	50.5
Age (x)	2224	49.5	1189	44.0**	8729	42.0**	4146	46.1*	16,288	44.9
Marital status										
Single/never married	355	16.8	330	29.3***	1933	22.5**	791	18.1**	3409	20.7
Sep/Div/Wid	392	17.1	250	19.4	1365	15.2	472	11.5	2479	15.1
Married	1467	66.1	596	51.3*	5396	62.3	2869	70.3	10,328	64.1
Education										
Less than high school	393	11.4	193	15.4	4402	50.5***	569	13.6	5409	30.0
Completed high school	477	21.6	310	26.4	1983	23.9	769	18.2	3536	22.3
Some college	316	14.3	210	19.0*	842	10.4**	504	12.0	1872	12.4
College degree	755	34.7	356	30.4*	990	12.5***	1454	36.1	3555	24.6
Graduate degree	394	18.0	98	8.8***	185	2.7***	743	20.1	1420	10.8
Survey in Spanish/Spanish and English	19	0.8	5	0.4	5263	60.3***	4	0.1	5291	32.5
Unemployed	862	38.8	374	31.1***	3205	35.4*	1563	37.5	6004	36.3
Poverty										
Less than 100 % FPL	233	10.9	216	17.4**	2745	30.1***	683	15.8*	3877	21.4
100–199 % FPL	365	16.5	279	22.4*	3137	35.2***	783	17.6	4564	25.8
200–299 % FPL	343	15.2	215	18.5	1424	16.6	669	15.9	2651	16.2
300–399 % FPL	289	12.8	152	13.0	618	7.4**	481	12.0	1540	10.2
400 %+ FPL	994	44.6	327	28.8***	805	10.7***	1530	38.7**	3656	26.4
Uninsured	350	16.0	281	25.2**	4433	51.1***	740	17.6	5804	33.2
Not a U.S. citizen	692	31.6	453	37.9**	5697	65.3***	1667	39.2**	8509	49.3
Length of stay in USA										
Less than 5 years	165	7.8	126	10.3*	513	6.2	555	13.1**	1359	8.5
5 to less than 10 years	182	8.5	165	15.8**	1184	14.7**	602	14.7**	2133	13.3
10 to less than 15 years	287	13.0	206	18.2	1715	21.1**	551	13.5	2759	17.2
15 years or more	1530	70.7	658	55.7***	5022	58.1**	2345	58.7**	9555	61.0

Significantly different from White immigrants

*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$

odds of poor SRH. Persons who completed the interview survey in Spanish only, or in a combination of English and Spanish had slightly higher odds of poor SRH than respondents who completed the survey entirely in English (OR=1.11, CI=1.01–1.49). While citizenship status did not have a significant effect on SRH; immigrants who had lived in the USA for 15 years or longer had higher odds of poor SRH than immigrants who had lived in the USA for less than 5 years (OR=1.58, CI=1.23–2.02). Although controlling length of time in the USA reduced the odds of reporting poor SRH for Blacks compared to Whites to non-significance in Model 3, the size of the effect (OR=0.81, CI=0.70–1.08) is not substantially different than that found in Model 2 (OR=0.76, CI=0.58–0.98). Finally, we assessed whether the association between race/ethnicity and SRH varied by length of stay by interacting race/ethnicity and length of stay; results were not significant (not tabled).

Discussion

The first aim of this study was to describe racial differences in SRH among immigrants. Before adjusting for employment, education, and income, Hispanic immigrants appeared to have worse SRH than non-Hispanic White immigrants, while non-Hispanic Black and Asian immigrants appeared to have better SRH compared to White immigrants. However, after including demographic and socio-economic factors in the model (addressing Aim 2), we find that lower levels of education and family income explained poorer SRH among Hispanic

Table 2 Logistic regressions of poor SRH on race, demographics, socio-economic characteristics, health insurance, U.S. citizenship, and length of stay in the USA

	Model 1		Model 2		Model 3	
	OR	SE	OR	SE	OR	SE
Race (ref: non-Hispanic White)						
Non-Hispanic Black	0.69**	0.08	0.76*	0.10	0.81	0.11
Hispanic	1.25***	0.08	1.14	0.10	1.01	0.08
Asian	0.82*	0.06	0.95	0.08	0.91	0.09
Other demographic characteristics						
Female (ref: male)			0.95	0.05	0.97	0.61
Age			1.04***	0.00	1.14***	0.00
Marital status (ref: never married)						
Sep/Div/Wid			1.01	0.09	1.02	0.09
Married			0.87	0.06	0.87	0.06
Socio-economic characteristics						
Education (ref: less than high school)						
Completed high school			0.66***	0.04	0.66***	0.04
Some college			0.58***	0.05	0.57***	0.05
College degree			0.47***	0.04	0.48***	0.04
Graduate degree			0.43***	0.06	0.44***	0.06
Unemployed (ref: employed)			2.02***	0.1	2.05***	0.13
Poverty (ref:<100 % of FPL)						
100–199 % FPL			0.74***	0.04	0.72***	0.05
200–299 % FPL			0.59***	0.04	0.57***	0.05
300–399 % FPL			0.48***	0.05	0.46***	0.05
400 %+ FPL			0.30***	0.03	0.28***	0.02
Uninsured (ref: insured)			0.88*	0.05	0.94	0.05
Survey in Spanish or Spanish and English (ref: English only)				1.11*	0.10	
Not U.S. citizen (ref: U.S. citizen)				1.00	0.06	
Length of stay (ref: less than 5 years)						
5 to less than 10 years				1.11	0.16	
10 to less than 15 years				1.07	0.15	
15 years or more				1.58***	0.20	

*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$

immigrants and that younger age explained better SRH among Asian immigrants. Socio-economic status did not explain better SRH among non-Hispanic Black immigrants compared to their White counterparts. Indeed, given their greater disadvantage, we would expect that they would have worse SRH than non-Hispanic Whites. The Black advantage in SRH was reduced to non-significance when time in the USA was added to the model (Aim 3). However, the interaction of time in country with Black race was not significant, indicating that the SRH of Black immigrants did not decrease significantly with time in the USA. Taken together, these findings suggest that although the SRH of all immigrants decreases with time in country, there are no racial/ethnic differences in this trend.

For all immigrants, having lived in the USA for 15 years or longer was associated with higher odds of poor self-rated health—a finding consistent with the body of research suggesting that more time in the USA is associated with poorer health. Although time in the USA is not synonymous with acculturation, prior research suggests that longer time in the USA facilitates the adoption of U.S. norms and ways of life and the loss of cultural aspects that may have protective effects on health [37, 38]. Acculturation may therefore explain greater odds of poor SRH among immigrants who have resided in the USA for 15 years or longer.

The Hispanic paradox—findings of similar or better health outcomes among Hispanics compared to Whites despite the lower socio-economic status of Hispanics in the USA—has been consistently documented [39–41]. However, SRH is an exception to this paradox because SRH for Latinos has been constantly poorer than for Whites [36, 42, 43]. Evidence from this study supports previous findings that SRH is an exception to the Hispanic paradox. Hispanic immigrants were more

socio-economically disadvantaged and still had poorer SRH than Whites in the unadjusted model. However, controlling for income and education differences eliminated this disparity. Therefore, poor socio-economic conditions have strong negative effects on the SRH of Hispanic immigrants.

Findings of similar SRH among non-Hispanic Black compared to White immigrants are contrary to general observations based on research that focuses on the U.S.-born population where the greatest heath disparities are between Blacks and Whites with Blacks having poor SRH, worse health outcomes, and experiencing excess morbidity and mortality [16, 44, 45]. Researchers have argued that racial differences in socio-economic status (SES) are fundamentally responsible for the racial disparities in health that are observed in the U.S. population [46, 47]. We demonstrate that despite the fact that non-Hispanic Black immigrants face greater socio-economic disadvantage than their White counterparts, they have similar SRH.

One possible explanation for the finding of no difference in SRH between non-Hispanic Black and non-Hispanic White immigrants may be a function of health selection. The majority (89.5 %) of Black immigrants in our sample are from the African continent, Central America, and South America. Studies show that immigration to the USA from these regions, compared to other predominantly White regions is significantly driven by poverty, war, economic depression, political instability, repressive governments, and unemployment caused by the breakdown of the post-colonial economy [48–51]. Relative to White immigrants, Black immigrants might need to be healthier to initiate and complete the migration process. Contrary to this hypothesis, however, is previous work suggesting that health selection of migrants from Africa and from Western European countries and other countries where immigrants are more likely to be White tends to be similar [37, 52].

A second potential explanation is that there might be differences in the reference for social comparison of health among Black and White immigrants, and these may influence ratings of subjective assessments of health [53]. Generally, immigrants are more likely to compare their achievements to persons left behind in sending countries than to persons of similar or other races in the USA [54–58]. At the same level of objective health, Blacks who have migrated from more disadvantaged countries than Whites may be more likely to rate their health positively. More research is needed to explore how the choice of reference for rating current overall health might change with time in the USA.

Limitations

This study should be considered in light of important limitations. First, it was impossible to obtain data on means of entry and reason for immigration to the USA. These are measures that would have enriched the analyses given that there is a lot of variation among immigrants of the same race and ethnicity. Second, percentage of life in the USA would have been a better estimate for the level of integration into the U.S. Society. The lack of age at immigration or a continuous variable for time in the USA is a major limitation of the public-use data for this study. Third, this paper only considers one measure of health status—self-rated health. Whether these racial and ethnic differences are consistent with other measures of health remains to be determined. Finally, immigrants were grouped together based on racial and ethnic identification. Other research suggests that there may be important differences in health status of persons who identify of the same race depending on their country of origin [13].

Implications for Health Disparities

Findings from this study have implications for health disparities research and for addressing gaps in health outcomes in the USA. Much of the health disparities literature groups persons into broad racial/ethnic categories, such as White, Black, or Hispanic, and does not consider immigrant status. Our research adds to the growing body of literature that emphasizes that simply examining differences among race/ethnic categories is not enough. Indeed, the Black-White health disparities that have received so much policy attention do not play out when we examine self-assessed health among immigrants. We find that race is not associated with SRH among immigrants. The reasons why non-Hispanic Black immigrants have similar SRH to non-Hispanic White immigrants, despite greater social disadvantage, warrant further attention.

Conflict of Interest Sirry Alang, Ellen McCreedy, and Donna McAlpine declare that they have no conflict of interest.

Informed Consent This study analyzed de-identified public-use data. Subjects were not contacted; therefore, no informed consent was obtained.

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