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Social Determinants of Physical Self-Rated Health among Asian Americans; Comparison of Six Ethnic Groups

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Abstract: *Background:* A growing literature has revealed ethnic group differences in determinants and meanings of their self-rated health (SRH). *Aim:* To explore ethnic variations in the effects of socioeconomic determinants on poor physical SRH of Asians in the United States. *Methods:* Data came from the National Asian American Survey (NAAS), 2008, with 4977 non-U.S. born Asian Americans, including Asian Indian ($n = 1150$), Chinese ($n = 1350$), Filipino ($n = 603$), Japanese ($n = 541$), Korean ($n = 614$), and Vietnamese ($n = 719$) Americans. Demographic factors (age and gender), socioeconomic status (SES; education, employment, income, and marital status), and physical SRH were measured. Ethnic-specific logistic regressions were applied for data analysis where physical SRH was the outcome and demographic and social determinants were predictors. *Results:* According to logistic regressions, no social determinant was consistently associated with physical SRH across all ethnic groups. Being married was associated with better physical SRH in Asian Indians and worse SRH in the Filipino group. Education was associated with better SRH in Asian Indian, Chinese, Korean, and Vietnamese Americans. High income was associated with better SRH in Chinese, Filipino, and Vietnamese Americans. Employment was associated with better SRH in Filipino Americans. *Conclusion:* Social determinants of physical SRH vary across ethnic groups of Asian Americans. Different ethnic groups are differently vulnerable to various social determinants of health. Application of single item SRH measures may be a source of bias in studies of health with ethnically diverse populations. Policy makers should be aware that the same change in social determinants may not result in similar change in the health of ethnic groups.

Keywords: self-rated health; social determinants; socioeconomic status; ethnic groups

1. Introduction

Self-rated health (SRH) measures are brief and cost-effective methods to estimate population health in large-scale epidemiological studies [1–5]. The Institute of Medicine (IOM) has recommended the use of single-item SRH measures as a standard tool to monitor the health of Americans [6–8]. Single-item SRH measures [9] independently predict a wide range of physical and mental health outcomes, such as health care use [10,11], chronic disease [2,12–14], and mortality [15].

Individuals are not expected to seek help unless they perceive their own SRH as poor [10,15–22]. That means perception of own health as poor is a part of the cognitive process that is involved in the health-care seeking process [16,17]. Although other factors such as trust, access, and socioeconomic status (SES) also play a role in determining who seeks care [18], populations should not be expected

to seek care unless they feel a need for it. Given the central role of poor SRH in the process of health care use [23], we need to better understand what physical SRH actually reflects across ethnic groups [2,12–14,24–36].

A growing body of research has shown that demographic, SES, and health determinants impact the SRH of diverse ethnic groups differently [12,26,28]. The very same factors show different patterns of association with SRH across ethnic groups [30–36]. Overall, it is believed that poor SRH better reflects the real health need for White, rather than non-White, populations, including Asians, African Americans, and Hispanics [12]. For instance, poor SRH better predicts premature risk of mortality for Whites than non-Whites [30]. Even within a racial group, such as Asians, ethnic variations exist in correlates of SRH [28,31]. However, very few studies have compared ethnic groups of Asians in the United States for social determinants of physical SRH.

Aims

This study was conducted to compare six ethnic groups of Asian Americans for social determinants of poor physical SRH.

2. Methods

2.1. Design and Setting

Using a cross-sectional design, this study was a secondary analysis of the National Asian American Survey (NAAS), 2008. The study is on the six largest national-origin Asian groups in the United States. The study was funded by the James Irvine Foundation, Eagleton Institute of Politics, Rutgers University, Carnegie Corporation, and Russell Sage Foundation [37].

2.2. Interviews

Data collection was conducted using telephone interviews. Interviews were conducted between 12 August and 29 October, 2008. Survey interviews were performed in eight languages, which were chosen according to the interviewee's preference. Interview languages were English, Cantonese, Mandarin, Korean, Vietnamese, Tagalog, Japanese, and Hindi. Overall, 40 percent of the interviews were conducted in English, as it was the preferred language by the participant. The mode of data collection was computer-assisted telephone interview (CATI). Forty-seven percent of respondents (12% of all valid numbers dialed) agreed to take the survey [37].

2.3. Data Collection

The study measured demographics, SES, political behaviors, as well as experiences related to immigration in the United States. Some of the constructs measured included discrimination, religious attendance, and social networks. The interviews took about 29 min on average [37].

2.4. Participants

The NAAS included 5159 individuals who all self-identified as Asian/Asian American residents of the United States. Asians/Asian Americans were defined as adults in the United States who had a family background from an Asian country. The study excluded Middle Eastern countries. The study sample composed of 4977 non-U.S. born Asian Americans including Asian Indian ($n = 1150$), Chinese ($n = 1350$), Filipino ($n = 603$), Japanese ($n = 541$), Korean ($n = 614$), and Vietnamese ($n = 719$). We did not include 182 additional respondents who identified as multi-ethnic or were from other Asian countries [37].

2.5. Ethics

The NAAS study protocol was approved by the University of California (Irvine and Riverside) Institutional Review Board (IRB). All participants provided consent.

2.6. Measures

Physical Self-Rated Health. We asked participants “How would you rate your overall physical health?” Response items included the following five categories: (1) excellent; (2) very good; (3) good; (4) fair; and (5) poor. Single-item SRH measures strongly correlate with multi-item health measures [9]. Single-item SRH measures also predict risk of mortality, net of confounders [15]. Reliability of single-item SRH measures is shown to be high [38]. These single-item measures also strongly correlate with standard well-being scales [38].

Demographic Factors. Demographic factors included gender (dichotomous variable, males [reference category] vs. females) and age (continuous measure).

Socioeconomic Factors. The study measured four socioeconomic indicators, namely education level, household income, marital status, and employment. Education was measured as the highest level completed of the following: (1) primary or grammar school; (2) some high school; (3) high school graduate; (4) some college; (5) college graduate; (6) all Masters (MA, MSc, MPH, MPA, MPP, MArch, Med, MBA); (7) Law degree (JD); (8) Doctorate (all other Doctorates; Ph.D, Ed.D, Psych D) or Medical Degree (M.D., D.O.; Dentistry, Optometry). Annual household income was measured as (1) Up to \$20,000; (2) \$20,000 to \$35,000; (3) \$35,000 to \$50,000; (4) \$50,000 to \$75,000; (5) \$75,000 to \$100,000; (6) \$100,000 to \$125,000; (7) \$125,000 to \$150,000; and (8) \$150,000 and over. Marital status was defined as being (1) married or living as married; vs. (2) others (including widowed, divorced, separated, and never married). Education and income were conceptualized as continuous measures. Marital status and employment were treated as dichotomous measures.

Ethnicity. In this study, ethnicity was self-identified and included Asian Indian, Chinese, Filipino, Japanese, Korean, and Vietnamese. The items to measure ethnicity were by these questions: (1) What race or ethnicity do you consider yourself? (2) Are there any other racial or ethnic groups that describe you? (3) What part of Asia is that part of your family from? (4) What country were you born in?

2.7. Statistical Analysis

2.7.1. Weights

To accommodate the National Asian American Survey (NAAS) multi-stage sampling design, we applied sampling weights to all our data analysis. This approach enabled us to generate nationally representative statistics. Taylor series linearization was used to estimate design-based standard errors and variances. To perform our subsample analyses, we applied sub-pop survey commands.

2.7.2. Analysis Plan

Stata 13.0 (Stata Corp., College Station, TX, USA) was used to conduct the analyses. For descriptive statistics, we reported mean (SE) and proportions (SE). For multivariable analysis, we ran logistic regressions in the pooled sample, as well as in each ethnic group. In all models, poor SRH was the outcome. First, we ran a model in the pooled sample. Then we ran ethnic-specific models. Odds Ratio (OR) with 95% Confidence Intervals (CI) were reported. A *p*-value less than 0.05 was considered significant.

3. Results

3.1. Descriptive Statistics

Table 1 provides a summary of descriptive statistics for each ethnic group. Best SRH was reported by Asian Indians, followed by Japanese. Worst SRH was reported by Koreans, followed by Vietnamese. Asian Indian and Other Asians were the youngest group, while Filipinos and Koreans were the oldest group. Asian Indian and Japanese had the highest education attainment, and Vietnamese had the lowest education level. Asian Indian and Japanese had the highest income, and Chinese and Vietnamese had the lowest income (Table 1).

Table 1. Descriptive statistics.

Variable	Pooled Sample		Asian Indian		Chinese		Filipino		Japanese		Korean		Vietnamese	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Gender														
Men	2466	54	628	61.2	627	48.3	290	55.8	130	46.1	313	52.4	403	57.4
Women	2101	46	397	38.7	672	51.7	230	44.2	152	53.9	284	47.6	299	42.6
Not Married	632	14.3	107	11.2	139	10.9	108	21.9	58	21.1	80	13.6	109	15.6
Married	3788	85.7	847	88.8	1135	89.1	386	78.1	217	78.9	509	86.4	591	84.4
SRH														
Excellent to Good	3388	74.7	931	91.7	912	70.5	400	78.3	230	81.9	366	61.5	445	63.7
Poor or Fair	1146	25.3	84	8.3	381	29.5	111	21.7	51	18.1	229	38.5	254	36.3
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
Age	53.09	14.62	47.86	12.96	52.13	14.81	57.81	14.4	55.42	15.77	55.98	13.8	55.2	14.02
Education	4.56	1.53	5.43	1.13	4.46	1.7	4.63	1.16	4.73	1.21	4.61	1.39	3.4	1.35
Household Income	4.31	2.27	5.72	1.98	3.93	2.26	4.49	2.12	4.91	1.96	4.13	2.14	3.13	1.97

SE: Standard Error; SES: Socioeconomic Status; SRH: Self-Rated Health.

3.2. Logistic Regression in the Pooled Sample

Table 2 summarizes a logistic regression model, with poor physical SRH as the outcome in the pooled sample. Based on this model, age, education, income, employment, and marital status were associated with SRH (Table 2).

Table 2. Factors associated with poor physical self-rated health (SRH) in the pooled sample.

	OR	95% CI
Gender (women)	1.09	0.84–1.41
Age ≥ 50	1.94 ***	1.46–2.57
Education	0.84 ***	0.77–0.93
Employment	0.69 **	0.52–0.91
Household Income	0.87 ***	0.81–0.94
Marital Status	1.47 *	1.02–2.12
Ethnicity		
Japanese	ref	
Asian Indian	1.00	0.48–2.08
Chinese	2.38 **	1.38–4.11
Filipino	1.90 *	1.04–3.48
Korean	4.86 ***	2.74–8.60
Vietnamese	2.01 *	1.13–3.59
intercept	0.55 #	0.27–1.11

$p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

3.3. Logistic Regression across Ethnic Groups

Table 3 also shows the results of logistic regressions specific to each ethnic group. Ages higher than 50 were associated with worse physical SRH in Asian Indian, Chinese, and Korean Americans. Being married was associated with better physical SRH in Asian Indians, and worse SRH in Filipinos. Female gender was associated with better SRH among Japanese Americans. Education was associated with better SRH in Asian Indian, Chinese, Korean, and Vietnamese Americans. High income was associated with better SRH in Chinese, Filipino, and Vietnamese Americans. Employment was associated with better SRH in Filipino Americans (Table 3).

Table 3. Factors associated with poor physical self-rated health (SRH) across ethnic groups.

	Asian Indian		Chinese		Filipino		Japanese		Korean		Vietnamese	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Gender (Women)	0.68	0.28–1.66	1.35	0.89–2.04	0.93	0.45–1.92	0.38 *	0.16–0.94	1.36	0.80–2.31	0.96	0.52–1.78
Age \geq 50	2.74 *	1.19–6.33	1.85 **	1.19–2.86	1.16	0.52–2.59	2.29	0.65–8.08	2.66 ***	1.54–4.61	1.70	0.85–3.42
Education	0.72 *	0.53–0.97	0.86 *	0.75–0.99	0.91	0.70–1.19	0.92	0.69–1.23	0.84 *	0.71–1.00	0.64 ***	0.50–0.84
Employment (Employed)	0.86	0.34–2.21	0.85	0.56–1.29	0.44 *	0.20–0.95	1.02	0.45–2.28	0.86	0.48–1.53	0.55 #	0.29–1.07
Household Income	1.02	0.80–1.32	0.89 *	0.81–0.98	0.73 **	0.59–0.89	0.76 #	0.57–1.01	0.95	0.83–1.09	0.81 *	0.66–1.00
Marital Status (Married)	0.30 *	0.10–0.90	1.51	0.86–2.66	2.37 *	1.01–5.60	1.46	0.55–3.85	1.50	0.66–3.44	1.80	0.85–3.80
Intercept	0.82	0.16–4.22	0.46 #	0.18–1.16	1.12	0.26–4.85	0.38	0.03–4.42	0.62	0.23–1.67	1.91	0.53–6.87

$p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; SES: Socioeconomic Status; SRH: Self-Rated Health.

4. Discussion

This study explored ethnic variation in social determinants of physical SRH in Asian Americans. The results suggested that social determinants of physical SRH vary across ethnic groups of Asian Americans. That is, different ethnic groups are differently vulnerable to various social determinants of health.

Asian Indians, and then Japanese, had the highest SES (education and income), so ethnic groups of Asian Americans vary in their class. In line with SES, Asian Indians reported the highest level of physical SRH. The main effects of ethnicity on SRH were significantly above and beyond demographic and social determinants of health. This finding suggests that not all of the associations between ethnicity and SRH are due to social determinants.

In the pooled sample, education, employment, marital status, and income were associated with high SRH among Asian Americans. However, none of these associations were consistent across ethnic groups. Age is a risk factor for poorer SRH in the literature. In a recent study using the Collaborative Psychiatric Epidemiology Surveys (CPES) 2001–2003 data, high age was associated with poor mental SRH in Vietnamese, Filipino, and Chinese, but not other Asians [39].

For Asian Indians and Koreans, income was not associated with SRH. For other groups, income was at least marginally protective. Income was similarly protective for ethnic groups in the United States [40]. Income may be a more salient determinant of health in U.S. than some other countries [41]. Education and income have shown diminished returns for minorities in the United States [40,42]. Minority groups with high education and income may even be at risk of worse mental health [43–47].

With Japanese being the only exception, gender did not independently correlate with physical SRH in any of the ethnic groups, when SES indicators were controlled. Female gender was also not associated with poor SRH in the pooled sample, again when SES was controlled. Although an association between gender and SRH is reported, ethnic groups differ in these effects [41,48]. SRH may differently reflect health of men and women [49]. Based on the sponge hypothesis [50], women are more aware of their physical symptoms [49], so their reports may be more accurate than men's reports. For men, poor SRH is more likely to represent life-threatening conditions than mild health problems. As a result, poor SRH better predicts the risk of mortality in men, rather than older female Americans [30].

The associations between ethnicity, gender, SES, and SRH are complex. In a study in Costa Rica, Uruguay, Argentina, Barbados, and Cuba, chronic disease explained gender disparities in subjective health. Such mediation was not found in the other countries [41]. In another study, in Chinese and Cubans, but not other ethnic groups (i.e., Vietnamese, Filipino, other Asian, Puerto Rican, Mexican, other Hispanic, African American, and non-Latino Whites), female gender was a risk factor for poor physical and mental SRH [39].

The direction of the association between marital status and physical SRH was reversed for Asian Indians and Filipinos. Married individuals report better SRH due to causation or selection mechanisms [51]. Married individuals have significantly lower mortality rates than unmarried persons [52]. The health gain of marital status may be smaller for minorities than Whites [53]. Future research should explore diminished health return of education, employment, marital status, and even income for Asian Americans in the United States. Similar diminished return of marital status [53] and other SES indicators [54,55] have been reported for other minority populations, such as African Americans.

5. Limitations

The study had a few limitations. First, the outcome was a single-item SRH. Validity of SRH may vary across ethnic groups of Asian Americans. A second limitation of the study was that only 47% of respondents (12% of all valid numbers dialed) agreed to take the survey. A third limitation was the possibility of measurement bias due to social desirability and self-serving bias, which could differ for

populations by gender, age, and ethnicity. Finally, the current study did not collect data on medical conditions and comorbidities.

6. Conclusions

To conclude, demographic and social determinants of physical SRH vary across different ethnic groups of Asian Americans. Different ethnic groups may be differently vulnerable to various demographic and SES indicators on SRH. These ethnic differences may cause bias in cross-ethnic comparison of self-rated health.

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Conflicts of Interest: The authors declare no conflict of interest.

Ethics: Consent was obtained from all participants included in the study. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

References

1. Cano, A.; Sprafkin, R.P.; Scaturo, D.J.; Lantinga, L.J.; Fiese, B.H.; Brand, F. Mental Health Screening in Primary Care: A Comparison of 3 Brief Measures of Psychological Distress. *Prim. Care Companion J. Clin. Psychiatry* **2001**, *3*, 206–210. [CrossRef] [PubMed]
2. Rohrer, J.E.; Arif, A.; Denison, A.; Young, R.; Adamson, S. Overall self-rated health as an outcome indicator in primary care. *J. Evaluation Clin. Pract.* **2007**, *13*, 882–888. [CrossRef] [PubMed]
3. Srole, L.; Langner, T.S.; Michael, S.T.; Opler, M.K.; Rennie, T.A. *Mental Health in the Metropolis: The Midtown Manhattan Study*; National Center for Biotechnology Information: Bethesda, MD, USA, 1962.
4. Gerald, G.; Veroff, J.; Feld, S. *Americans View Their Mental Health, 1957*. ICPSR03503-v1; Inter-University Consortium for Political and Social Research: Ann Arbor, MI, USA, 1975. Available online: <http://doi.org/10.3886/ICPSR03503.v1> (accessed on 1 April 2018).
5. Weissman, M.M.; Myers, J.K.; Ross, C.E. *Community Surveys of Psychiatric Disorders*; Rutgers University Press: New Brunswick, NJ, USA, 1986.
6. Idler, E.L.; Benyamini, Y. Self-rated health and mortality: A review of twenty-seven community studies. *J. Health Soc. Behav.* **1997**, *38*, 21–37. [CrossRef] [PubMed]
7. IOM. *State of the USA Health Indicators: Letter Report*; IOM: Le Grand-Saconnex, Switzerland, 2009. Available online: <http://www.iom.edu/Reports/2008/State-of-the-USA-Health-Indicators-Letter-Report.aspx> (accessed on 1 April 2018).
8. Healthy People 2002. Available online: <https://www.healthypeople.gov/2020/about/foundation-health-measures/General-Health-Status#one> (accessed on 1 April 2018).
9. Ahmad, F.; Jhaji, A.K.; Stewart, D.E.; Burghardt, M.; Bierman, A.S. Single item measures of self-rated mental health: A scoping review. *BMC Health Serv. Res.* **2014**, *14*, 398. [CrossRef] [PubMed]
10. Demirchyan, A.; Petrosyan, V.; Thompson, M.E. Gender differences in predictors of self-rated health in Armenia: A population-based study of an economy in transition. *Int. J. Equity Health* **2012**, *11*, 67. [CrossRef] [PubMed]
11. Olfson, M.; Marcus, S.C.; Tedeschi, M.; Wan, G.J. Continuity of antidepressant treatment for adults with depression in the United States. *Am. J. Psychiatry* **2006**, *163*, 101–108. [CrossRef] [PubMed]

12. Kim, G.; DeCoster, J.; Chiriboga, D.A.; Jang, Y.; Allen, R.S.; Parmelee, P. Associations between self-rated mental health and psychiatric disorders among older adults: Do racial/ethnic differences exist? *Am. J. Geriatr. Psychiatry* **2011**, *19*, 416–422. [[CrossRef](#)] [[PubMed](#)]
13. Chittleborough, C.R.; Baum, F.E.; Taylor, A.W.; Hiller, J.E. Monitoring inequities in self-rated health over the life course in population surveillance systems. *Am. J. Public Health* **2009**, *99*, 680–689. [[CrossRef](#)] [[PubMed](#)]
14. May, M.; Lawlor, D.A.; Brindle, P.; Patel, R.; Ebrahim, S. Cardiovascular disease risk assessment in older women: Can we improve on Framingham? British Women's Heart and Health prospective cohort Study. *Heart* **2006**, *9*, 1396–1401. [[CrossRef](#)] [[PubMed](#)]
15. Idler, E.L.; Kasl, S. Health perceptions and survival: Do global evaluations of health status really predict mortality? *J. Gerontol.* **1991**, *46*, S55–S65. [[CrossRef](#)] [[PubMed](#)]
16. Chamberlain, A.M.; Manemann, S.M.; Dunlay, S.M.; Spertus, J.A.; Moser, D.K.; Berardi, C.; Kane, R.L.; Weston, S.A.; Redfield, M.M.; Roger, V.L. Self-rated health predicts healthcare utilization in heart failure. *J. Am. Heart Assoc.* **2014**, *3*, e000931. [[CrossRef](#)] [[PubMed](#)]
17. Fernández-Olano, C.; Hidalgo, J.D.L.; Cerdá-Díaz, R.; Requena-Gallego, M.; Sánchez-Castaño, C.; Urbistondo-Cascales, L.; Otero-Puime, A. Factors associated with health care utilization by the elderly in a public health care system. *Health Policy* **2006**, *75*, 131–139. [[CrossRef](#)] [[PubMed](#)]
18. Wan, T.T.H.; Odell, B.G. Factors Affecting the Use of Social and Health Services among the Elderly. *Ageing Soc.* **1981**, *1*, 95–115. [[CrossRef](#)]
19. Katz, S.J.; Kessler, R.C.; Frank, R.G.; Leaf, P.; Lin, E.; Edlund, M. The use of outpatient mental health services in the United States and Ontario: The impact of mental morbidity and perceived need for care. *Am. J. Public Health* **1997**, *87*, 1136–1143. [[CrossRef](#)] [[PubMed](#)]
20. Zuvekas, S.H.; Fleishman, J.A. Self-rated mental health and racial/ethnic disparities in mental health service use. *Med. Care* **2008**, *46*, 915–923. [[PubMed](#)]
21. Bosworth, H.B.; Butterfield, M.I.; Stechuchak, K.M.; Bastian, L.A. The relationship between self-rated health and health care service use among women veterans in a primary care clinic. *Womens Health Issues* **2000**, *10*, 278–285. [[CrossRef](#)]
22. Kim, C.; Vahratian, A. Self-rated health and health care use among women with histories of gestational diabetes mellitus. *Diabetes Care* **2010**, *33*, 41–42. [[PubMed](#)]
23. Perestelo-Perez, L.; Gonzalez-Lorenzo, M.; Perez-Ramos, J.; Rivero-Santana, A.; Serrano-Aguilar, P. Patient involvement and shared decision-making in mental health care. *Curr. Clin. Pharmacol.* **2011**, *6*, 83–90. [[CrossRef](#)] [[PubMed](#)]
24. Kim, G.; Chiriboga, D.A.; Bryant, A.; Huang, C.H.; Crowther, M.; Ma, G.X. Self-rated mental health among Asian American adults: Association with psychiatric disorders. *Asian Am. J. Psychol.* **2012**, *3*, 44. [[CrossRef](#)]
25. Fleishman, J.A.; Zuvekas, S.H. Global self-rated mental health: Associations with other mental health measures and with role functioning. *Med. Care* **2007**, *45*, 602–609. [[PubMed](#)]
26. Jang, Y.; Park, N.S.; Kang, S.Y.; Chiriboga, D.A. Racial/Ethnic Differences in the Association between Symptoms of Depression and Self-rated Mental Health among Older Adults. *Community Ment. Health J.* **2014**, *50*, 325–330. [[CrossRef](#)] [[PubMed](#)]
27. Mawani, F.N.; Gilmour, H. Validation of self-rated mental health. *Health Rep.* **2010**, *21*, 61–75. [[PubMed](#)]
28. Kim, G.; Bryant, A.; Huang, C.; Chiriboga, D.; Ma, G.X. Self-Rated Mental Health Among Asian American Adults: Association With Psychiatric Disorders. *Asian Am. J. Psychol.* **2012**, *3*, 44–52. [[CrossRef](#)]
29. Levinson, D.; Kaplan, G. What does Self Rated Mental Health Represent. *J. Public Health Res.* **2014**, *3*, 287. [[CrossRef](#)] [[PubMed](#)]
30. Assari, S.; Lankarani, M.M.; Burgard, S. Black-white difference in long-term predictive power of self-rated health on all-cause mortality in United States. *Ann. Epidemiol.* **2016**, *26*, 106–114. [[CrossRef](#)] [[PubMed](#)]
31. Assari, S.; Dejman, M.; Neighbors, H.W. Ethnic Differences in Separate and Additive Effects of Anxiety and Depression on Self-rated Mental Health Among Blacks. *J. Racial Ethn. Health Disparities* **2016**, *3*, 423–430. [[CrossRef](#)] [[PubMed](#)]
32. Kawada, T. Question context, ethnic difference, and self-rated health. *Am. J. Public Health* **2014**, *104*, e3. [[CrossRef](#)] [[PubMed](#)]
33. Santos-Lozada, A.R. Self-rated mental health and race/ethnicity in the United States: support for the epidemiological paradox. *Peer J.* **2016**, *4*, e2508. [[CrossRef](#)] [[PubMed](#)]

34. Allen, C.D.; McNeely, C.A.; Orme, J.G. Self-Rated Health Across Race, Ethnicity, and Immigration Status for US Adolescents and Young Adults. *J. Adolesc. Health* **2016**, *58*, 47–56. [CrossRef] [PubMed]
35. Lee, S.J.; Moody-Ayers, S.Y.; Landefeld, C.S.; Walter, L.C.; Lindquist, K.; Segal, M.R.; Covinsky, K.E. The relationship between self-rated health and mortality in older black and white Americans. *J. Am. Geriatr. Soc.* **2007**, *55*, 1624–1629. [CrossRef] [PubMed]
36. Ferraro, K.F.; Kelley-Moore, J.A. Self-rated health and mortality among black and white adults: Examining the dynamic evaluation thesis. *J. Gerontol. B Psychol. Sci. Soc. Sci.* **2001**, *56*, S195–S205. [CrossRef] [PubMed]
37. Karthick, R.; Junn, J.; Lee, T.; Wong, J. *National Asian American Survey*, 2008. ICPSR31481-v2; Inter-University Consortium for Political and Social Research: Ann Arbor, MI, USA, 19 July 2012. [CrossRef]
38. McDowell, I. *Measuring Health: A Guide to Rating Scales and Questionnaires*, 3rd ed.; Oxford University Press: New York, NY, USA, 2006.
39. Assari, S. Demographic and Socioeconomic Determinants of Physical and Mental Self-rated Health across 10 Ethnic Groups in the United States. *Int. J. Epidemiol. Res.* **2017**, *4*, 185–193.
40. Assari, S.; Lankarani, M.M. Race and Urbanity Alter the Protective Effect of Education but not Income on Mortality. *Front. Public Health* **2016**, *4*, 100. [CrossRef] [PubMed]
41. Assari, S.; Lankarani, M.M. Does Multi-morbidity Mediate the Effect of Socioeconomics on Self-rated Health? Cross-country Differences. *Int. J. Prev. Med.* **2015**, *6*, 85. [CrossRef] [PubMed]
42. Assari, S.; Lankarani, M.M. Education and Alcohol Consumption among Older Americans; Black-White Differences. *Front. Public Health* **2016**, *4*, 67. [CrossRef] [PubMed]
43. Assari, S. Combined racial and gender differences in the long-term predictive role of education on depressive symptoms and chronic medical conditions. *J. Racial Ethn. Health Dis.* **2017**, *4*, 385–396. [CrossRef] [PubMed]
44. Hudson, D.L.; Neighbors, H.W.; Geronimus, A.T.; Jackson, J.S. The relationship between socioeconomic position and depression among a US nationally representative sample of African Americans. *Soc. Psychiatry Psychiatr. Epidemiol.* **2012**, *47*, 373–381. [CrossRef] [PubMed]
45. Hudson, D.L.; Bullard, K.M.; Neighbors, H.W.; Geronimus, A.T.; Yang, J.; Jackson, J.S. Are benefits conferred with greater socioeconomic position undermined by racial discrimination among African American men? *J. Mens Health* **2012**, *9*, 127–136. [CrossRef] [PubMed]
46. Assari, S.; Caldwell, C.H. High Risk of Depression in High-Income African American Boys. *J. Racial Ethn. Health Disparities* **2017**. [CrossRef] [PubMed]
47. Assari, S. Social Determinants of Depression: The Intersections of Race, Gender, and Socioeconomic Status. *Brain Sci.* **2017**, *7*, e156. [CrossRef] [PubMed]
48. Assari, S. Cross-country variation in additive effects of socio-economics, health behaviors, and comorbidities on subjective health of patients with diabetes. *J. Diabetes Metab. Disord.* **2014**, *13*, 36. [CrossRef] [PubMed]
49. Assari, S. Gender differences in the predictive role of self-rated health on short-term risk of mortality among older adults. *SAGE Open Med.* **2016**, *4*, 2050312116666975. [CrossRef] [PubMed]
50. Wolinsky, F.D.; Tierney, W.M. Self-rated health and adverse health outcomes: An exploration and refinement of the trajectory hypothesis. *J. Gerontol. Ser. B Psychol. Sci. Soc. Sci.* **1998**, *53*, S336–S340. [CrossRef]
51. Hanson, K.L.; Sobal, J.; Vermeulen, F.M. Social selection and social causation in marriage and health: Longitudinal evidence of body weight change. *Marriage Fam. Rev.* **2014**, *50*, 373–394. [CrossRef]
52. Lillard, L.A.; Panis, C.W. Marital status and mortality: The role of health. *Demography* **1996**, *33*, 313–327. [CrossRef] [PubMed]
53. Beckett, M.; Elliott, M.N. Does the Association between Marital Status and Health Vary by Sex, Race, and Ethnicity? 2002. Available online: <https://ideas.repec.org/p/ran/wpaper/02-08.html> (accessed on 1 April 2018).
54. Assari, S. Health Disparities Due to Blacks' Diminished Return: Public Policy Solutions. *Soc. Issues Policy Rev.* **2018**, *12*, 112–145. [CrossRef]
55. Assari, S. Unequal gain of equal resources across racial groups. *Int. J. Health Policy Manag.* **2018**, *7*, 1–9. [CrossRef] [PubMed]

