

Original Article

Association between General Sense of Mastery and Income in White- and African-American Adults

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ABSTRACT

Background: Some research has shown that general sense of mastery (i.e., sense of control over the forces that impact one's life) does not have universal causes and consequences in racial groups. For instance, sense of mastery better predicts depression and mortality for non-Hispanic Whites (NHWs) than that of African-Americans (AAs). **Objectives:** The objective of this study was to test the heterogeneity in the association between the sense of mastery and income by race in a nationally representative sample of NHW and AA adults. **Methods:** This study included a total of 3570 AA and 891 NHW adults who were enrolled to the National Survey of American Life. Variables included race/ethnicity, age, gender, socioeconomic status (SES and household income), and sense of mastery. Linear regression models were applied in the overall sample and also by race. **Results:** Overall, high sense of mastery was associated with high household income. In race-specific models, higher levels of sense of mastery were associated with high household income in AAs but not NHWs. **Conclusions:** Racial differences exist in how sense of mastery and income are correlated. It is not clear whether high income generates more sense of mastery for AAs or high sense of mastery is more essential for generating high income for AAs. Policy makers and clinicians should be aware that SES and sense of mastery are differently linked in AAs and NHWs.

KEYWORDS: African-Americans, Blacks, Coping, Ethnic groups, Mastery, Race, Racism, Socioeconomic status

INTRODUCTION

Although socioeconomic status (SES) and general sense of mastery (i.e., sense of control over the forces that impact one's life) are interconnected,^[1] this association may differ for racial groups.^[2] Sense of mastery may be one of the mechanisms by which SES protects and promotes health.^[3] However, less is known about how the link between SES and sense of mastery differs for diverse racial groups.^[2] This is particularly important because high SES results in far less health gain for the members of racial and ethnic minority groups, particularly for African-Americans (AAs).^[4-10] These patterns as called as minorities' diminished returns of SES that commonly seen for AAs.^[11] These patterns are robust as the same patterns are shown for children, youth, adults, and older adults, as well as a wide range of SES indicators such as education, income, employment, and marital status.^[4-10]

While overall, high SES (e.g., education and income) shows protective effects against undesired health outcomes,^[12] the health returns of high SES are almost always smaller for AAs^[4-10] compared to non-Hispanic Whites (NHWs). Education attainment, income, employment, and marital status have smaller effects on depression, self-rated health, drinking, smoking, diet, sleep, obesity, suicide, and life expectancy for AAs than NHWs.^[4-10]

One of the possible explanations for this phenomenon is that due to labor market discrimination, education attainment generates less income and wealth for AAs

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How to cite this article: Assari S. Association between general sense of mastery and income in White- and African-American adults. *Nurs Midwifery Stud* 2019;8:162-7.

Access this article online

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DOI:
10.4103/nms.nms_47_18

than NHWs.^[13] This explanation, however, cannot explain why even income generates more health gain for NHWs than AAs.^[6,7] Income generates less gain in terms of mental health, chronic disease, obesity, and oral health for AAs than NHWs.^[6,7]

Thus, there is a need to find other underlying mechanisms for low health returns of high SES for AAs. One mechanism is the increased exposure and vulnerability of high SES and male AAs to discrimination.^[14,15] Role of perceived discrimination is very important as a cause of health disparities due to SES as well as race/ethnicity.^[16-18]

Another explanation for the diminished health return of SES for AAs is that upward social mobility is costlier for them than NHWs.^[19-21] That means, upward social mobility increases social, psychological, and biological costs for AA men and women who are upwardly mobile in the social ladder.^[19-21] These may explain why high SES AAs experience increased depression, obesity, and worse health outcomes.^[4-10] This may also explain why high SES and male AAs are at a higher risk for depression.^[15] However, these processes are not mutually exclusive as discrimination may be involved in interindividual level^[14,15] and also at higher levels causing education not generating same employment, income, and purchasing power for AAs.^[13]

Finally, there is also a sociological explanation: structural racism minimizes the health gains from SES for AAs.^[17,18] Race (conceptualized here as a social rather than a biological construct) and skin color are proxies of population access to opportunities and treatment by the society.^[17,18] Given the existing racism, the associations between SES, psychological constructs, and health outcomes are not similar for minorities and marginalized groups compared to NHWs.^[11,22] AAs are at a systemic disadvantage compared to NHWs in translating their available resources to positive tangible outcomes.^[11,22]

Objectives

To better understand potential racial differences in the association between sense of mastery, SES, and upward social mobility in the US and to understand why high SES operates as a vulnerability factor for the mental health of high SES and male AAs,^[23] this study used a nationally representative sample of AAs and NHWs to explore the heterogeneity of the association between income and sense of mastery by race. In line with the minorities' diminished returns,^[11] we hypothesized that the income mastery link will be smaller for AAs compared to NHWs. The results are particularly relevant to the audience in the fields of public health, nursing, and public health nursing.

METHODS

Design, participants, and sampling

This study used a cross-sectional design. We used data of the National Survey of American Life (NSAL).^[24,25] The NSAL has recruited a household nationally representative sample of AAs and NHWs. The study has used a multistage probability sampling to recruit participants. The AA and NHW samples in the NSAL were selected from rural and urban areas.^[24,25] Participants were eligible if they were adults (at least 18 years or older), were living in the coterminous US (48 states), could complete a structured interview in English, and were not institutionalized in jails, prisons, nursing homes, and medical care settings.^[24,25]

In this study, analytical sample was 3570 AAs and 891 NHWs. AAs were Blacks who did not have any ancestral tie to any Caribbean countries.

Data collection

NSAL used fully structured interviews for collect data. Interviews were performed in the English language. While 82% of the interviews were performed face-to-face, the remaining 14% were performed through the telephone. The NSAL has used computer-assisted personal interviews (CAPI) to conduct face-to-face interviews. In CAPI, a computer assists the interviewer and interviewee with the process of the questions. CAPI is particularly helpful in the presence of considerable complexities due to many skip patterns. Interviews took 2 h and 20 min to complete. Response rates of AAs and NHWs were 71% and 68%, respectively. The study variables included race/ethnicity, gender, age, SES (household income), and general sense of mastery.

Household income

The major SES characteristic in this study was household income, which was measured using self-reported data during a structured interview. Household income was measured in 10,000 US Dollar and was a continuous measure (higher score indicating higher SES).

Sense of mastery

General sense of mastery was measured with the 12-item Pearlin Mastery scale. This scale measures the extent to which individuals feel that they have control over their life.^[26] Example items include the following: (1) "There is really no way I can solve some of the problems I have," (2) "I often feel helpless in dealing with the problems of life," and (3) "What happens in my life is often beyond my control." The item responses varied from strongly disagree (=1) to strongly agree (=4). All items were reverse coded, and an average score was calculated. A higher score reflects higher feelings of control/sense of mastery.

Ethical considerations

The University of Michigan Ethics Review Board approved the study protocol. The IRB approval number = # B03-00004038-R1. All participants signed written informed consent. All the participants were also financially compensated as a way for appreciation of their time. Data were kept confidential and participation in this study was completely voluntary.

Data analysis

To handle the complex survey design, we used Stata 15.0 (Stata Corp., College Station, TX, USA) to analyze the data. Standard errors were recalculated using Taylor series approximation.

Survey proportions and means were used to describe the sample. Independent sample Student's *t*-tests and Chi-square test were applied for comparison of all the study variables between NHWs and AAs. For multivariable data analysis, linear regression was used for multivariable analysis. In our regression models, sense of mastery was the independent variable, household income was the dependent variable, and age and gender were the covariates. Race was considered as an effect modifier. First, the association between mastery and income was estimated in the overall sample. Then, we estimated the same association across racial groups. Adjusted regression coefficients, confidence intervals (95% CI), and associated *P* values were reported.

RESULTS

This study included a total of 3570 AA and 891 NHW adults. Table 1 describes age, SES (household income), and sense of mastery overall and by race. Income was

higher in NHWs than AAs. Sense of mastery was higher in AAs than NHWs.

Table 2 shows two linear regressions in the overall sample with household income as the dependent variable; sense of mastery as the independent variable; and race, age, and gender as covariates. Based on Model 1, high sense of mastery was associated with high income above and beyond race, gender, and age. Model 2 revealed an interaction between race/ethnicity and sense of mastery on household income, suggesting a stronger positive association between income and sense of mastery for AAs than for NHWs.

Table 3 summarizes the results of two linear regression models that were estimated separately for AAs and NHWs. Model 3 and Model 4 showed that in AAs, but not NHWs, high sense of mastery was associated with high income above and beyond gender and age.

DISCUSSION

The current study explored how the link between sense of mastery and SES among US adults varies by race. Using a national sample of AA and NHW adults, two major results were found. First, overall, household income was positively associated with sense of mastery. Second, this association was observable for AAs but not NHWs.

These findings may help nurses and clinicians understand the complex links between race, SES, sense of mastery, and health. In a recent study, depression had a larger effect on financial distress in AAs than NHWs.^[27] Other research has shown that SES is associated with less health gain for AAs than NHWs,^[4-10] also called as minorities' diminished returns theory.^[11]

Table 1: Descriptive statistics in the pooled sample of employed African-Americans

	All (n=4461)		African-Americans (n=3570)		Whites (n=891)	
	Mean (SE)	95% CI	Mean (SE)	95% CI	Mean (SE)	95% CI
Age (years) ^a	43.43 (0.71)	42.00-44.87	41.90 (0.51)	40.86-42.93	44.84 (1.32)	42.03-47.66
Household income (1-5) ^a	4.18 (0.21)	3.76-4.60	3.63 (0.14)	3.36-3.91	4.69 (0.37)	3.91-5.47
Mastery ^a	26.68 (0.12)	26.44-26.93	27.19 (0.10)	26.98-27.41	26.21 (0.21)	25.77-26.65

^a*P*<0.05. Outcome: Household income. *n* = 4461. CI: Confidence interval, SE: Standard error

Table 2: Summary of linear regression models on the association between mastery and income in the pooled sample

	Model 1 (main effects)			Model 2 (M1 + interactions)		
	<i>b</i> (SE)	95% CI	<i>P</i>	<i>b</i> (SE)	95% CI	<i>P</i>
Race (African-Americans)	-1.13 (0.39)	-1.92--0.34	0.006	-3.29 (1.02)	-5.33--1.24	0.002
Gender (female)	-0.97 (0.17)	-1.32--0.62	0.000	-0.95 (0.17)	-1.30--0.60	0.001
Age	0.00 (0.01)	-0.02-0.01	0.616	0.00 (0.01)	-0.02-0.01	0.610
Mastery	0.10 (0.02)	0.06-0.14	0.000	0.06 (0.03)	-0.01-0.13	0.071
Mastery × race (African-Americans)	-	-	-	0.08 (0.04)	0.01-0.16	0.035
Intercept	2.76 (0.78)	1.20-4.33	0.001	3.75 (1.07)	1.60-5.91	0.001

Outcome: Household income. *n* = 4461. CI: Confidence interval, SE: Standard error

Table 3: Summary of linear regression models on the association between mastery and income in African-Americans and Whites

	<i>b</i> (SE)	95% CI	<i>P</i>	<i>b</i> (SE)	95% CI	<i>P</i>
	Model 3 African-Americans (<i>n</i> =3570)			Model 4 Whites (<i>n</i> =891)		
Gender (female)	-0.95 (0.15)	-1.26--0.64	0.001	-0.96 (0.31)	-1.62--0.31	0.007
Age	0.00 (0.01)	-0.01-0.02	0.471	-0.01 (0.01)	-0.04-0.02	0.439
Sense of mastery	0.14 (0.02)	0.11-0.18	0.001	0.06 (0.03)	-0.01-0.13	0.106
Intercept	0.06 (0.46)	-0.87-0.98	0.904	4.12 (1.29)	1.37-6.86	0.006

Outcome: Household Income. CI: Confidence interval, SE: Standard error

Income improved self-rated health status for NHWs but not AAs.^[6] Upward social mobility also had smaller association with stress for AAs than NHWs.^[28] There is also some research documenting additional mental health risk of high SES AA people or positive association between SES and perceived discrimination for AAs, particularly males.^[4,9] In a recent study, high SES was also associated with more perceived discrimination, particularly for AAs who were in frequent contact with NHWs.^[29]

In a number of studies, mastery and control over life have shown different associations with SES and also different correlations with health.^[30,31] For example, sense of mastery shows a larger effect on chronic disease and mortality for NHWs than AAs.^[30,31] The explanation for this finding is that limited opportunities for AAs in the society reduce their ability to leverage their assets and turn them into tangible outcomes.^[11] That is, because of multilevel racism,^[17,18] AAs with high mastery still become sick and die early; however, NHWs with high mastery stay healthy.

The results have some major implications for policy-making as well as practice in the field of public health and public health nursing. High SES and male AAs seem to be at a disadvantage compared to their female and lower SES counterparts regarding exposure to discrimination as well as sensitivity to discrimination.^[4,9] That means, high SES increases some levels of vulnerability to discrimination for AAs, particularly for males.^[23] John Henryism and goal-striving stress may have a role in this regard.^[11]

High sense of mastery is essential for mental health and well-being as poor sense of mastery predicts physical as well as psychiatric problems such as depression.^[3,30] Low sense of mastery also predicts illness, disability, and mortality.^[32] As a result, enhancing sense of mastery is a strategy to enhance community physical and mental health. However, such strategy may have a smaller effect on health for AAs than NHWs,^[30,31] unless structural racism is diminished.^[17]

While SES is protective overall,^[22] the magnitude and also the mechanism by which SES impacts health

differ across racial groups.^[4-7] The role of mastery in explaining the health effects of SES also varies by race and ethnicity.^[30,33] While structural racism exists, we cannot expect the same effects of SES and mastery for all populations,^[4-7,30,33] and high SES and high mastery may even operate as a vulnerability factors for some groups and some health outcomes.^[5,9]

Future research should go beyond race and explore whether SES and sense of mastery are differently linked across groups by the intersection of various social identities (e.g., race/ethnicity, sex/gender, SES/class, place, and sexual orientation). How SES is linked to sense of mastery may differ by race as upward social mobility differently stressful for social groups. The gain and loss due to SES are dependent on how easy or hard it is to be upwardly mobile, which depends on skin color, at least in countries with racism.

There are some limitations to this study. First, the design was cross-sectional design, which limits causal inferences. Second, the sample size of AAs and NHWs was not balanced, which may have resulted in different statistical power between race/ethnic groups. Third, this study did not control for the confounding effects of important variables such as occupation, employment, and also processes such as social support, race socialization, racial identity, and discrimination were not entered into this study. There is particularly a need for replication of the findings of the results of this study using longitudinal design, to test how change in SES and sense of mastery correlate over time. Despite the above limitations, the results reported here still extend our understanding on these topics as only a handful of studies have tested racial differences in the SES – sense of mastery association. Nationally, representative sample and large sample size are among strengths of this study.

CONCLUSIONS

Race may alter the income sense of mastery link, with the cross-sectional association being present for AAs but not NHWs. This finding may contribute to understand the complex and nonlinear associations between race, gender, class, place, and health. These

findings may also contribute to why AAs gain less health from SES and why male and high SES AAs are at an increased risk for poor mental health. Racial issues and their effects on the health of the minorities are important in community health nursing. Sense of mastery can influence the lifestyle decisions, and it is part of social determinants of health. The study findings have implications for public health nursing practice and research. Nurses should work together with other health professionals such as social workers to improve the sense of mastery in healthy lifestyle choices in all racial groups. This study can provide a new insight about sense of mastery and its relation with income and race for family nurse practitioners and the community health nurses.

Acknowledgment

The author would like to thank Hamid Helmi for his contribution to this paper.

Financial support and sponsorship

The NSAL is funded by the National Institute of Mental Health, with grant U01-MH57716 (PI: James S. Jackson). Shervin Assari is partly supported by the CMC grant 1H0CMS331621 (PI: M. Bazargan), National Institute on Minority Health and Health Disparities grant U54 MD007598 (PI: M. Bazargan), National Institute on Drug Abuse grant DA035811-05 (PI = M. Zimmerman), the National Institute of Child Health and Human Development (NICHD) grant D084526-03, and the National Cancer Institute grant CA201415-02 (Co-PI: R. Mistry).

Conflicts of interest

There are no conflicts of interest.

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