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ORIGINAL RESEARCH

Association of Subjective Social Status With Life's Simple 7s Cardiovascular Health Index Among Hispanic/Latino People: Results From the HCHS/SOL

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BACKGROUND: Evidence suggests that subjective (perceived) social status (SSS) may predict health outcomes more strongly than objective social status, but little is known about the relationship between SSS and cardiovascular health (CVH). This study focuses on this relationship among diverse Hispanic/Latino adults because while poor CVH profiles are prevalent in this population, immigration complicates attempts to measure their social status.

METHODS AND RESULTS: We analyzed baseline HCHS/SOL (Hispanic Community Health Study/Study of Latinos) data on 15 374 Hispanic/Latino adults aged 18 to 74 years in 2008 to 2011. SSS was assessed using the McArthur Scale, a 10-rung "social ladder." CVH was based on levels of 7 metrics defined by the American Heart Association. Linear and logistic regressions were used to examine cross-sectional associations of SSS with CVH (overall and single metrics) after adjusting for objective social status, demographic, and health factors. Less than half of the population (46%) had Ideal scores in ≥4 metrics of CVH. In multivariable-adjusted models, an increase in SSS was associated with a higher overall CVH score (β=0.04; 95% CI, 0.01–0.06) and greater likelihood of Ideal levels of body mass index, physical activity, and fasting blood glucose levels. Nativity and time in the United States modified the association between SSS and Ideal smoking.

CONCLUSIONS: Subjective measures of social status can enhance an understanding of CVH among Hispanic/Latino people. Future studies should explore the stability of SSS over time in comparison with objective social status and the mechanisms through which SSS may influence CVH.

Key Words: cardiovascular health ■ Hispanic/Latino ■ subjective social status

Subjective measures of social status (SSS) quantify how people perceive their position in the social hierarchy.[1] Self-perceived social inequalities can exacerbate psychological distress and negatively affect health beyond absolute socioeconomic standing.[2–5] A meta-analysis that pooled 9 studies of adults aged ≥18 years found that low SSS increases the odds of coronary artery disease, hypertension, diabetes mellitus, dyslipidemia, and obesity, with a modest attenuation after adjusting for objective measures of social status (OSS).[6] Although OSS explained some of the association between SSS and these outcomes, the association between SSS and dyslipidemia remained. However, while these studies disaggregated their findings by race, none of these included a Hispanic/Latino group.

Evidence suggests traditional OSS measures of socioeconomic disparities have a weaker connection

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CLINICAL PERSPECTIVE

What Is New?

- This study examines the relationship between subjective social status (SSS) and cardiovascular health among a diverse sample of Latino people.
- Evidence suggests that higher levels of SSS are associated with cardiovascular health.

What Are the Clinical Implications?

- SSS could prove to be a protective factor, especially at the population level, where small differences that compound over time matter.
- SSS could enhance an understanding of cardiovascular health among Hispanic/Latino people.
- When evaluating cardiovascular health, clinicians should consider patients' SSS along with other factors.

Nonstandard Abbreviations and Acronyms

CVH	cardiovascular health
HCHS/SOL	Hispanic Community Health Study/Study of Latinos
OSS	objective social status
PCS	Physical Component Summary

to health outcomes for the Hispanic/Latino population, especially for the foreign-born, than other ethnic/racial groups in the United States.[7,8] Evidence is particularly mixed with respect to the impact of education.[9,10] In one study, investigators found that education correlated with a number of health-related variables among non-Hispanic White people but not for people of Mexican origin in the United States.[10] They offered a number of migratory-related explanations, including the fact that higher socioeconomic status (SES) in Mexico is associated with more unhealthy behaviors, such as smoking. However, in a recent study that used data from Mexico and the United States, Beltrán-Sánchez and colleagues[7] found steeper educational gradients among people living in urban areas in Mexico compared with those living outside metropolitan regions in 5 of 6 biomarkers of metabolic syndrome. They argue that the flatter SES gradients observed in the United States may partially be explained by the presence of a sizeable immigrant population of rural Mexicans with low levels of education.

Markides and Eschbach[8] argue that the *meaning* of traditional OSS factors—low education, income, occupational status, and overall SES—for Hispanic/Latino subgroups merits further scrutiny. Factors such as discrimination related to citizenship status, country of origin, and level of acculturation may influence perceptions of economic standing such that measures used traditionally for Americans of European ancestry with multigenerational lineage in the United States do not apply to Hispanic/Latino people. Furthermore, traditional OSS measures may have little ability to assess the socioeconomic position of Hispanic/Latino adults who work in informal labor markets[11] or who have departed the workforce.[12] In any case, the existing divergences calls for a comprehensive approach to understanding cardiovascular health (CVH) in Hispanic/Latino people that surpasses conventional accounting by OSS.[13]

Emerging evidence supports an approach that focuses on how SSS influences CVH, given the connection between chronic stress and negative emotion and low SSS. A study based on small laboratory experiments with non-Hispanic White participants suggests that chronic stressors associated with low SSS may overactivate the hypothalamic-pituitary-adrenal axis and stimulate proinflammatory immune mediators, which seems to weaken cortisol responses.[14] Indeed, people with low SSS produce more proinflammatory cytokines such as interleukin-6 than those with high SSS.[15] Other laboratory-based studies have shown that increased stress-related allostatic load can, over time, suppress immune system functioning and lead to adverse cardiometabolic consequences.[16–19]

Research on the association between SSS and CVH on Hispanic/Latino people is particularly thin. Not only are poor CVH profiles prevalent in this population,[20,21] but immigration complicates attempts to measure their social status. For example, both Latino immigrants and migrants from Puerto Rico may lose income and social status when they begin residence in one of the 50 states, but they may also gain a kind of social mobility unattainable in their place of origin.[12] Migration creates multiple socioeconomic frames of reference that may influence behaviors and health outcomes that remain undetectable by OSS.[22] One study that employed several measures of SSS and subjective well-being found variation in the coefficients, indicating that immigrants maintain simultaneous points of reference in both the United States and their country of origin for SSS.[22] In another study, investigators observed that while prolonged stays in the United States have the undesirable effects (ie, perceived discrimination and diminished social networks), SSS increased with resident time, and this improvement was strongly associated with lower odds of depression and anxiety.[5]

The current study used data from the HCHS/SOL (Hispanic Community Health Study/Study of Latinos) to examine the relationship between SSS and CVH[23] in

adults from varying Hispanic/Latino backgrounds, independent of OSS. We expected SSS to be positively associated with CVH, such that adults with higher SSS will display more favorable CVH profiles than those with lower SSS. In addition, we tested whether nativity and, for immigrants, length of stay in the United States modifies associations between SSS and CVH. Given that immigrants might rely on multiple socioeconomic frames of reference, we expected to find a significant effect modification by nativity status such that foreign-born individuals would show a stronger association between SSS and CVH than US-born respondents, with the strongest association among those who migrated <10 years earlier.

METHODS

Study Population and Data Source

The current investigation uses data from the HCHS/SOL, a community-based prospective cohort study of 16 415 self-identified Hispanic/Latino adults aged 18 to 74 years, which has examined the prevalence of risk and protective factors of cardiovascular disease across Hispanic/Latino subgroups.[24,25] Details of the recruitment and study protocol for HCHS/SOL have been published previously.[24,25] Because of the sensitive nature of the data collected for this study, requests to access the data set from qualified researchers trained in human subject confidentiality protocols may be sent to HCHS/SOL at https://sites.cscc.unc.edu/hchs/. Participants were enrolled from randomly selected households across 4 US urban areas (Chicago, IL; Miami, FL; Bronx, NY; and San Diego, CA) with the baseline examination held from 2008 to 2011.[24] Briefly, the cohort was selected through a stratified 2-stage area probability sample design that provided diversity with regard to SES and national origin or background.[24] In the first stage, households were sampled within geographic clusters (ie, census blocks), with oversampling of clusters most likely to be Hispanic/Latino according to the proportion of the population found to be Hispanic/Latino in the 2000 decennial census. In the second stage, households with a Hispanic/Latino surname were selected at a higher rate than other addresses. The HCHS/SOL cohort consists of first- through third-generation immigrant (or, in the case of Puerto Rico, migrant) Hispanic/Latino adults from diverse backgrounds (Mexican, Puerto Rican, Dominican, Cuban, and Central and South American). Potential participants were excluded if they planned to move within 6 months, were on active-duty military service, or were physically unable to attend the baseline examination. The baseline clinical examination included comprehensive biological, behavioral, and sociodemographic assessments.[22] The institutional review boards at the data coordinating center and at each field center approved this study, and all subjects gave written consent.

A total of 16 415 individuals participated in the baseline assessment. The analytic sample was limited to participants with complete data for the main variables of interest: (1) subjective social status, (2) metrics required to compute a cardiovascular health score (Life's Simple 7), and (3) preselected covariates. Although none were missing data on Life's Simple 7, data from 1041 (6.8%) individuals were excluded because of missing data on selected variables (154 on SSS, 5 on OSS, and 882 on additional variables). This resulted in a final analytic sample of 15 374 Hispanic/Latino adults. Participants excluded from the analysis did not differ from the included sample on SSS levels, language primarily spoken, sex, nativity/US length of stay, or discrimination experiences. However, those excluded tended to have lower OSS (less educated, lower income, less likely to be employed) and were older. They also had worse CVH composite scores but showed no significant differences in individual CVH indicators. The final sample with complete data is restricted to 15 374 individuals.

Outcome Variables

Cardiovascular Health: Life's Simple 7

AHA definitions[23] were used to operationalize CVH metrics: diet, physical activity, smoking status, body mass index (BMI), cholesterol, blood pressure, and fasting glucose.[20] Detailed information on the scoring of CVH has been reported previously.[20] Each indicator was coded categorically as Poor (0 points), Intermediate (1 point), or Ideal (2 points). A composite CVH score was calculated by summing across the 7 indicators (scores range from 0 to 14; higher scores indicate better CVH).[22] Finally, a dichotomous Life's Simple 7 CVH cut point (≥4 Ideal indicators) was generated, which has been associated with cardioprotection and reduced 20-year incidence of coronary heart disease.[26–29] These variables have been used in previous studies of HCHS/SOL.[20]

Protocols to measure CVH indicators have been described elsewhere.[25] Briefly, 4 healthy lifestyle factors and 3 biomarkers were used. Former and current smoking status was self-reported. Two 24-hour dietary recalls were used to evaluate dietary intake across 5 food categories (ie, fruits/vegetables, fish, grains, sweetened beverages, and sodium). Physical activity was obtained through a modified version of the Global Physical Activity Questionnaire, which asks for self-reported activities during work, transport, and leisure.[30,31] BMI, measured as kilograms per meter squared, was calculated from staff-ascertained measures of weight (nearest 0.1 kg) and height (nearest

centimeter). Biomarkers collected were total cholesterol, fasting blood glucose, and blood pressure. After a 12-hour fast, blood was drawn to obtain lipid profiles and fasting glucose values. Total cholesterol was measured using a cholesterol oxidase enzymatic method; fasting blood glucose was obtained by means of the hexokinase enzymatic method (Roche Diagnostics, Indianapolis, IN). Systolic and diastolic blood pressure were attained by averaging 3 readings taken with participants in a seated position using an automatic sphygmomanometer. In addition to the measurements of fasting glucose, cholesterol, and blood pressure, we considered self-reported medication use as reported in the medical history questionnaire to identify those with preexisting conditions.

Independent Variable

Subjective Social Status

The MacArthur Scale of Subjective Social Status[32] captures self-perceived socioeconomic standing and pictorially depicts a 10-rung "social ladder" on which respondents are asked to subjectively rank their social standing using the general US population as a reference group (scores range from 1 to 10; higher scores indicate higher SSS). The participant is asked: "At the top of the ladder are the people who are the best off—those who have the most money, the most education, and the most respected jobs. At the bottom are the people who are the worst off—who have the least money, least education, and the least respected jobs or no jobs." Participants verbally indicate the rung (from 1 to 10) that best depicts their current social standing (see Figure). In addition to treating SSS as a continuous measure, tertiles were created based on the distribution of scores to test for possible threshold effects (as clinically based cutoffs are unavailable). The MacArthur Scale has undergone previous psychometric testing with documented adequacy for validity and reliability in English[32–34] and has been translated into Spanish.

Potential Confounders

Sociodemographic Covariates

Covariates included baseline age (in years), sex (male or female), Hispanic/Latino background, insurance status (yes/no), nativity (born in one of the 50 US states or born in a US territory or foreign country), length of stay in the United States, marital status (single, married/living with a partner, or separated/divorced/widowed), and study center. Nativity was combined with length of stay, and 3 groups were generated: born in the United States (including US territories), foreign-born immigrated <10 years ago, and foreign-born immigrated ≥10 years before. The 10-year cutoff aligns with the definition of acculturation, in which lower acculturation was demarcated as residing in the United States for <10 years and higher acculturation as living in the United States for ≥10 years.[35,36] Puerto Rico was the only US territory represented in the sample. It was treated as part of the United States because Puerto Ricans have automatic citizenship status when they enter the US mainland. We also included a question of perceived discrimination: "How often do people treat you unfairly because you are Hispanic or Latino?" (never or sometimes/always).

Objective Social Status

Three measures were used: (1) educational attainment (less than high school, high school graduate/general education degree, greater than high school); (2) annual income (<$20 000, $20 000 to $50 000, >$50 000, not reported); and (3) employment status (employed [full or part time] or unemployed).

Physical Health

We used the Physical Component Summary (PCS) of the Short-Form 12-Item Health Survey.[37] Because the PCS omits information specific to coronary disease, we included a question that asked participants to disclose the presence of prevalent coronary heart disease (yes or no).

Mental Health

The Center for Epidemiologic Studies Depression Scale was used to capture mental health. The 10-item Center for Epidemiologic Studies Depression Scale measures depressive symptoms with possible scores in the range of 0 to 30, and scores ≥10 are indicative of "significant" symptomatology.[38]

Analytic Procedures

All analyses were weighted to account for selection probability and the complex sampling design, except for the correlation analyses. Analyses were performed using Statistical Analysis Software version 9.2 (SAS Institute, Cary, NC) and STATA SE 14.0 (StataCorp LP, College Station, TX). Descriptive statistics such as means, SDs, and percentages were used to summarize and compare characteristics for the overall sample by tertiles of SSS levels. Chi-squared tests were used to compare categorical variables, and *t* tests were used for continuous variables.

To assess the relationship between SSS and CVH, we first calculated prevalence estimates for counts of Ideal CVH indicators by tertiles of SSS and tested whether Ideal CVH scores were similarly distributed across SSS tertiles. Finally, multivariable regression models were used to assess the relationship of SSS

Figure. **The MacArthur Scale of subjective social status.**

with CVH, independent of OSS. Linear regression models were conducted for the overall CVH score and logistic regression models for the overall CVH score based on the ≥4 Ideal criterion and for the 2-level category for each of the CVH metric items.

The modeling procedures to test the relationship between SSS and CVH included 4 models. In model 1, SSS was adjusted for basic demographic variables—age, sex, Hispanic/Latino background, and study site. Model 2 adjusted for all covariates in model 1 and

added 3 OSS measures (ie, educational attainment, annual income, and employment status). Model 3 included all covariates in model 2 plus nativity/US length of stay, insurance status, and perceived discrimination. These variables address social factors that have a bearing on a person's sense of stability and receptiveness in the home context. Model 4 adjusted for all covariates included in model 3 and added variables that influence long-term health—prevalent coronary heart disease, mental health (Center for Epidemiologic Studies Depression Scale–continuous), and self-perceived health status (Short-Form 12-Item Health Survey PCS).

An interaction term for nativity/US length of stay and SSS was added to the models to examine whether the association between SSS and cardiovascular health differs by either of these factors. A significant regression coefficient for this interaction term at the 0.05 significance level would suggest that nativity/US length of stay modifies the relationship between SSS and CVH.

Although our sample allows for the inclusion of a number of Hispanic/Latino subgroups, the size of the Mexican population in this country and the unique political relationship of Puerto Rico with the United States, which confers automatic citizenship status to its migrants, creates the need for sensitivity tests to ensure that these groups are not driving the results. Sensitivity analyses were performed to assess whether the results were robust when considering subgroups of Hispanics/Latinos. In the first set of analyses, the sample was restricted to Mexicans only. Next, the analysis used the entire sample but excluded Puerto Ricans to test whether their inclusion as a US-born group affected the results.

RESULTS

Participant Characteristics

Baseline demographic, socioeconomic, and health characteristics are summarized in Table 1. Average SSS was 4.4 (SE, 0.0), with about 60% reporting having a high school education or lower. About 42% lived in households with annual income below $20 000, and almost half (49%) were not employed. There were statistical differences in educational level, income, and employment by SSS levels ($P<0.001$). Across individual metrics, Ideal status was achieved at a rate of 1.6% for healthy eating, 23.3% for BMI, 49.8% for blood pressure, 53.5% for total cholesterol, 66.7% for fasting glucose, 66.8% for physical activity, and 76.3% for smoking. Less than half (46%) of the sample had ≥4 Ideal scores across all 7 metrics.

Prevalence data for Ideal CVH health and metrics by SSS are shown in Table 2. Prevalence of all CVH indicators differed across SSS levels ($P<0.05$), save for prevalence of healthy diet. Prevalence data for Ideal CVH health and metrics by OSS indicators have been published elsewhere.[20] Briefly, that study found significant variations in CVH criterion prevalence by household income and education. Those who reported higher incomes were 15% more likely to meet favorable CVH criterion than those with lower income levels. Education followed a similar trend; those who reported college or more were 19% more likely to meet CVH criterion than high school noncompleters.

Association of SSS and CVH

Table 3 displays the parameter estimates and odds ratios for the association between SSS and CVH scores and metrics across 4 models. In model 1, each unit increase in SSS was positively associated with overall CVH score and Ideal levels of smoking, BMI, physical activity, and fasting blood glucose levels ($P<0.01$). Once adjusted for OSS (model 2), higher SSS remained positively associated with overall CVH score, BMI, and fasting glucose ($P<0.05$). These associations remained in model 3 after further adjustment for nativity/length of stay, marital status, insurance status, and perceived discrimination. SSS was associated with increases in overall CVH score (β=0.04; 95% CI, 0.01–0.06; $P<0.01$) and with higher odds of having an Ideal BMI (odds ratio [OR], 1.04; 95% CI, 1.01–1.07, $P<0.05$), Ideal physical activity (OR, 1.03; 95% CI, 1.0–1.07; $P<0.05$), and Ideal fasting glucose (OR, 1.04; 95% CI, 1.01–1.07; $P<0.05$). However, when analyses were further adjusted for mental and physical health indicators (model 4), the association between SSS and overall CVH became nonsignificant. In model 4, higher SSS remained positively associated with BMI (OR, 1.04; 95% CI, 1.00–1.07; $P<0.05$) and fasting glucose (OR, 1.03; 95% CI, 1.00–1.07; $P<0.05$).

Sensitivity analyses focused on those of Mexican descent and excluding Puerto Ricans yielded similar results to that of pooled analyses (results not shown). For Mexicans, each unit increase of SSS was associated with better overall CVH (β=0.05; 95% CI, 0.01–0.10; $P<0.05$). In addition, increases in SSS were associated with higher odds of having Ideal BMI (OR, 1.08; 95% CI, 1.02–1.13; $P<0.01$), Ideal physical activity (OR, 1.06; 95% CI, 1.01–1.12; $P<0.05$), and Ideal fasting glucose (OR, 1.09, 95% CI, 1.04–1.16, $P<0.01$). When we excluded Puerto Ricans from the analysis, we found an association between SSS and overall CVH (β=0.04; 95% CI, 0.01–0.06; $P<0.01$), Ideal BMI (OR, 1.05; 95% CI, 1.01–1.09; $P<0.05$) and Ideal fasting glucose (OR, 1.04; 95% CI, 1.01–1.08; $P<0.05$), much like those of the pooled analyses.

Table 1. Characteristics of the HCHS/SOL Target Population by SSS Category

Variables	All Mean or % (SE)	SSS			*P* Value
		Low (1–3) Mean or % (SE)	Moderate (4–7) Mean or % (SE)	High (8–10) Mean or % (SE)	
N	15 374	5104	9509	761	
SSS	4.38 (0.03)	2.31 (0.02)	5.02 (0.02)	8.58 (0.04)	<0.001
Education					
Less than HS	32.2 (0.7)	40.8 (1.1)	28.8 (0.8)	22.3 (2.1)	<0.001
HS	28.4 (0.6)	27.8 (1.0)	29.2 (0.7)	21.1 (2.1)	
More than HS	39.4 (0.8)	31.4 (1.0)	41.9 (1.0)	56.7 (2.8)	
Income, USD					
<20 000	41.8 (0.9)	57.9 (1.1)	35.4 (1.0)	24.9 (2.1)	<0.001
20 000–50 000	37.3 (0.7)	27.3 (1.0)	42.3 (0.8)	34.6 (2.7)	
>50 000	12.0 (0.8)	3.8 (0.5)	14.3 (0.9)	32.1 (3.2)	
Not reported	8.9 (0.4)	11.0 (0.7)	7.95 (0.4)	8.40 (1.5)	
Employment status					
Employed	51.1 (0.7)	42.8 (1.0)	54.5 (0.9)	59.7 (2.4)	
Age, y	41.0 (0.3)	43.7 (0.4)	39.7 (0.3)	41.1 (0.8)	
<50	70.2 (0.7)	63.7 (1.1)	73.3 (0.7)	70.0 (2.5)	<0.001
50–60	17.5 (0.5)	20.7 (0.8)	16.0 (0.6)	16.6 (1.7)	
>60	12.4 (0.5)	15.6 (0.8)	10.7 (0.5)	13.5 (1.9)	
Sex					
Male	48.0 (0.6)	47.6 (0.9)	48.3 (0.7)	47.2 (2.7)	
Female	52.0 (0.6)	52.5 (0.9)	51.7 (0.7)	52.8 (2.7)	
Hispanic background					
Mexican	37.5 (1.7)	32.7 (1.9)	40.3 (1.7)	40.8 (3.8)	<0.001
Cuban	20.0 (1.7)	23.5 (2.2)	18.7 (1.6)	15.4 (2.2)	
Puerto Rican	15.9 (0.8)	15.9 (1.0)	15.7 (0.8)	17.8 (2.0)	
Dominican	9.7 (0.7)	13.0 (1.1)	8.3 (0.7)	7.7 (1.5)	
Central American	7.4 (0.6)	8.1 (0.7)	7.3 (0.6)	5.5 (1.0)	
South American	4.9 (0.3)	3.7 (0.4)	5.3 (0.4)	7.0 (1.4)	
Other	4.1 (0.3)	3.2 (0.4)	4.4 (0.4)	5.9 (1.1)	
Nativity/length of stay					
US born	23.0 (0.8)	18.1 (1.1)	25.1 (0.9)	25.9 (2.1)	<0.001
Foreign born <10 y	27.6 (1.0)	30.7 (1.4)	26.6 (1.02)	21.0 (2.9)	
Foreign born ≥10 y	49.4 (0.8)	51.1 (1.2)	48.25 (0.9)	53.0 (2.9)	
Site					
Bronx	27.8 (1.5)	34.2 (2.0)	25.0 (1.5)	25.0 (2.7)	<0.001
Chicago	16.2 (1.0)	13.1 (1.0)	17.4 (1.1)	20.0 (2.4)	
Miami	29.3 (2.2)	31.6 (2.6)	28.5 (2.1)	25.9 (3.1)	<0.001
San Diego	26.6 (1.8)	21.1 (1.7)	29.1 (2.0)	29.2 (4.2)	
Marital status					
Single	34.4 (0.7)	33.7 (1.1)	34.62 (0.8)	35.9 (2.5)	<0.001
Married/living with a partner	49.2 (0.8)	46.2 (1.1)	50.58 (0.9)	49.7 (2.6)	
Separated/divorced/widowed	16.4 (0.5)	20.1 (0.8)	14.80 (0.6)	14.4 (1.7)	
Health insurance					
Yes	50.2 (0.9)	48.4 (1.3)	50.25 (1.1)	60.47 (2.7)	<0.001

(*Continued*)

Table 1. Continued

Variables	All Mean or % (SE)	SSS			*P* Value
		Low (1–3) Mean or % (SE)	Moderate (4–7) Mean or % (SE)	High (8–10) Mean or % (SE)	
Perceived discrimination					
Never	50.9 (0.8)	49.2 (1.2)	51.4 (0.9)	54.8 (2.4)	0.057
Some/often/always	49.1 (0.8)	50.8 (1.2)	48.6 (0.9)	45.2 (2.4)	
SF-12 Health Survey					
Physical (PCS)	50.0 (0.1)	48.4 (0.3)	50.7 (0.2)	51.2 (0.5)	<0.001
Prevalent CHD					
Yes	4.6 (0.3)	5.5 (0.4)	4.4 (0.4)	4.1 (0.9)	0.162
CES-D (continuous)	7.0 (0.1)	8.1 (0.2)	6.6 (0.09)	5.5 (0.2)	<0.001

CES-D indicates Center for Epidemiologic Studies Depression Scale; CHD, coronary heart disease; HCHS/SOL, Hispanic Community Health Study/Study of Latinos; HS, high school; PCS, Physical Component Summary; SF-12, Short-Form 12-Item Health Survey; SSS, subjective social status; and USD, US dollars.

Effect Modification by Nativity/Length of Stay

Results indicate that the positive association of SSS with CVH was only statistically significant for US-born and foreign-born people living in the United States for ≥10 years ($P<0.05$; results not shown), but it was not significant for foreign-born people living in the United States for <10 years. This pattern remained in models 2 to 4, but estimates were no longer statistically significant in model 4 for foreign-born living in the United States for ≥10 years. Next, models examined whether nativity/length of stay modified the association between SSS and CVH measures. Results indicate that nativity/length of stay modified the association between SSS and Ideal smoking ($P<0.05$; results not shown). The interaction terms for SSS and foreign-born people with <10 years were negative, indicating that shorter length of stay reduces the odds of having Ideal smoking. The interaction terms for SSS and foreign-born people with ≥10 years' residence were not statistically significant.

DISCUSSION

This study contributes to the growing evidence that subjective measures of social status can enhance an understanding of CVH by examining data from Hispanic/Latino people. Our results indicate that higher SSS is associated with higher odds of having Ideal CVH indicators, which is consistent with a meta-analysis that found lower SSS to be associated with increased odds of cardiovascular disease among other ethnic groups (not including Hispanic/Latino people).[6] Our findings also resonate with results of Perreira et al[5] that showed SSS improved with length of stay in the United States and that higher SSS was associated with lower odds of mental health problems.

Prior studies that examined SSS with Hispanic/Latino immigrants and their US-born counterparts have relied on self-reported measures of physical health. In addition, most studies that examined SSS with Hispanic/Latino immigrants and their US-born counterparts have focused on a singular Hispanic/Latino heritage group (usually Mexican) in one geographic location[39,40] (studies that use data from the National Latino and Asian American Study[12,41] are the exception). By using HCHS/SOL data, we were able to examine a diverse and large sample of Hispanic/Latino people and to discern the distribution of SSS and its associations with empirical measures of cardiovascular health. The data offered diversity of heritage backgrounds, geographic residency, and SES that reflects the overall demographics one would expect in a national sample[42] (with the exception of age).[43]

In addition, our use of the Life's Simple 7, which includes objective and subjective data, enabled us to examine a more complete profile of overall CVH and its constituent parts. For example, we examined the associations for Mexicans only and for the entire sample excluding Puerto Ricans (analyses not shown). We found that SSS was consistently associated with Ideal BMI and Ideal fasting glucose. When we excluded Puerto Ricans from the analysis, to test whether including this group as US born would alter the results, we found an association between SSS and overall CVH, similar to when focusing exclusively on Mexicans. Analyses restricted to Mexicans only also found a positive association between SSS with Ideal physical activity and overall CVH. For Mexicans, who are at a higher risk of metabolic conditions, the fact that higher SSS has such an effect on CVH and physical activity highlights the need for targeted policy interventions. We speculate that given the lower levels of education and income as well the higher

Table 2. Prevalence Estimates of Ideal CVH by SSS and OSS Indicators (N=15 374)

	≥4 Ideals	Smoking	BMI	Physical Activity	Healthy Diet	Total Cholesterol	Blood Pressure	Fasting Glucose
	% (SE)	% (SE)	% (SE)	% (SE)	% (SE)	% (SE)	% (SE)	% (SE)
Total	45.97 (0.67)	76.3 (0.6)	23.3 (0.5)	66.8 (0.7)	1.6 (0.2)	53.5 (0.6)	49.8 (0.7)	66.7 (0.7)
SSS tertiles								
Low (1–3)	39.73 (1.09)	73.5 (0.9)	20.1 (0.8)	62.6 (1.1)	1.9 (0.3)	51.5 (1.0)	44.7 (1.2)	61.2 (1.1)
Moderate (4–7)	48.92 (0.77)	77.5 (0.7)	24.6 (0.7)	68.5 (0.7)	1.4 (0.2)	54.8 (0.8)	52.4 (0.9)	69.2 (0.7)
High (8–10)	46.92 (2.33)	79.6 (2.0)	25.1 (2.3)	70.8 (2.4)	2.4 (0.9)	49.8 (2.4)	47.4 (2.5)	69.2 (2.4)
P value*	<0.001	<0.001	<0.001	<0.001	0.16	0.01	<0.001	<0.001
Education								
Less than HS	37.76 (1.05)	73.58 (0.99)	19.69 (0.86)	62.17 (1.04)	1.61 (0.22)	49.78 (1.04)	43.30 (1.19)	58.44 (1.06)
HS	50.44 (1.19)	74.78 (1.07)	24.09 (1.00)	69.61 (1.11)	1.45 (0.28)	59.60 (1.15)	53.68 (1.16)	70.16 (1.13)
More than HS	49.48 (1.05)	79.71 (0.81)	25.57 (0.89)	68.59 (0.99)	1.71 (0.26)	52.23 (1.07)	52.22 (1.01)	71.00 (0.98)
P value*	<0.001	<0.001	<0.001	<0.001	0.775	<0.001	<0.001	<0.001
Income, USD								
<20 000	42.23 (0.98)	73.37 (0.89)	21.36 (0.74)	63.32 (0.89)	1.58 (0.23)	51.94 (0.94)	46.48 (1.01)	64.73 (0.87)
20 000–50 000	48.26 (0.99)	77.59 (0.86)	23.49 (0.86)	70.66 (0.94)	1.69 (0.20)	55.43 (1.02)	52.62 (1.06)	66.91 (0.97)
>50 000	50.23 (1.92)	83.36 (1.35)	23.25 (1.51)	72.42 (1.67)	2.19 (0.62)	49.58 (2.07)	51.12 (1.94)	70.62 (1.98)
P value*	<0.001	<0.001	0.129	<0.001	0.512	0.01	<0.001	0.009
Employment status								
Employed full- or part-time	50.84 (0.85)	78.60 (0.78)	23.55 (0.72)	74.18 (0.75)	1.37 (0.16)	54.94 (0.86)	52.99 (0.92)	70.07 (0.79)
Not employed	40.89 (0.95)	73.97 (0.84)	22.95 (0.78)	59.13 (0.90)	1.85 (0.25)	52.07 (0.86)	46.38 (1.07)	63.20 (1.01)
P value*	<0.001	<0.001	0.544	<0.001	0.084	0.014	<0.001	<0.001

BMI indicates body mass index; CVH, cardiovascular health; HS, high school; OSS, objective markers of social status; SE, standard error; SSS, subjective social status; and USD, US dollars.
*Chi-square test was used.

Table 3. Parameter Estimates and 95%CIs for the Association Between 1-Unit Increase in SSS and 1-Unit Increase in OSS (Education, Income, and Employment Status) and CVH Scores and Metrics (N=15 374)

	CVH	≥4 Ideals	Smoking	BMI	Physical Activity	Healthy Diet	Total Cholesterol	Blood Pressure	Fasting Glucose
	Beta (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Model 1									
SSS	0.07 (0.04 to 0.10)	1.03 (1.00 to 1.06)	1.07 (1.04 to 1.11)	1.04 (1.01 to 1.08)	1.05 (1.02 to 1.08)	0.97 (0.87 to 1.09)	0.98 (0.95 to 1.00)	1.00 (0.97 to 1.04)	1.06 (1.02 to 1.09)
P value	<0.001	0.050	<0.001	0.009	0.002	0.657	0.089	0.828	<0.001
Model 2									
SSS	0.04 (0.01 to 0.07)	1.01 (0.98 to 1.04)	1.03 (0.99 to 1.06)	1.04 (1.01 to 1.08)	1.03 (1.00 to 1.06)	0.95 (0.85 to 1.06)	0.99 (0.96 to 1.02)	0.99 (0.95 to 1.02)	1.04 (1.01 to 1.07)
P value	0.003	0.588	0.130	0.009	0.074	0.367	0.513	0.464	0.023
Education (ref: less than HS)									
HS	0.22 (0.11 to 0.33)	1.17 (1.02 to 1.34)	1.20 (1.03 to 1.40)	1.00 (0.86 to 1.17)	1.18 (1.04 to 1.35)	1.24 (0.75 to 2.04)	1.03 (0.90 to 1.18)	1.11 (0.97 to 1.26)	1.17 (1.02 to 1.34)
P value	<0.001	0.027	0.019	0.977	0.010	0.404	0.647	0.125	0.023
More than HS	0.39 (0.27 to 0.50)	1.34 (1.17 to 1.53)	1.41 (1.21 to 1.65)	1.18 (1.01 to 1.38)	1.22 (1.07 to 1.39)	1.28 (0.90 to 1.83)	0.92 (0.80 to 1.07)	1.26 (1.11 to 1.43)	1.38 (1.20 to 1.60)
P value	<0.001	<0.001	<0.001	0.034	0.004	0.173	0.278	<0.001	<0.001
Income, USD (Ref: <20 000)									
20 000–50 000	0.13 (0.03 to 0.23)	1.04 (0.92 to 1.17)	1.22 (1.06 to 1.39)	1.05 (0.93 to 1.19)	1.11 (0.99 to 1.24)	1.05 (0.71 to 1.55)	1.05 (0.93 to 1.19)	1.12 (0.98 to 1.28)	0.95 (0.84 to 1.08)
P value	0.014	0.582	0.004	0.444	0.083	0.814	0.392	0.097	0.461
>50 000	0.26 (0.09 to 0.44)	1.12 (0.91 to 1.38)	1.77 (1.41 to 2.22)	1.00 (0.82 to 1.22)	1.02 (0.83 to 1.25)	1.34 (0.70 to 2.55)	0.81 (0.67 to 0.99)	1.06 (0.85 to 1.34)	1.15 (0.92 to 1.44)
P value	0.003	0.269	<0.001	0.997	0.865	0.371	0.042	0.597	0.232
Not reported	0.22 (0.08 to 0.37)	1.23 (1.01 to 1.51)	1.20 (0.98 to 1.45)	1.54 (1.29 to 1.84)	0.95 (0.80 to 1.13)	0.62 (0.22 to 1.73)	1.13 (0.94 to 1.37)	1.09 (0.90 to 1.33)	1.21 (1.01 to 1.46)
P value	0.003	0.044	0.072	<0.001	0.591	0.363	0.189	0.389	0.044
Employment status (Ref: employed)									
Not employed	−0.30 (−0.39 to −0.20)	0.77 (0.68 to 0.87)	0.81 (0.71 to 0.93)	1.03 (0.92 to 1.16)	0.64 (0.58 to 0.71)	1.39 (0.93 to 2.09)	1.07 (0.96 to 1.19)	0.90 (0.79 to 1.03)	0.84 (0.74 to 0.95)
P value	<0.001	<0.001	0.002	0.601	<0.001	0.111	0.213	0.134	0.006
Model 3									
SSS	0.04 (0.01 to 0.06)	1.01 (0.98 to 1.04)	1.02 (0.99 to 1.06)	1.04 (1.01 to 1.07)	1.03 (1.00 to 1.07)	0.95 (0.85 to 1.06)	0.99 (0.96 to 1.02)	0.99 (0.95 to 1.02)	1.04 (1.01 to 1.07)
P value	0.006	0.658	0.267	0.016	0.041	0.318	0.455	0.485	0.021

(*Continued*)

Table 3. Continued

	CVH	≥4 Ideals	Smoking	BMI	Physical Activity	Healthy Diet	Total Cholesterol	Blood Pressure	Fasting Glucose
	Beta (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Education (Ref: <high school)									
HS	0.23 (0.12 to 0.33)	1.01 (0.98 to 1.04)	1.23 (1.05 to 1.43)	1.00 (0.86 to 1.17)	1.18 (1.03 to 1.34)	1.28 (0.77 to 2.12)	1.03 (0.90 to 1.18)	1.11 (0.97 to 1.26)	1.17 (1.02 to 1.34)
P value	<0.001	0.616	0.009	0.964	0.015	0.336	0.689	0.117	0.023
More than HS	0.40 (0.29 to 0.52)	1.17 (1.02 to 1.35)	1.47 (1.25 to 1.72)	1.18 (1.01 to 1.38)	1.20 (1.05 to 1.37)	1.34 (0.94 to 1.92)	0.91 (0.79 to 1.05)	1.27 (1.12 to 1.45)	1.39 (1.20 to 1.60)
P value	<0.001	0.024	<0.001	0.042	0.009	0.108	0.186	<0.001	<0.001
Income, USD (Ref: <20 000)									
20 000–50 000	0.13 (0.03 to 0.23)	1.04 (0.92 to 1.17)	1.21 (1.05 to 1.38)	1.10 (0.97 to 1.25)	1.14 (1.01 to 1.28)	1.07 (0.73 to 1.57)	1.06 (0.93 to 1.19)	1.09 (0.95 to 1.25)	0.96 (0.85 to 1.10)
P value	0.009	0.558	0.007	0.142	0.034	0.737	0.377	0.212	0.594
>50 000	0.27 (0.11 to 0.44)	1.12 (0.91 to 1.37)	1.73 (1.36 to 2.21)	1.04 (0.85 to 1.27)	1.07 (0.87 to 1.31)	1.41 (0.72 to 2.76)	0.78 (0.64 to 0.96)	1.04 (0.82 to 1.31)	1.18 (0.94 to 1.47)
P value	0.001	0.297	<0.001	0.713	0.544	0.309	0.017	0.751	0.153
Not reported	0.23 (0.08 to 0.38)	1.22 (1.00 to 1.50)	1.19 (0.98 to 1.45)	1.49 (1.24 to 1.79)	0.97 (0.82 to 1.16)	0.62 (0.22 to 1.73)	1.12 (0.93 to 1.36)	1.11 (0.91 to 1.36)	1.21 (1.01 to 1.46)
P value	0.003	0.053	0.073	<0.001	0.743	0.360	0.240	0.294	0.040
Employment status (Ref: employed)									
Not employed	−0.28 (−0.38 to −0.19)	0.77 (0.69 to 0.87)	0.83 (0.73 to 0.95)	1.02 (0.91 to 1.15)	0.64 (0.58 to 0.71)	1.44 (0.95 to 2.19)	1.05 (0.94 to 1.17)	0.92 (0.80 to 1.05)	0.84 (0.74 to 0.96)
P value	<0.001	<0.001	0.005	0.715	<0.001	0.084	0.368	0.191	0.008
Model 4									
SSS	0.02 (−0.00 to 0.05)	1.00 (0.97 to 1.03)	1.01 (0.97 to 1.04)	1.04 (1.00 to 1.07)	1.03 (0.99 to 1.06)	0.94 (0.84 to 1.05)	0.99 (0.96 to 1.02)	0.98 (0.95 to 1.02)	1.03 (1.00 to 1.07)
P value	0.078	0.963	0.619	0.032	0.100	0.250	0.400	0.379	0.037
Education (Ref: <high school)									
HS	0.18 (0.07 to 0.29)	1.00 (0.96 to 1.03)	1.19 (1.02 to 1.40)	0.98 (0.85 to 1.15)	1.15 (1.01 to 1.32)	1.25 (0.76 to 2.07)	1.02 (0.89 to 1.17)	1.09 (0.96 to 1.24)	1.15 (1.00 to 1.32)
P value	<0.001	0.782	0.025	0.845	0.033	0.375	0.752	0.181	0.045
More than HS	0.33 (0.21 to 0.44)	1.14 (0.99 to 1.31)	1.40 (1.18 to 1.65)	1.14 (0.97 to 1.33)	1.16 (1.01 to 1.33)	1.29 (0.90 to 1.84)	0.90 (0.78 to 1.04)	1.24 (1.09 to 1.41)	1.35 (1.17 to 1.56)
P value	<0.001	0.069	<0.001	0.112	0.031	0.163	0.144	<0.001	<0.001
Income, USD (Ref: <20 000)									
20 000–50 000	0.05 (−0.05 to 0.15)	0.98 (0.86 to 1.11)	1.14 (0.99 to 1.30)	1.06 (0.94 to 1.21)	1.09 (0.97 to 1.23)	1.02 (0.69 to 1.49)	1.04 (0.92 to 1.18)	1.07 (0.93 to 1.23)	0.93 (0.81 to 1.06)

(*Continued*)

Table 3. Continued

	CVH	≥4 Ideals	Smoking	BMI	Physical Activity	Healthy Diet	Total Cholesterol	Blood Pressure	Fasting Glucose
	Beta (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
P value	0.310	0.722	0.072	0.352	0.144	0.937	0.507	0.354	0.278
>50 000	0.13 (−0.03 to 0.29)	1.00 (0.82 to 1.24)	1.61 (1.26 to 2.06)	0.97 (0.79 to 1.19)	0.99 (0.80 to 1.22)	1.28 (0.65 to 2.53)	0.77 (0.62 to 0.94)	0.99 (0.78 to 1.26)	1.10 (0.89 to 1.37)
P value	0.119	0.963	<0.001	0.799	0.918	0.472	0.011	0.957	0.387
Not reported	0.16 (0.01 to 0.31)	1.16 (0.94 to 1.43)	1.14 (0.93 to 1.38)	1.44 (1.20 to 1.74)	0.94 (0.79 to 1.12)	0.60 (0.21 to 1.68)	1.11 (0.91 to 1.34)	1.10 (0.90 to 1.34)	1.18 (0.98 to 1.42)
P value	0.032	0.156	0.204	<0.001	0.472	0.328	0.299	0.351	0.088
Employment status (Ref: employed)									
Not employed	−0.18 (−0.28 to −0.09)	0.83 (0.73 to 0.93)	0.88 (0.77 to 1.01)	1.07 (0.95 to 1.20)	0.67 (0.61 to 0.75)	1.52 (1.01 to 2.31)	1.07 (0.95 to 1.19)	0.94 (0.82 to 1.07)	0.89 (0.78 to 1.01)
P value	<0.001	0.002	0.067	0.297	<0.001	0.046	0.253	0.355	0.068

Model 1: adjusted for age, sex, Hispanic/Latino background, and study site; model 2: model 1+ OSS (education, income, and employment); model 3: model 2+nativity, marital status, insurance status, and perceived discrimination; model 4: model 3+prevalent coronary heart disease, Center for Epidemiologic Studies Depression Scale (continuous), physical health. BMI indicates body mass index; CVH, cardiovascular health; HS, high school; OR, odds ratio; OSS, objective markers of social status; SSS, subjective social status; and USD, US dollars.

rates of being undocumented among Mexicans compared with those from other Latino/Hispanic backgrounds, SSS may be capturing features of social context associated with CVH better than traditional measures of SES.

Even so, we found only partial evidence for our second hypothesis that nativity/US length of stay modifies the association between SSS and CVH. For the foreign born, longer US stays and higher SSS showed indirect benefits to CVH. Nativity/US length of stay moderated the relationship between SSS and CVH, particularly for Ideal smoking and Ideal blood pressure. A shorter length of stay reduces the magnitude of the positive association between SSS and CVH.

Smoking is a highly changeable behavior; people can readily improve their CVH profiles by quitting. However, whether someone smokes merits some discussion, as it is arguably best understood by considering *both* OSS and SSS measures. Kaplan et al[44] found that Hispanic/Latino people with low SES were more likely to smoke, less likely to have quit, and less disposed to have used nonprescription quit products compared with those with higher income and education levels. However, they also found that smoking was more common for those born in the United States and who held a higher level of acculturation to the dominant US culture, particularly among women. Merzel et al[45] examined smoking cessation among Hispanic/Latino people and found few differences in socioeconomic characteristics by sex. Instead, they found that younger and more acculturated women had lower odds of sustaining cessation. These studies suggest that the influence of SSS on health behaviors may be complex.

This study has several limitations worth considering. Given the cross-sectional design, we cannot infer causal relationships between SSS and CVH. The association was evident in an older sample of Hispanics/Latinos (median age, 41) and reflects a snapshot in time, not a longitudinal assessment. This study also did not evaluate differences in associations between SSS and CVH by Hispanic/Latino background. Such evaluations may prove telling, as our analysis of those of Mexican background illustrated a strong association between SSS and CVH. We did exclude participants who were missing data (n=1041). However, our analysis of the exclusions (<10% the sample) showed few differences. We also suspect that in model 4, we may be inducing the estimation of the total effect toward the null by overadjusting for previous health conditions.[46] A test of this (not shown) found that when adjusting for mental health (Center for Epidemiologic Studies Depression Scale) or physical health (PCS) separately, the results remained very similar. PCS showed a slightly larger attenuation in the coefficients, but given that the coefficients are

somewhat small, further studies are needed to examine this issue.

Another issue that arose relates to the evaluation of clinical relevance when only small changes in CVH are observed as SSS increases. Model 3 (Table 3) shows a 1-unit increase in SSS is associated with a 0.04-unit improvement in CVH. Given that our CVH metric ranges from 0 to 14, a substantial 5-rung jump in SSS would increase CVH by a mere fifth of a point. Such a modest change in CVH falls well below the detection threshold for CVD mortality risk[27] and raises the question of clinical relevance. However, from the perspective of public health, which reckons with cumulative effects over the life span, a different construal can be made. Although the effect of SSS may be considered "very small," such relatively small effects can have meaningful implications if the effects compound or accumulate over time to magnify the effect.[47–49] It is reasonable to think that SSS could have such compounding effects because one's perceived social status could influence changes in the social and physical environment in ways that affect health.[48] Moreover, just like disease outcomes, CVH is likely determined by multiple factors, so any one variable may show limited associations. Thus, at the population level, small differences can have a compounding effect over time.[49,50] The accumulated effects of not smoking, regular exercise, and a heart-healthy diet on CVH occur incrementally over time, and in this regard, SSS might play a protective role. For example, as we discussed earlier, higher SSS scores coincided with less smoking among foreign-born people living in the United States, a health promoting behavior that reaps dividends over time.

In contrast to measures used to evaluate CVH, procedures to appraise SSS were limited in scope. While there is overwhelming evidence for associations between SES indicators and various maladies and hard clinical end points, the same is not true for SSS. In addition, the MacArthur Scale assessed only the participants' self-perceived social status relative to the general United States, not their community. Some studies have examined associations of proximal (one's community) and distal (one's country) SSS with CVH[51,52] and found that the distinction makes a difference. People's distal status may not coincide with their proximal status, and it remains unknown whether status in close social networks (ie, a leadership role in church) might buffer the effects of a relatively lower status when considering a national reference group. Small clinical studies point in this direction. One study found that low SSS relative to the community was associated with impaired vasodilation of the brachial artery in young to middle-aged adults.[51] In another study, people who ranked themselves with low SSS with regard to their country and community showed reduced activity in beta-adrenergic receptors,[52] which mediate vasodilation, heart rate increase, and immune functions.[52,53] Over time, such impairment has been implicated in the pathophysiology of cardiovascular disease.[54]

Future studies should explore the stability of SSS over time in comparison with OSS. We know that trajectories of exposure, in which OSS features prominently, are useful predictors of health-related outcomes of interest.[48,55] For instance, one study examined the effects of both lifetime socioeconomic trajectory and cumulative disadvantage from childhood on the cognitive performance of Mexican American older adults found that compared with those with continuous low SES throughout the life course, those with more advantaged lifetime SES trajectories experienced fewer cognitive declines.[48] Chronic exposure to low SSS might result in larger effect sizes when it comes to CVH, but we will not know until these types of studies are performed; trajectory studies simply are not available for measures of SSS. In addition, more studies are needed to explore the mechanisms through which SSS may influence CVH, and it would be useful to establish clinical end points.

CONCLUSIONS

CVH arises in a milieu that is partially biological and behavioral. Among possible factors that can influence CVH, social status remains constant. The role that OSS plays is well established and increasing evidence suggests SSS provides meaningful additional information, especially at the population level, in which small differences can have a cumulative effect over time. Yet investigators continue to rely solely on OSS measures. Despite being a relatively simple measure, SSS remains underused in health studies and when it is used, its application is limited to one point in time. The inclusion of it and other complementary measures could provide a more robust picture, including its objective and subjective features, for how social status influences health *over time*. Such an approach would also help reveal how inequitable social arrangements affect long-term health and facilitate actions to reduce disparities in CVH. Moreover, attention to SSS could yield innovative social interventions that help elevate one's sense of social status. At the population level, a small positive difference in SSS could have large returns on health outcomes even if OSS remains modest over the life course. Such an approach would also help reveal how inequitable social arrangements affect long-term health and facilitate actions to reduce disparities in CVH.

ARTICLE INFORMATION

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Disclosures

None.

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