Original article

The Association Between John Henryism and Depression and Suicidal Ideation Among African-American and Caribbean Black Adolescents in the United States

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A B S T R A C T

Purpose: The aim of this study is to investigate the relationship between John Henryism (JH), a psychological construct indexing repeated high effort coping, and depression and SI among Black adolescents, and to explore whether these relationships vary by sex.
Methods: Data came from the National Survey of American Life-Adolescent Supplement, a cross-sectional, multistage probability sample of African-American and Caribbean Black adolescents aged 13–17 (N = 1,170). JH was measured using a 12-item scale (alpha = 0.71) and dichotomized at the median. Lifetime history of major depression (MD) and SI were assessed using the Composite International Diagnostic Inventory and self-report, respectively. Logistic regression was used to assess the relationship between JH and likelihood of MD and SI, adjusting for demographic and psychosocial characteristics and accounting for the complex survey design. Moderation by sex was assessed using interaction terms.
Results: Lifetime prevalence of MD was 6.3% (N = 87) and lifetime history of SI was 7.6% (N = 91). In unadjusted models, high JH was inversely associated with MD (odds ratio [OR]: 0.55, 95% confidence interval [CI]: 0.34–0.90) and SI (OR: 0.45, 95% CI: 0.23–0.91). In adjusted models, the relationship between JH and MD was attenuated (OR: 0.68, 95% CI = 0.39–1.18, p = .16) and remained marginally significant for SI (OR: 0.55, 95% CI: 0.28–1.06, p = .07). These relationships were similar by sex.
Discussion: Consistent with prior work in adults, JH was inversely associated with MD and SI among Black adolescents. Findings illustrate the importance of considering culturally salient protective factors for mental health among Black adolescents.
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IMPLICATIONS AND CONTRIBUTION

There is a dearth of data on the unique determinants of mental health among Black adolescents in the United States. Given the increasing incidence of suicide in this population, research is needed to identify protective factors that can be used to inform tailored interventions.

Suicide is the second leading cause of death among Black youth aged 15–24, yet suicide among this population remains an under-recognized public health problem [1]. Although the incidence of major depression (MD), an established risk factor for suicide, is relatively low in this group, it is more likely to take on a chronic, severe, and disabling course in adulthood among this population [2,3]. In addition, although suicide risk among Black youth has historically been low relative to other groups, the incidence of completed suicide among Black youth aged between 5 and 11 years old significantly increased from 1993 to 2012 [4]. National school–based surveys indicate that Black adolescents

and young adults have a higher prevalence of suicide attempts, and suicide attempts result in injury, than non-Hispanic White and Hispanic peers, although they are less likely to report suicidal ideation (SI) [5]. Black youth experienced a 73% increase in attempts between 1997 and 2012, with Black boys displaying a significant linear increase in suicidal injury [6,7]. Prior research on suicidal behavior has identified risk factors such as interpersonal stress and lower mental health service use as contributing to poor mental health among adolescents [8,9]; additional research has explored unique considerations in Black adolescents including racial discrimination [10] and underreporting of depression [11,12]. However, modifiable factors that shape suicide risk in this group are complex and poorly understood.

Research on the risk and protective factors for MD and SI among the Black population should be informed by culturally salient models of mental health and related behaviors [13]. One such culturally salient construct in the US Black population is John Henryism (JH) [14–16]. Named in honor of the African-American folk hero, JH is a psychological construct that describes a predisposition to repeated high effort coping in the face of exposure to adversity, including psychosocial stress, violence, discrimination, financial strain, and so forth [14]. Individuals with high JH endorse a strong will to succeed, a high sense of control over their lives, a belief in self-determination, and an active approach to problem solving often incompatible with help seeking. Dr. Sherman James (1983) [14] first identified this coping style among Black Americans, defining it as emerging from a historical and cultural milieu defined by structural racism and socioeconomic subjugation, giving rise to persistent health disparities.

As it applies to health, empirical research on the implications of JH emerged from efforts to identify culturally salient explanatory models of excess cardiovascular morbidity and mortality among Black adults. The primary hypothesis of JH is that high effort coping contributes to earlier onset of cardiovascular disease through the hastening of physiological "wear and tear" via continual activation of stress response systems [17]. In the first empirical examination of this construct as a predictor of health, James et al. [14] showed that Black men with high (>median) JH had higher diastolic blood pressure compared to those who scored lower on this construct. An equally important finding from this examination included the interaction between JH and level of education, which indicated that men with low education (<11 years of formal schooling) had higher diastolic blood pressure compared with men who had an above median JH score and high education, signifying the importance of socioeconomic standing on the adverse effect of JH on physical health.

Since that initial report, the finding that high effort coping is associated with high blood pressure has been replicated in diverse samples of men and women [18,19] and with hypertension risk behaviors such as smoking initiation [20]. Brody et al. investigated similar questions using a longitudinal cohort of young Black Americans (mean age of 25) and found a significant interaction between family socioeconomic disadvantage (assessed at ages 11–18) and JH when predicting metabolic syndrome. Those from more disadvantaged versus privileged backgrounds with high JH were more likely to have metabolic syndrome [21].

Although initially conceptualized as a determinant of cardiovascular health, emerging studies have explored the relationship between JH and mental health outcomes, with mixed findings. Bronder et al. [22] found a negative correlation between JH and depressive symptomology among Black women, but also noted that individuals who scored high on the construct were also more likely to perceive more social support. Kiecolt et al. [23] examined the relationship between JH and mental health outcomes in the National Comorbidity Survey, a nationally representative US sample of adults, and found that high levels of JH and higher sense of control were inversely associated with psychological distress and past-year psychiatric disorder. However, Hudson et al. [24] found a significant positive association between JH and likelihood of MD in the National Survey of American Life (NSAL), a nationally representative sample of Black Americans, although the magnitude of the association was small.

A recent analysis using a representative sample of Black Americans found both harmful and beneficial effects of JH, finding that higher JH was associated with both increased allostatic load as measured by stress biomarkers and fewer depressive symptoms [25]. This study, like previous work [14,21], also found that the effect of JH on physical health was conditional on socioeconomic status (SES; defined by income, education, and occupation), though the results for depressive symptoms did not vary by SES. A recent analysis of the adolescent sample of the NSAL explored the potential role of JH as a coping mechanism in response to experiences of discrimination leading to depression, as measured by self-report. The study found a small, but significant, mediating effect of JH on the relationship between self-reported discrimination and depressive symptoms [26]. Furthermore, the study found an inverse association between JH scores and frequency of depressive symptoms, in contrast to other studies in adults that found a positive association [24], though the literature has generally been mixed. This implicates JH as a potential mechanism in the pathway between racialized social and cultural exposures and psychiatric outcomes in adolescents. Taken together, this literature illustrates the utility of culturally salient factors in understanding mental health within the Black population.

Although much of the empirical work on JH and health among Black Americans has focused on adults, there is emerging evidence that this construct is also relevant to the health of adolescents. Adolescence is a period during which psychological traits, coping strategies, and related factors begin to reinforce, which has implications for mental and physical health over the life course [27]. Therefore, to identify culturally relevant determinants of suicidality in the Black population, this study aims to assess the relationship between JH and MD and SI among a nationally representative sample of Black adolescents, and to explore whether these relationships vary by sex. Based on the foundational work by James et al., the primary hypothesis is that higher levels of this form of effortful coping will be inversely related to prevalence of these indicators of poor mental health.

Methods

Sample and dataset

Data come from the National Survey of American Life-Adolescent Supplement (NSAL-A), conducted from 2001 to 2004. The NSAL-A is a cross-sectional, multistage probability sample of 1,170 African-American and Caribbean youth between the ages of 13–17, nested within the parent NSAL household survey [28]. The purpose of the NSAL-A is to investigate the

prevalence, severity, comorbidity, and potential determinants of mental disorders in this population. In-person interviews collected data on demographic, psychosocial, and neighborhood characteristics, as well as diagnostic measures of mental disorder data [29]. As there were few missing data (i.e., only 36 (3.1%) participants were missing any data on the variables of interest), we conducted a complete case analysis (analytic N = 1,134).

The NSAL-A was funded by the National Institutes of Mental Health, approved by the University of Michigan (U-M) Institutional Review Board, and all participants provided informed consent. Data used in this secondary analysis were publicly available through the U-M Inter-university Consortium for Political and Social Research, and the U-M Institutional Review Board determined that this analysis met criteria for being exempt from human subjects regulations (https://doi.org/10.3886/ICPSR36380.v1) [28].

Exposure

JH was measured using a 12-item scale (alpha = 0.71) designed specifically to assess this construct, including capturing themes related to physical and mental vigor and the determination and commitment to work hard and succeed [29]. Example items include the following: "When things do not go the way I want then to, that makes me work even harder"; "Once I make up my mind to do something, I stay with it until the job is completely done"; "It's important for me to be able to do things in the way I want to do them rather than the way other people want me to do them"; and "Very seldom have I been disappointed with the results of my work." Each item was rated on a Likert scale ranging from 1 (completely true) to 4 (completely false). As appropriate, items were reverse-scored and then summed, with higher values corresponding to higher levels of effortful coping (median = 40.7, interquartile range = 37.5−43.5). Consistent with prior studies of this construct [14], the JH variable was dichotomized at the median for analysis, with scores ≥41 indicating "high JH" and <41 indicating "low JH."

Outcomes

Two mental health outcomes were examined: MD and suicidality. Lifetime history of MD, as defined by the Diagnostic and Statistical Manual IV, was assessed using the Composite International Diagnostic Inventory [30]. Suicidality was defined as the presence of lifetime history of SI indicated by responding affirmatively to the experience of whether "you seriously thought about killing yourself," recorded as yes/no. The NSAL-A only asked about suicide attempts among those who first endorsed lifetime SI, and therefore this data cannot identify adolescents who had attempted without a history of ideation. Lifetime history of both MD and SI was treated as a binary variable.

Moderator

Sex was measured by self-report as a binary variable (male/female). Prior research has shown that Black adolescent females are more likely to report SI as well as to attempt suicide relative to males [31]. There is also suggestive evidence that sex moderates the relationship between JH and psychological outcomes, with this association stronger among Black men relative to Black women [19]. However, the literature is generally mixed, with some studies on JH and depression finding no gender effect [25,32]. Therefore, this study examined whether the relationships between JH and MD and SI varied by sex using interaction terms (i.e., JH × sex).

Covariates

SES may potentially confound the association between JH and mental health. Prior research using the NSAL sample has shown that SES is inversely associated with JH [33], and that higher SES is positively correlated with psychological distress and depression [16], a phenomenon that contrasts with the inverse association between SES and mental health observed in predominantly White samples. For this analysis, SES was indicated by household family income, categorized as $1−$10,000, $10,001−$25,000, $25,001−$50000, $50,001−$75,000, and >$75,001 for analysis. In addition, perceived SES was measured using responses from the question, "In general, would you say you and your family living here have more money than you need, just enough for your needs, or not enough to meet your needs?" with response options "more than need," "just enough," and "not enough."

Perception of stress was also assessed as a potential confounder, responding to prior studies that had explored the relationship between JH and stress on physical health and functioning among immigrants [34] and high SES Black adult men [35]. Current perceived stress (within the last month) was measured using the 14-item (alpha = 0.75) Cohen Perceived Stress Scale (PSS). Items (e.g., "felt nervous and stressed out," "felt that things were going your way," "been able to control hassles in your life") were scored using a Likert scale with values ranging from 1 (never) to 5 (very often). Items were reverse coded as appropriate and then summed, with higher values corresponding to higher perceived stress (median = 35.3, interquartile range = 29.2−40.5). As with the JH variable, the PSS score was dichotomized at the median for analysis, with scores ≥35 indicating "high stress" and <35 indicating "low stress."

Finally, models were also adjusted for age (in years) and ethnicity, using a dichotomous indicator of Caribbean versus African-American descent.

Statistical analysis

Initially, descriptive statistics were used to examine the distribution of JH in the sample as a function of sex, history of MD, and history of SI. Next, logistic regression models, with survey procedures to account for the complex sampling design, were used to estimate the relationships between JH and MD and SI. Two sets of models, one crude and one adjusted for sex, age, ethnicity, household family income, perceived stress, and perceived SES, were fit for both outcomes. Crude, minimally adjusted, and fully adjusted models were also compared to assess the relative confounding effects of included covariates. The potential moderating role of sex was examined using interaction terms in regression analyses. All analyses were weighted to be representative of the adolescent Black population in the United States in 2000. Analyses were conducted using SAS (Version 9.4) and all p-values refer to two-tailed tests.

Post hoc exploratory analysis

Additional post hoc analyses were conducted to provide deeper understanding of observed associations with adverse mental health outcomes and further characterize this study

population given their novelty in this research area. First, an exploratory analysis was conducted using Spearman correlations of JH and psychosocial contextual variables that may plausibly be correlated with JH to provide additional information about the contexts and circumstances of youth with higher levels of effortful coping. These included measures of religiosity, family tangible and emotional support, peer tangible and emotional support, mastery (one's perception of control and agency over their life), racial socialization, neighborhood quality, and everyday experiences of discrimination. Given this is one of the first explorations of JH in adolescents as it relates to mental health outcomes, this provides information on how JH covaries with these factors, which can inform the interpretation of our main empirical question regarding JH and mental health. Finally, given the formulation of JH as a form of coping with stress, we conducted a post hoc analysis to explore the potential buffering role of JH on the relationship between perceived stress with the two mental health outcomes using interaction terms (i.e., JH × PSS).

Results

Descriptive statistics of the sample as a function of JH and lifetime history of MD and SI are presented in Tables 1 and 2, respectively. Levels of JH did not significantly vary by sociodemographic characteristics; however, JH was inversely associated with perceived stress (Rao-Scott χ^2 = 21.8, p < .0001). Overall, the lifetime prevalence of MD was 6.3% and the lifetime

Table 1
Demographic and psychosocial characteristics stratified by level of John Henryism: National Survey of American Life-Adolescent Supplement 2001—2004[a]

Variable	Total score		Low John Henryism		High John Henryism		χ^2, p-value
	Mean	SE	N	Weighted %	N	Weighted %	
Total	40.7	0.17	538	43.9	632	56.1	
Sex							2.1, .146
Male	40.5	0.25	280	53.1	283	47.6	
Female	41.0	0.21	258	46.9	349	52.4	
Age (y)							3.3, .511
13	40.7	0.30	104	20.4	117	19.9	
14	40.8	0.35	126	20.1	130	20.2	
15	40.8	0.34	101	21.2	113	20.0	
16	40.4	0.32	107	21.5	120	18.9	
17	41.0	0.37	100	16.7	152	21.2	
Caribbean descent							0.1, .796
Yes	41.0	0.76	168	6.7	163	7.1	
No	40.7	0.17	363	93.3	453	92.9	
Household income ($)							2.2, .705
1—10,000	40.7	0.39	65	13.8	81	14.2	
10,001—25,000	41.1	0.24	161	31.2	220	32.9	
25,001—50,000	40.6	0.36	188	32.6	196	32.3	
50,001—75,000	40.6	0.41	77	14.1	88	14.8	
>75,001	40.0	0.41	44	8.3	44	5.9	
Perceived SES							1.4, .488
More than need	41.5	0.49	41	9.6	71	12.8	
Just enough	40.7	0.21	412	77.0	476	74.3	
Not enough	40.6	0.37	81	13.3	81	12.9	
Perceived stress							21.8, <.0001
Low	41.9	0.27	178	32.9	331	53.3	
High	39.9	0.19	360	67.1	301	46.7	

SE = standard error; SES = socioeconomic status.
[a] Total vary due to missing data.

Table 2
Demographic and psychosocial characteristics by lifetime major depressive disorder and lifetime suicidal ideation: National Survey of American Life-Adolescent Supplement 2001—2004[a]

Variable	Lifetime major depressive disorder		χ^2, p-value	Lifetime suicidal ideation		χ^2, p-value
	N	Weighted %		N	Weighted %	
Total	87	6.3		91	7.6	
John Henryism			6.7, .0097			5.7, .0166
High	37	42.1		36	37.6	
Low	50	57.9		55	62.4	
Sex			0.20, .652			4.1, .044
Male	38	47.0		27	36.5	
Female	49	53.0		64	63.5	
Age (y)			7.5, .113			4.8, .304
13	5	5.6		13	12.1	
14	18	16.0		16	17.9	
15	18	25.6		15	17.3	
16	20	26.8		16	22.4	
17	26	26.0		31	30.3	
Caribbean descent			0.41, .521			0.01, .920
Yes	26	5.8		27	6.9	
No	60	94.2		64	93.1	
Household income ($)			2.3, .676			3.1, .536
1—10,00	7	7.7		9	8.9	
10,001—25,000	25	30.1		22	26.7	
25,001—50,000	35	36.6		39	44.5	
50,001—75,000	14	16.2		13	12.6	
>75,001	6	9.3		8	7.2	
Perceived SES			8.0, .018			1.2, .560
More than need	2	2.6		7	8.8	
Just enough	70	80.2		66	75.5	
Not enough	15	17.3		18	15.7	
Perceived stress			17.9, <.0001			18.3, <.0001
Low	14	14.5		10	15.6	
High	73	85.5		81	84.4	

SES = socioeconomic status.
[a] Total vary due to missing data.

prevalence of SI was 7.6%. As expected, perceived stress was positively associated with MD (Rao-Scott χ^2 = 17.9, p < .0001) and SI (Rao-Scott χ^2 = 18.3, p < .0001). MD was also inversely associated with perceived SES (Rao-Scott χ^2 = 8.0, p = .018). Although MD did not vary by sex, SI was significantly more common among females (Rao-Scott χ^2 = 4.1, p = .044). Post hoc analysis on the correlations between JH and psychosocial contextual variables, presented in Table 3, showed moderately positive correlations between JH and familial support (ρ = 0.24, p > .001) and peer support (ρ = 0.20, p > .001). Mastery was also moderately, positively associated with JH (ρ = 0.22, p > .001), indicating that those with higher JH scores had higher scores on mastery. Mastery was inversely correlated with everyday experiences of discrimination (ρ = −0.15, p > .001).

Table 4 shows the results of both crude and adjusted logistic regression models on the relationship between JH and MD and SI. In the crude models, high JH was inversely associated with lifetime history of MD (odds ratio [OR]: 0.55, 95% confidence interval [CI]: 0.34—0.90). Similarly, high JH was inversely associated with lifetime history of SI (OR: 0.45, 95% CI = 0.23—0.91). After adjustment for sex, age, Caribbean descent, household family income, perceived SES, and perceived stress, JH remained a marginally significant predictor of SI (OR = 0.55, 95% CI = 0.28—1.06, p = .0743), but was no longer significantly associated with

Table 3
Spearman correlation matrix of John Henryism and contextual variables: National Survey of American Life-Adolescent Supplement 2001–2004

	JH[a]	RE[b]	FS[c]	PS[d]	M[e]	RS[f]	NQ[g]	ED[h]
JH	1.00							
RE	−0.09*	1.00						
FS	0.24**	−0.16**	1.00					
PS	0.20**	−0.07*	0.23**	1.00				
M	0.22**	−0.06*	0.23**	0.07*	1.00			
RS	0.09*	−0.12**	0.12**	0.10**	0.004	1.00		
NQ	0.09*	−0.07*	0.18**	0.11**	0.19**	0.02	1.00	
ED	−0.15**	0.05	−0.18**	−0.07*	−0.15**	0.12**	−0.09**	1.00

*p-value <.05.
**p-value <.001.
  [a] John Henryism: total score using 12-item scale.
  [b] Religiosity: subject response to "How religious are you?" from Very religious to Not religious at all.
  [c] Familial Support: sum of responses to 5-item scale assessing emotional and tangible parental support.
  [d] Peer Support: sum of responses to 5-item scale assessing emotional and tangible peer support.
  [e] Mastery: average score on adolescent-adapted 12-item Pearlin Mastery Scale (1978).
  [f] Racial Socialization: average score on 4-item scale assessing the frequency of discussions on race or racism with parents, relatives, peers, and other adults.
  [g] Neighborhood Quality: average score on 4-item scale assessing neighborhood safety and connectedness.
  [h] Everyday Discrimination: Sum of discrimination experiences from a 13-item scale.

MD (OR = 0.68, 95% CI = 0.39−1.18, p = .1620). The interaction term between sex and JH was also nonsignificant for both MD (p = .1777) and SI (p = .3487), suggesting that the relationship between JH with mental health was similar for adolescent boys and girls.

When comparing crude, minimally adjusted, and fully adjusted models (Table A1), perceived stress had a considerable effect on the crude OR followed by perceived SES. The effect estimate of JH on MD was attenuated by 31% with the inclusion of PSS in a fully adjusted model compared with a minimally adjusted model. The effect estimates of JH on MD in a minimally adjusted model without perceived stress (β = 0.52) was similar to the crude model (β = 0.55) and exaggerated the protective effect of JH on MD compared to a fully adjusted model with perceived stress (β = 0.68). Similar results were found for SI. The effect estimate of JH was also attenuated by 31% with the inclusion of perceived stress in a fully adjusted model compared with a minimally adjusted model, also exaggerating the protective effect of JH on SI. Perceived stress made the relationship for both outcomes nonsignificant compared to when adjusting for all other covariates. The non−collapsible nature of the OR is minimized in these results given the rarity of both outcomes (prevalence of <10%), allowing for the comparison of marginal and conditional estimates.

Finally, we conducted a post hoc analysis to explore the potential moderating role of perceived stress. Consistent with prior research, perceived stress was significantly associated with higher odds of both MD (OR = 4.48, 95% CI: 1.84−10.91) and SI (OR = 4.78, 95% CI: 2.27−10.05), adjusting for other covariates and accounting for JH. However, the interaction between perceived stress and JH was not significant for both MD (p = .6571) and SI (p = .7003), indicating that the relationship between JH and these mental health outcomes did not vary as a function of perceived stress.

Discussion

The main findings from this study are that Black adolescents with high JH had lower odds of lifetime SI and MD. Although after adjusting for potential confounders these relationships did not meet traditional thresholds for statistical significance, the protective effect sizes remained substantial. Higher levels of JH were associated with a 32% lower odds of lifetime MD and 45% lower odds of lifetime SI compared to lower levels, even after accounting for perceived stress. SI, but not MD, was more common among females in this sample, but their relationships with JH was not significantly moderated by sex. Finally, although perceived stress and JH were each related to mental health in a contrasting manner, there was no evidence that the relationship between JH and mental health was moderated by perceived stress. These findings have potential implications for both research in recognizing unique risk or protective factors for Black populations as well as for clinical practice in identifying salient and beneficial coping mechanisms for depression and suicide risk.

The role of gender as a contextual factor for stress and coping within the Black population is not fully understood. In this study, the level of JH varied by perceived stress, but not by sex or other demographic characteristics. However, both MD and SI were positively associated with stress, and SI varied by sex. Although some investigations in adult samples find sex differences in the relationship between JH and health outcomes [18,19,36], in this analysis the protective relationship between JH and mental health was similar for adolescent boys and girls. Indeed, multiple studies do not find sex differences between adult Black men and women for cardiovascular health outcomes and depressive symptoms [14,25,32,37]. Given the inconclusive nature of previous findings, this study aimed to assess whether such effect heterogeneity existed in adolescents, particularly given the theoretical rationale (e.g., intersectional experiences of racism) and prior empirical research (e.g., differences in availability and engagement with social support) suggesting such variation. As such, considering the moderating effect of sex was appropriate, although findings were null.

Dressler's (1998) sociocultural framework on stress processes has provided a potential framework for previous findings in adults that indicated effect heterogeneity by sex. The framework posits that definitions of cultural "success" differ between Black men and women such that women reap the rewards of high coping in traditional domestic spheres, resulting in better physical and psychological health, while men often do not achieve success as measured in a "public sense" through occupational mobility and financial status due to structural barriers. However, as may be the case given our findings, adolescent boys and girls may not occupy distinct enough spaces such that there is not differential uptake of potentially protective coping mechanisms. Additionally, the dual experiences of racism and sexism experienced by Black women and girls may also position JH as an unmeaningful way to capture the mental well-being in this group, given its initial conception as a culturally relevant coping mechanism among Black men. Furthermore, differential physiological and psychological reaction to stressors between men and women may result in threshold differences in detection. However, while intersectionality frameworks argue that the salience of JH for mental health may vary as a function of the confluence of sexism and racism, we did not observe variation by sex. In the context of adolescent development, our null findings

Table 4
John Henryism predicting lifetime major depressive disorder and lifetime suicidal ideation in entire sample: National Survey of American Life-Adolescent Supplement 2001–2004 (N = 1,134)

	Model 1		Model 2	
	Depression	Suicidal ideation	Depression	Suicidal ideation
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
John Henryism				
High	0.55 (0.34–0.90)	0.45 (0.23–0.91)	0.68 (0.39–1.18)	0.55 (0.28–1.06)
Low	Reference	Reference	Reference	Reference
Sex				
Male			0.98 (0.52–1.85)	0.57 (0.31–1.06)
Female			Reference	Reference
Age			1.31 (1.04–1.65)	1.21 (1.05–1.39)
Caribbean descent				
Yes			0.70 (0.31–1.60)	0.84 (0.28–2.55)
No			Reference	Reference
Household income ($)				
1–10,000			0.27 (0.06–1.27)	0.44 (0.08–2.34)
10,001–25,000			0.49 (0.12–1.95)	0.64 (0.13–3.12)
25,001–50,000			0.65 (0.18–2.26)	1.19 (0.26–5.60)
50,001–75,000			0.72 (0.21–2.49)	0.73 (0.15–3.58)
>75,001			Reference	Reference
Perceived SES				
More than need			0.19 (0.03–1.25)	0.92 (0.44–1.91)
Just enough			0.98 (0.48–2.00)	0.88 (0.42–1.84)
Not enough			Reference	Reference
Perceived stress				
High			4.48 (1.84–10.91)	4.78 (2.27–10.05)
Low			Reference	Reference
C-statistic	0.56	0.58	0.71	0.77

CI = confidence interval; OR = odds ratio; SES = socioeconomic status.

may reflect the overall mixed literature on gender differences between JH and mental health.

The post hoc analysis of the correlations between JH and psychosocial and contextual factors suggests that additional processes may be contributing to the observed protective effect on depression and SI, chiefly access to familial and peer support as well as positive psychosocial dispositions (e.g., mastery). If those who endorse JH have more accessible social support and attitudes toward life that promotes well-being, this could be a plausible mechanism by which the coping mechanism confers protection. Conversely, those with more tangible and emotional support from others may be more likely to endorse and utilize JH given the resources available to them to engage in goal striving behavior to achieve success in their life. This is consistent with the analysis exploring the confounding influence of perceived stress, which identified stress as an important determinant of the observed protective effect of JH on depression and SI, even accounting for demographic and socioeconomic factors.

Collectively, this points to the potential utility of JH and related coping strategies in situations of high perceived stress among Black adolescents. Given the robust literature on the adverse impact of stress on mental health, it is likely the case, as our findings show, that perceived stress introduces an attenuation of these associations, especially given the positive relationship between stress and depression and ideation. However, given the cross-sectional nature of this data, future research is needed to explore the potential bidirectional nature of different coping mechanism initiations and perceived stress over time during adolescence and the resulting impact on mental well-being.

Moreover, additional research disentangling the relationship between these related psychosocial factors, particularly in times of high perceived stress, is needed to understand the resources adolescents utilize and their psychological costs and benefits.

Findings from this study emphasize the nuance in identifying the potential differential influence of psychosocial factors for different aspects of health (mental and physical) over the life span. Although previous research in Black adults has found that high JH is associated with greater risk of cardiovascular morbidity and mortality, suggesting that high levels of effortful coping are deleterious to *physical* health [14–16,18,19], the few studies of JH and *mental* health of Black adults have found that higher levels of JH are associated with lower levels of depressive symptomology and psychological distress [22,23,26]. Although additional research to understand the positive aspects of JH on psychological outcomes is necessary, scholars note the benefits of high effort coping, captured culturally in the ideals of persistence, fortitude, and individual personal responsibility, in the overall upward mobility of Black Americans [13]. As such, JH could serve as both a risk factor and a resource, given the physiological wear on the body over time while serving as useful tool to deal with daily stressors. Social and economic standing and access to the resources necessary to overcome these stressors, however, may impact the degree to which JH serves as a risk or benefit to physical health given the potential mitigation of stress [25].

Findings should be interpreted considering study limitations and strengths. Given the cross-sectional design of the NSAL-A, temporality cannot be established between the variables of

interest. Given the skip pattern of the interview, which only asked respondents about suicide attempts if they first endorsed ideation, the relationship between JH and lifetime suicide attempts, independent of SI, could not be assessed. As the prevalence of both MD and SI was low, this study may be underpowered, requiring caution in the interpretation of findings given the wide CIs and resulting uncertainty. Finally, since the NSAL-A was collected between 2001 and 2004 it may not reflect the experiences, attitudes, or environmental contexts of Black adolescents in the United States today, in the backdrop of increasing suicide risk in this population. This study also has several strengths, including the use of a diagnostic measure of MD compared to strictly self-report and a large nationally representative sample of Black adolescents that reduces selection bias while providing a breadth of survey items capturing relevant sociodemographic and psychosocial variables of interest. Furthermore, this study was able to explore within sources of within-group variation.

The findings of this study suggest several areas for future research. How JH relates to other psychological factors related to race (e.g., vigilance) and broader personality traits (e.g., conscientiousness) is unknown, but clarifying these relationships would help situate JH within the broader field of psychosocial development. There have been some studies that aim to contribute to this line of inquiry [38]. Furthermore, understanding how JH relates to factors that have established protective relationships with depression and related outcomes, such as perceptions of emotional and family support, may help clarify the mechanisms linking JH and mental health. This study provides a first attempt. Finally, understanding how JH relates to broader social changes, such as shifts in religiosity or attitudes around suicide, may help explain the recent trends in suicidal behavior among Black adolescents [39,40]. Although stratification by immigration status was not looked at here, the diversity of the Black US population has increased since this NSAL-A and will continue to do so. As such, research on diaspora membership, length of stay in the United States, and mobility and refugee status make for important areas of future research as it relates to health outcomes. Studies utilizing data explicitly collected for these questions have been published [41].

In sum, this study demonstrates the utility of constructs such as JH to characterize distinct features of the Black experience as a social determinant of health. It adds to the emerging literature on the relevance of JH as a culturally salient coping style and its relationship to mental health outcomes. Findings extend work on the relationship between JH and mental and physical health outcomes in adulthood to the Black adolescent population, a developmentally distinct time of the life course marked by the emergence of depressive symptomology and suicidal behavior.

This study also has implications for addressing the mental health needs of Black adolescents. Findings may eventually inform more robust, holistic, and culturally attuned screening practices in clinical settings to characterize suicide risk more accurately among Black adolescents. Indeed, the construct of JH lends itself to a strengths-based model of prevention and intervention [42], which is increasingly recognized as critical to engaging minority populations in health promotion.

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Supplementary Data

Supplementary data related to this article can be found at http://doi.org/10.1016/j.jadohealth.2022.07.006.

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