

Original Article

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Perceived Discrimination and Suicidal Thoughts and Behaviors Among American African American and White Children



Shervin Assari^{1,2,3*}

- ¹Marginalization-related Diminished Returns (MDRs) Research Center, Charles R. Drew University of Medicine and Science, Los Angeles, CA, USA
- ²Department of Family Medicine, Charles R. Drew University of Medicine and Science, Los Angeles, CA, USA
- ³Department of Urban Public Health, Charles R. Drew University of Medicine and Science, Los Angeles, CA, USA

*Corresponding Author: Shervin Assari, M.D., M.P.H., Associate Professor, Marginalization-related Diminished Returns (MDRs) Research Center, Charles R. Drew University of Medicine and Science, Los Angeles, CA, USA. Tel:+1-734-363-2678, Email: assari@umich.edu

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Abstract

Background: Perceived discrimination (PD) is a risk factor of suicidal thoughts and behaviors (STB) for children, youth, and adults. However, it is unknown whether the association between PD and STB frequency differs between African American (AA) and Non-Hispanic White children.

Objectives: In this study, we compared AA and non-Latino White children for the association between PD and STB frequency in a national sample of 9-10-year-old American children.

Methods: This cross-sectional study used data from the Adolescent Brain Cognitive Development (ABCD) study, which included 7883 non-Latino White or AA children between the ages of 9 and 10. The predictor variable was frequency of PDs. Race was the moderator. The outcome variable was STB frequency, treated as a count variable, reflecting positive STB items endorsed over the life-course. Covariates included sex, age, marital status, household income, parental education, parental employment, trauma, and economic difficulties. Poisson regression was used for data analysis.

Results: Of all the participants, 5994 were non-Latino Whites, and 1889 were AAs. Overall, PD frequency was positively associated with STB frequency. A statistically significant interaction was found between race and PD, suggesting that the association between PD and STB frequency is weaker in AA than non-Latino White children.

Conclusion: The observed weaker association between PDs frequency and STB frequency in AA than non-Latino White children suggests that PD may be a less salient risk factor of STB frequency for AA than non-Latino White children. Researchers should explore factors other than PD for suicide prevention of AA children in the US.

Keywords: Perceived Discrimination, Race, STB Frequency, Suicide, Children

1. Background

According to the stress theory developed by Lazarus,¹ we expect various types of stress to increase the risk of various undesired mental health outcomes.² Economic difficulty,³ stressful life events,⁴ perceived stress,⁵ trauma,⁶ adverse childhood experiences,⁶ family stress,⁶ 9 and perceived discrimination (PD)¹⁰,¹¹ all deteriorate the mental health of children and increase risk of psychopathology as well as suicidal thoughts and behaviors (STB frequency). However, each stressor may operate uniquely; all may have similar influences on children.¹²,¹³ Given that stress in childhood is very detrimental, it is essential to understand the types of stressors that may jeopardize the mental well-being of children and youth. It is essential to investigate the effect of one type of stress while other stressors are controlled.¹⁴

Although we know that various types of stressors have a large undesired effect on the mental health of children, ¹⁵ some types of stressors have received more attention than

other stressors. For example, much is known about how family-related stress may be linked to outcomes such as anxiety, depression, substance use, and suicide. However, not much is known about the effects of PD on STB frequency.

In addition, very little knowledge is available about the role of racial variation in stressors such as PD as a risk factor for STB among children. This is partly because there has been limited research comparing Non-Hispanic White (non-Latino White) and African American (AA) children for the associations between positive and negative aspects of family relations to STB frequency. Traditionally, STB frequency is seen as a non-Latino White, not an AA public health problem. ^{17,18} Historically, most research shows that in children, youth, and adults, non-Latino Whites are more likely to commit suicide than AAs. ¹⁹⁻²¹ This is due to the low acceptability of STB in AA families ^{22,23} that is attributed to high religiosity, ²² supportive social relations, ²⁴⁻²⁶ and resilience ²⁷⁻²⁹ in AA communities. This pattern is also

described as the AA's mental health paradox, suggesting that AA people flourish in the presence of adversities; while non-Latino Whites have low preparedness to handle stress as a function of their relative social privilege. 30-32

In recent years, the historic racial difference in STB frequency to the advantage of AA children has rapidly changed. An alarming, increasing trend of STB frequency in AA children, particularly boys, has been observed.33 The National Institute for Health (NIH) has called the AA youth suicide a national crisis. This has increased the need to understand why and how various risk factors may be related to the frequency of STB in AA children. One of the critical risk factors of STB in AA children is PD, as shown by some research. 11,34 However, research regarding the effect of racial variation in the role of PD as a risk factor of SBTs is very limited.

As mentioned, research has documented the role of a wide range of factors such as sex, age, socioeconomic status (SES), academic success, substance use, depression, and stress as risk factors of children's and youth STB frequency.35 A recent study using the Adolescent Brain Cognitive Development (ABCD) study data showed that in 9-10-year-old American children, stress related to family is one of the most important risk factors of STB frequency in 9-10 year old children.36 The study, however, did not test the effects of PD, and it also did not test whether racial groups differ in the correlation of various stressors to the frequency of STB.36

Past research has shown that STB frequency may have different risk factors for non-Latino White and AA children, youth, and adults.37,38 In a sample of young adults, while overall, intrapersonal factors, followed by an interpersonal factors had triggered suicidal ideation, non-Latino Whites were less likely to report interpersonal factors as a main trigger or a main precipitator of STB than racial and ethnic minorities.³⁹ Other studies have also shown that PD may differently predict health outcomes of AA and non-Latino White children. 40,41

Research has also shown that various types of stressors may differently correlate with mental health outcomes of AA and non-Latino White individuals. We know that chronic stressors are more common in the lives of AA than non-Latino White individuals.42 There is a belief that what is common becomes normal and frequency of stressors in the lives of AA families may have prepared them to adjust and cope with any new stress. In contrast, some investigators have argued that stress does not become normal and it takes a toll, thus past stress may increase AA people's vulnerability to additional stressors. 43 Research findings are also conflicting, as the results have been mixed. For example, some studies have shown a stronger association between stress and depressive disorders for non-Latino Whites than AAs,27 other studies have shown an opposite finding.29

However, most of these studies have been conducted on adults, so there is a dearth of knowledge on children. Considering that sensitivity or resilience to stress develops over the course of one's life,44 what is reported for adults may not hold for children. Consequently, the data regarding differential association between stress and STBs by race cannot be applied to children. Thus, there is a need to study if there are racial differences in the association between PD frequency and mental health outcomes, and particularly STB frequency between non-Latino White and AA children. As for children, all types of stressors are more common for AAs than non-Latino Whites,45 so it is likely that AA and non-Latino White children differ in the correlation between stressors such as PD and mental health outcomes such as STB frequency.⁴⁶

Understanding if race alters the correlation between different types of stressors such as PD and STB frequency is important because such information may have public health and clinical utility and implications. Such knowledge could potentially improve clinicians' ability to address suicide treatment.⁴⁷ It may also help public health experts develop more effective suicide prevention, diagnosis, and screening tools for each subsection of children. Such results may inform policies, practices, and interventions that can target racial subgroups and focus on those most vulnerable to STB frequency. The information on STB frequency' racial differences may help tailor suicide prevention programs for diverse populations.³⁹ Still, we know almost nothing about race as a factor that may alter the frequency of STB risk factors.48

1.1. Objectives

To improve the existing literature on racial variation in the association between PD and STB frequency among American children, we compared AA and non-Latino White children for the association between PD and childhood STB frequency in a national sample of 9/10-yearold American children.

2. Methods

This cross-sectional study is a secondary analysis of the ABCD study data. 49,50 The analysis only used wave 1 (baseline) data.

The ABCD study has included children between the ages of 9 and 10, who have been enrolled from multiple cities across multiple states. Children were recruited into the ABCD study from 21 sites across 15 states. The primary strategy for sampling in the ABCD study was sampling through school systems.⁵¹ In the current study, we only included non-Latino Whites and AAs. We excluded children who were Hispanic, Latino, or any other racial and ethnic backgrounds other than non-Latino White and AA (Individuals with multiple racial and ethnic groups or mixed racial categories were also excluded).

The children's STB frequency (at baseline) were calculated based on participants' responses to the items on various aspects of STB frequency (Table 1).52,53 STB frequencies were treated as a count measure that potentially ranged from 0 to 22. This STB frequency variable (sum score) had a Cronbach alpha of 0.70.

Table 1. The ABCD's Suicide, Trauma, and Discrimination Measure

Suicidality

Symptom 1 - Suicidal Ideation, Present

Symptom 2 - Suicidal Ideation, Past

Symptom 3 - Suicidal Attempt, Present

Symptom 4- Self-injury, intent to die, Present

Symptom 5- Self-Injury, thought could die from behavior, Present

Symptom 6- Suicidal ideation thought of method, Present

Symptom 7- Suicidal ideation, intent to act, Present

Symptom 8- Suicidal ideation, specific plan, Present

Symptom 9- Suicidal behavior, made preparations, Present

Symptom 10- Aborted or interrupted suicide attempts, Present

Symptom 11- Method of actual suicide attempt, Present

Symptom 12- Suicide attempt, thought could die, Present

Symptom 13- Self-injury, intent to die, Past

Symptom 14- Self-Injury, thought could die from behavior, Past

Symptom 15- Suicidal ideation thought of method, Past

Symptom 16- Suicidal ideation, intent to act, Past

Symptom 17- Suicidal ideation, specific plan, Past

Symptom 18- Suicidal behavior, made preparations, Past

Symptom 19- Aborted or interrupted suicide attempts, Past

Symptom 20- Number of suicide attempts, Past

Symptom 21- Suicide attempt, method, Past

Symptom 22- Expect could die from suicide attempt, Past

Discrimination

In the past 12 months, have you felt discriminated against: because of your race, ethnicity, or color? Definition of ethnicity: groups of people who have the same customs, or origin

In the past 12 months, have you felt discriminated against: because you are (or your family is) from another country?

In the past 12 months, have you felt discriminated against: because someone thought you were gay, lesbian, or bisexual?

In the past 12 months, have you felt discriminated against: because of your weight?

How often do the following people treat you unfairly or negatively because of your ethnic background? Teachers:

How often do the following people treat you unfairly or negatively because of your ethnic background? Other adults outside school:

How often do the following people treat you unfairly or negatively because of your ethnic background? Other students:

I feel that others behave in an unfair or negative way toward my ethnic group:

I feel that I am not wanted in American society:

I don't feel accepted by other Americans:

I feel that other Americans have something against me:

Economic Stress

Needed food but could not afford to buy it or could not afford to go out to get it?

Were without telephone service because you could not afford it?

Did not pay the full amount of the rent or mortgage because you could not afford it?

Were evicted from your home for not paying the rent or mortgage?

Had services turned off by the gas or electric company, or the oil company would not deliver oil because payments were not made?

Had someone who needed to see a doctor or go to the hospital but did not go because you could not afford it?

Had someone who needed a dentist but could not go because you could not afford it?

Trauma

A car accident in which your child or another person in the car was hurt bad enough to require medical attention

Another significant accident for which your child needed specialized and intensive medical treatment

Witnessed or caught in a fire that caused significant property damage or personal injury

Witnessed or caught in a natural disaster that caused significant property damage or personal injury

Witnessed or present during an act of terrorism (e.g., Boston marathon bombing)

Witnessed death or mass destruction in a war zone

Witnessed someone shot or stabbed in the community

Shot, stabbed, or beaten brutally by a non-family member

Shot, stabbed, or beaten brutally by a grown up in the home

Beaten to the point of having bruises by a grown up in the home

A non-family member threatened to kill your child

Family member threatened to kill your child

Witness the grownups in the home push, shove or hit one another

A grown up in the home touched your child in his or her privates, had your child touch their privates, or did other sexual things to your child

An adult outside your family touched your child in his or her privates, had your child touch their privates or did other sexual things to your child

A peer forced your child to do something sexually

Learned about the sudden unexpected death of a loved one

2.1. Moderators

Sex and race were the predictors. For sex, males were coded as 1, and females were coded as 0. For race, AAs were coded as 1, and non-Latino Whites were coded as 0. As such, the interaction term was 1 for AA males.

2.2. Predictors

The predictor variable was PD, measured using the items as

measured in Table 1. This measure provides a continuous score with a higher score indicating higher perceived discrimination.

2.3. Covariates

Covariates included age, sex, parental education, household income, family structure, parental employment, economic stress, and trauma. Age was recorded in months. Parental

education was a continuous measure ranging from 1 to 23, with a higher score indicating more schooling years. Codes of education variable were: 0=Never attended/ Kindergarten only; 1=1st grade; 2=2nd grade; 3=3rd grade; 4=4th grade 4; 5=5th grade; 6=6th grade 6; 7=7th grade 7; 8=8th grade; 9=9th grade; 10=10th grade 10; 11 = 11th grade; 12 = 12th grade; 13 = high school graduate; 14=GED or equivalent diploma; 15=some college; 16 = associate degree: occupational; 17 = associate degree: academic program; 18=bachelor's degree (ex. BA; 19 = master's degree (ex. MA; 20 = professional school degree (ex. MD; 21 = doctoral degree. Household income was a continuous measure ranging from to 10, as bellow: 1 = Less than \$5000; 2 = \$5000; 3 = \$12,000; 4 = \$16,000;5 = \$25,000;6 = \$35,000;7 = \$50,000;9 = \$100,000; 10 = \$200,000.

2.4. Data Analysis

SPSS 23.0 was used to analyze the data. Data was downloaded from the National Institute for Health (NIH) National Data Archive (NDA) website. Mean (standard deviation; SD) and frequency (relative frequency; %) of all variables were described overall and for each race. We used independent samples t-test and chi-square tests to compare the study variables among races. For multivariable modeling, we ran Poisson regression models. As participants were nested to families who were nested to sites, we calculated the intra-class correlation for our outcome. Our calculation showed a less than 0.05 intraclass correlation, which is minimal. As such, we did not apply mixed-effect or random effect models. The predictor variable was PD. The moderator was race. The outcome variable was STB frequency, treated as a count variable, reflecting positive suicidal items endorsed. Covariates included sex, age, marital status, household income, parental education, parental employment, trauma, and economic difficulties. Multiple Poisson regression models were performed in the pooled sample in the absence and presence of PD by race interaction. Before we perform our models, we ruled out multi-collinearity between the study variables. We also explored the distribution of our predictors (a), outcomes (b), residuals (c), and quantiles (d). Beta coefficient (b), 95% confidence intervals (CI), standard error (SE), and P value were reported for our model. A P value of equal or less 0.05 was significant.

3. Results

3.1. Descriptive Data overall

This study included 7883 non-Latino White or AA children between the ages of 9 and 10. Of all participants, 5994 were non-Latino Whites, and 1889 were AAs. Additionally, 240 of the child participants had some STB frequency history (Table 2).

3.2. Descriptive Data by race

Table 2 summarizes the descriptive data by race. While age and sex did not differ across groups, parental education

was lower in AA than in non-Latino White children. STB frequency was also higher in AA than non-Latino White children.

3.3. Pooled Sample Models

In the pooled sample and the absence of any interaction, PD was positively associated with STB frequency, an association that remained significant while confounders were controlled (Model 1). There was an interaction between race and PD in the next model, suggesting a weaker association in AA than in non-Latino White children (Model 2) (Table 3).

3.4. Race-Specific Models

We found that high PD was associated with higher STB frequency for AA and non-Latino White children. However, B was larger for non-Latino White than AA children (Table 4).

4. Discussion

The aim of this study was to explore racial variation in the association between PD and STB in US children. We found that in a national sample of children, race and PD have interactive rather than additive effects on STB frequency. The link between PD and STB frequency seems to be stronger for non-Latino White than AA children. That means factors other than PD may have more important

Table 2. Descriptive Statistics Overall and by Race

	A n=7		Non-H Wh n=5	ite	African American n=1889		
	Mean	SD	Mean	SD	Mean	SD	
Age (y)	9.49	0.50	9.47	0.51	9.49	0.51	
Parental education	17.59	1.96	15.39	2.59	17.06	2.32	
Income	8.21	1.64	5.27	2.70	7.55	2.28	
Economic stress	0.25	0.81	1.01	1.50	0.43	1.07	
Trauma (n)	0.47	1.12	0.69	1.07	0.52	1.11	
Family conflict	0.69	0.98	0.90	1.14	0.74	1.03	
PD	1.13	0.33	1.37	0.61	1.19	0.43	
	n	%	n	%	n	%	
Gender							
Female	2814	46.9	944	50.0	3758	47.7	
Male	3180	53.1	945	50.0	4125	52.3	
Parents employed							
No	1610	26.9	614	32.5	2224	28.2	
Yes	4384	73.1	1275	67.5	5659	71.8	
Parents married							
No	1047	17.5	1289	68.2	2336	29.6	
Yes	4947	82.5	600	31.8	5547	70.4	
STB frequency (any) *							
No	5754	96.0	1786	94.5	7540	95.6	
Yes	240	4.0	103	5.5	343	4.4	

STB: Suicidal Thoughts and Behaviors.

*P < 0.05

Table 3. Association Between Suicidal Thoughts and Behaviors Frequency in American Children by Race

	All (M1)					All (M1 + Interactions)					
	В	SE	95% CI		P	В	SE	95% CI		P	
Race [African American]	-0.191	0.1090	-0.404	0.023	0.080	0.484	0.1989	0.094	0.874	0.015	
Gender [male]	0.296	0.0824	0.134	0.457	< 0.001	0.307	0.0824	0.146	0.469	< 0.001	
Family structure [Married]	-0.416	0.1046	-0.621	-0.211	< 0.001	-0.409	0.1041	-0.613	-0.205	< 0.001	
Parental employment [Employed]	-0.106	0.0910	-0.284	0.072	0.244	-0.111	0.0910	-0.289	0.068	0.224	
Age (y)	0.198	0.0784	0.044	0.352	0.012	0.196	0.0779	0.043	0.349	0.012	
Parental education	0.028	0.0224	-0.016	0.072	0.211	0.031	0.0223	-0.013	0.075	0.164	
Household income (1-10)	-0.023	0.0256	-0.073	0.027	0.370	-0.022	0.0254	-0.072	0.028	0.385	
Economic stress	0.156	0.0302	0.097	0.215	< 0.001	0.148	0.0302	0.089	0.207	< 0.001	
Trauma (n)	0.078	0.0214	0.036	0.120	< 0.001	.071	0.0218	0.028	0.113	0.001	
Family conflict	0.204	0.0336	0.138	0.270	< 0.001	00.205	0.0337	0.139	0.271	< 0.001	
Perceived discrimination	0.552	0.0551	0.444	0.660	< 0.001	0.754	0.0677	0.621	0.886	< 0.001	
Perceived discrimination x race [AA]							0.1093	-0.649	-0.220	< 0.001	

AA: African American.

Table 4. Association Between Perceived Discrimination and Suicidal Thoughts and Behaviors Frequency in American Children by Race

	В	SE	SE 95% CI		P	В	SE	95% CI		P	
		Non-Latino White					AA				
Gender [male]	0.526	0.1025	0.325	0.727	< 0.001	-0.173	0.1447	-0.457	0.111	0.232	
Family Structure [Married]	-0.550	0.1206	-0.786	-0.314	< 0.001	-0.029	0.1766	-0.375	0.317	0.868	
Parental employment [Employed]	-0.035	0.1103	-0.251	0.182	0.754	-0.314	0.1653	-0.638	0.010	0.057	
Age (y)	0.006	0.0943	-0.179	0.190	0.953	0.651	0.1440	0.369	0.934	< 0.001	
Parental education	0.018	0.0277	-0.036	0.073	0.511	0.035	0.0362	-0.036	0.106	0.332	
Income (1-10)	-0.069	0.0322	-0.132	-0.006	0.032	0.050	0.0404	-0.030	0.129	0.219	
Economic stress	0.144	0.0427	0.060	0.228	0.001	0.123	0.0443	0.037	0.210	0.005	
Trauma (n)	0.057	0.0257	0.007	0.108	0.025	0.123	0.0507	0.024	0.223	0.015	
Family conflict	0.147	0.0431	0.062	0.231	0.001	0.321	0.0561	0.211	0.431	< 0.001	
Perceived discrimination	0.706	0.0704	0.568	0.845	< 0.001	0.402	0.0891	0.228	0.577	< 0.001	

AA: African American.

roles as risk factors of STB frequency for AA children, as PD has more salient role for non-Latino White than AA children STB frequency.

Our first finding that PD correlates with STB frequency in the overall sample is in line with past research showing that various types of stressors correlate with undesired mental health outcomes such as STB frequency.⁵⁴⁻⁵⁶ Stress in general,⁵⁷ and PD in particular,⁵⁸ correlate with STB frequency in children and adults. There are multiple previous studies showing that PD predicts STB frequency across age groups.^{34,58}

We found that PD may more strongly deteriorate the mental health of non-Latino White than AA children. This finding is in line with the minorities' diminished returns (MDRs)⁵⁹⁻⁶¹ suggesting that individual-level determinants of health may have weaker effects on physical and mental health outcomes for AA than non-Latino White individuals. This is in part because under racism, segregation, and social stratifications, physical and mental health outcomes are also under the influence of contextual factors that may reduce choices and individual-level variations. Our past work on the MDRs phenomenon has

provided strong evidence that changes in predictors result in smaller changes in physical and mental health outcomes in AA the White communities. Racism, stratification, and segregation are not much relevant to the health of non-Latino Whites, for whom individual-level factors show more potent effects. 62-65

This study established differential effects of PD on STB frequency of AA and non-Latino White children. Previous studies have shown differences between non-Latino White and AAs in risk and protective factors that correlate with STB frequency. In a study, parental educational attainment showed a larger protective effect for non-Latino Whites than AAs.66 In line with MDRs, family-SES indicators may lose some of their strength in the presence of social stratification and structural racism. 59,67 Under racism, AA families continue to experience high levels of stress, regardless of their SES. For non-Latino White families, however, high SES means low stress across domains.⁶¹ In another study, health needs of AAs and non-Latino Whites with STBs were highly different.⁶⁸ As a result, there is a need for intersectional research on STBs research as well as intervention and program planning.69

Knowledge regarding AA and non-Latino White differences in risk factors of STB frequency may have implications for prevention and detection of STBs through public health and policy practices in racially diverse children. Researchers, clinicians, and practitioners should never assume that one size fits all. Our findings suggests that PD may be more relevant to non-Latino Whites' than AAs' STB frequency in children. It is essential to tailor our interventions, programs, and services for racial and ethnic groups, simply because racial differences exist in correlates of STB frequency in children.⁶⁹ Joe's review has shown that almost no evidence-based STB prevention or treatment program exists for racial groups such as AAs.70

The results are important because STB frequency has recently increased in AA children and youth.⁷¹ Our observation that we need contributors to AA youth STB which goes beyond PD may be helpful for future research on the causes of the recent increase of STBs in AA children and youth. With a large diverse sample size, ABCD has provided an opportunity to investigate intersectional differences in risk and protective factors of STBs in US children. Unfortunately, intersectional differences in these effects are overlooked.

The recent increases in AA children's STB is concerning.⁷² The traditional and historical assumption that STBs are higher in non-Latino Whites and that AA children do not need STB prevention is not accurate. More recent trends suggest AA children are not at a lower risk of STB than non-Latino White children.⁷² Similarly, in the ABCD study, AA children have shown higher STBs than non-Latino White children. This study provides an excellent opportunity to study how brain pathways explain the effects of social environment on STBs in AA and non-Latino White children.73-75

4.1. Limitations

This study has multiple limitations. The first limitation is a cross-sectional design. As such, we cannot draw causal inferences. Another limitation is the limited range of covariates and confounders. Several factors may correlate both with PD and STB frequency including but not limited to disability, sexual orientation, gender identity, nationality, religion, and social class. Other factors such as history of depression and anxiety of alcohol and drug use may also correlate with both but may mediate the effects of PD on STB. As such, we intentionally did not correlate for mental health outcomes or behaviors that could be over adjustment.76 The ABCD sample is national, however, it is not a random sample. Therefore, the results are not fully generalizable to the US children. Finally, we did not include other racial and ethnic minorities. Future research may also include Latinos, Asian Americans, and Native Americans.

5. Conclusion

Among American children, racial differences exist in the association between PD and STB frequency, in that the

Research Highlights

What Is Already Known?

- PD is a risk factor of STB for children.
- Higher exposure to perceived discrimination is associated with higher STB in children.

What Does This Study Add?

- Perceived discrimination is a risk factor of STB for
- What is common becomes normal. AA children who frequntly experience discrimination may have a higher preparedness and show lower mental health consequences of discrimination.
- White children who are less likely to experience discrimination are not prepared and show negative consequences when thye face discrimination.
- Studies on suicidality of AA children should go beyond interpersonal discrimintion and investigate structural factors that contribute to suicidality of AA children.

role of PD as a correlate of STB frequency is stronger in non-Latino White than AA children. More research is needed on the complex interplays between race, PD, other stressors, SES, psychopathology, parental history of STB frequency, and children STB.

Conflict of Interest Disclosures

The author declares no conflict of interests.

Ethical Approval

The ABCD study protocol received an Institutional Review Board (IRB) approval from several institutions, including but not limited to the University of California, San Diego (UCSD). All participating children provided assent. All participating parents signed an informed consent.⁷⁷ Our study was exempt from a full IRB review (IRB Number = 1761826-1).

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