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Parents' Perceived Neighborhood Safety and Children's Internalizing Symptoms: Race and Socioeconomic Status Differences

Shervin Assari^{*1,2}, MD, MPH

¹Department of Family Medicine, Charles R Drew University of Medicine and Science, Los Angeles, CA, USA

²Department of Urban Public Health, Charles R Drew University of Medicine and Science, Los Angeles, CA, USA

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*Correspondence:

Shervin Assari, MD, MPH, Department of Family Medicine; Department of Urban Public Health, Charles R Drew University of Medicine and Science, Los Angeles, CA, USA; Telephone Number: +(734)-232-0445; Fax Number: +734-615-8739; Email: assari@umich.edu.

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Abstract

Background: In the United States, due to residential segregation, racial minorities and families with low socioeconomic status (SES) tend to live in less safe neighborhoods than their White and high SES counterparts. As such, in the US, race and SES closely correlate with neighborhood safety. Due to the high chronicity of stress in unsafe neighborhoods, perceived neighborhood safety may be a mechanism through which race and SES are linked to children's mental health. Simultaneously, race and SES may alter the effects of perceived neighborhood safety on children's mental health.

Aim: To explore racial and SES differences in the effects of neighborhood safety on children's internalizing symptoms, we compared racially and SES diverse groups of American children for the effects of parents' perceived neighborhood safety on children's internalizing symptoms.

Methods: This cross-sectional study included 10484 children from the Adolescent Brain Cognitive Development (ABCD) study. Mixed-effects regression was used for data analysis. The predictor variable was parents' perceived neighborhood safety which was treated as a continuous measure. The primary outcome was children's internalizing symptoms reported by children. Race, parental education, household income, and family structure were moderators.

Results: Overall, the parents' high neighborhood safety was associated with lower levels of internalizing symptoms in children. Race and household income showed statistically significant interactions with subjective neighborhood safety on children's internalizing symptoms. Parents' perceived neighborhood safety showed a stronger inverse association with children's internalizing symptoms for Black than White families. Parents' perceived neighborhood safety showed a stronger inverse association with children's internalizing symptoms for high-income than low-income families. Parental education or family structure did not show any significant interaction with parents' perceived neighborhood safety on children's internalizing symptoms.

Conclusion: The degree to which neighborhood safety may be associated with children's internalizing symptoms may depend on race and household income. Some of the effects of race and SES on children's mental health outcomes may be due to interactions with contextual factors such as neighborhood safety. More research is needed on why and how diverse racial and SES groups differ in the association between perceived neighborhood safety and children's well-being.

Introduction

Significant racial and socioeconomic status (SES) gaps exist in American children's internalizing symptoms¹⁻⁸. For example, children from Black families and low SES backgrounds remain at a higher risk of internalizing symptoms than White and high SES children^{4,8,9}.

As childhood internalizing symptoms are predictors of later substance use, poor academic performance, obesity, chronic disease, and low quality of life, there is an interest in studying social factors that contribute to racial and SES variation in internalizing symptoms among children¹⁰⁻¹⁹. Such results may help us eliminate subsequent inequalities later in life by early interventions in children's lives²⁰⁻²³.

In the United States (US), race, SES, and place (e.g., neighborhood safety) closely overlap²⁴⁻²⁶. Due to low SES and living in less safe neighborhoods, racial minority and low SES children experience poor access to educational resources and higher levels of economic, housing, and food insecurity, as well as neighborhood stress^{7,27-29}. As such, at least some of the racial and SES gaps in internalizing symptoms may be due to racial and SES gaps in neighborhood characteristics such as perceived neighborhood safety³⁰⁻³².

Above and beyond race and SES, a wide range of neighborhood characteristics, including but not limited to perceived neighborhood safety^{9,32-39}, correlate with children's emotional outcomes⁴⁰⁻⁴³. White and higher SES children reside in safer neighborhoods, have access to more resources, experience less neighborhood stress, and as a result, may show higher emotional development⁴⁰⁻⁴³. As such, neighborhood characteristics such as perceived neighborhood safety may operate as an underlying mechanism that generates emotional, behavioral, and developmental inequalities across diverse racial and SES groups of children⁴⁴⁻⁴⁶. Families with low SES backgrounds and those in unsafe neighborhoods may be less likely to engage in positive parenting, which has lasting effects on children's emotional and cognitive development⁴⁷⁻⁴⁹. Children from White and high SES families are more likely to live in safe neighborhoods and attend high-quality schools with many educational resources and highly skilled teachers⁵⁰⁻⁵². Such stimulating environments further promote White and high SES children's emotional development across domains⁵³. Low SES Black children attend low-resource unsafe schools that further deteriorate their emotional and behavioral well-being⁵⁴⁻⁵⁸. All these mechanisms may explain why we observe strong links between race and SES with poor children's emotional and behavioral development, along with links between neighborhood and school risk with poor children's emotional and behavioral development⁵⁹⁻⁶³.

While various aspects of the physical and social environment may all influence children's emotional and behavioral development, research has shown different effects of subjective and objective indicators of neighborhood safety on emotional and health outcomes⁶⁴. However, very few studies have tested differential effects of subjective neighborhood safety on children's emotional outcomes across diverse racial and SES groups. While

objective aspects of the environment reflect actual crime rates and other environmental safety measures⁶⁵⁻⁶⁸, subjective neighborhood safety carries another type of information that may influence children's health and behaviors^{9,69-72}. As such, there is a need to study how subjective aspects of the neighborhood, such as perceived neighborhood safety, contribute to racial and SES inequalities in internalizing symptoms of children⁴⁰⁻⁴³. There is very limited knowledge on whether subjective and objective proxies of neighborhood safety differently correlate with children's developmental outcomes across racial and SES groups⁷³⁻⁷⁵, particularly while family SES indicators such as income and parental education are controlled^{64-66,68,76,77}. Different population groups may respond differently to distress and insecurity due to lack of neighborhood safety, neighborhood stress, fear of violence, or even exposure to trauma^{78,79}.

Recent research suggests that social groups, particularly racial groups, widely differ in their sensitivity to SES⁸⁰⁻⁸⁵ as well as neighborhood characteristics^{86,87}. We know that family SES such as parental education and household income, impact children's development across domains⁸⁸. Recent research shows that these effects may differ across racial and SES groups⁸⁰⁻⁸⁵. To have a comprehensive understanding of children's exposure to stress, there is a need to study how neighborhood safety influences diverse racial and SES groups. Complementary to the effects of family SES, parents' subjective neighborhood safety can reflect how parents and family allow the child to be engaged in the community and neighborhood and to what degree the child becomes exposed to neighborhood stress. Still, there is a need to extend this literature to test the multiplicative effects of race, SES, and subjective neighborhood safety on child development⁸⁹⁻⁹¹. Thus, there is a need for studies that compare diverse racial and SES groups for the effects of subjective environmental safety on children's internalizing symptoms^{79,92}.

Aims

To enhance the existing knowledge on the topic of race, SES, neighborhood safety, and children's emotional outcomes in the US, we conducted this study with three aims. First, to test the association between parents' subjective neighborhood safety and children's internalizing symptoms in a large national sample of 9-10 year old children. Second, we compared children's racial and SES groups for the associations between parents' subjective neighborhood safety and children's internalizing symptoms. Third, we aimed to test if racial differences in the effect of perceived neighborhood safety on children's internalizing symptoms are due to the differential family income. We expected protective effects of parents' subjective neighborhood safety on children's internalizing symptoms^{57,93,94}. However, we expected this

association to differ between diverse racial groups of children. We also expected the observed racial differences to be due to differential family income.

Methods

Design

This is a secondary analysis of wave 1 data of the Adolescent Brain Cognitive Development (ABCD) study⁹⁵⁻⁹⁹, a landmark children's brain development study in the US. More nuanced data on the details of the ABCD study is available here^{95,100}. The ABCD study's baseline data collection occurred between the years 2016 and 2018.

Sampling

In the ABCD study, participants were limited to 9-10 years old children who were recruited from multiple cities across several states. In total, there were 21 ABCD centers that were involved in the recruitment of the children. The main strategy to recruit participants to the ABCD study was to focus on the US school system¹⁰¹. The current analysis's eligibility criteria included valid data on race, demographic factors, SES, neighborhood safety, and internalizing symptoms ($n = 10484$).

Study Variables

The study variables included race (moderator), age, sex, parental education, household income, family marital status (confounders), subjective neighborhood safety (independent variable), and children's internalizing symptoms (dependent variable).

Demographic and Socioeconomic Confounders

Age, sex, ethnicity, parental education, household income, and parental marital status were the confounders. Parents were asked to report the age of their children. Age was a continuous variable, measured in months. Sex was a dichotomous variable with 1 for males and 0 for females. Ethnicity was reported by parents and was a dichotomous variable: 1 for Hispanic and 0 for non-Hispanic.

Primary Outcome

Children's Internalizing Symptoms: We used the Child Behavior Checklist (CBCL)¹⁰² to measure internalizing symptoms in children. The CBCL¹⁰³⁻¹⁰⁸, also known as the Achenbach System of Empirically Based Assessment, generates eight outcomes, including internalizing symptoms. The CBCL internalizing symptoms closely correlate with the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) based diagnosis of depression and conduct disorder¹⁰³⁻¹⁰⁸. The CBCL instrument uses parental reports to screen for emotional and behavioral problems in children. The CBCL is one of the most commonly used measures of child

psychopathology and has been implemented in schools, medical settings, mental health facilities, child and family services, Health Management Organizations, and public health agencies¹⁰³⁻¹⁰⁸. CBCL has been used by thousands of published scholarly articles¹⁰³⁻¹⁰⁸.

Independent Variables

Parents' Subjective Neighborhood Safety: Parents reported their sense of community safety. These items are developed by Diez Roux and colleagues¹⁰⁹. Items included "I feel safe walking in my neighborhood, day or night.", "Violence is not a problem in my neighborhood.", and "My neighborhood is safe from crime." These questions were administered in two languages: English and Spanish. Responses were 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral (neither agree nor disagree)/ Neutral; 4 = Agree; 5 = Strongly Agree. We calculated the mean of the three items¹⁰⁹. This variable was treated as a continuous variable¹⁰⁹. A higher score denoted higher neighborhood safety.

Moderators

Race: Race was self-identified by the parents. Race was a categorical variable White, Black, Asian, and other race/mixed.

Household Income: Household income was a three-level categorical variable: Less than 50K, 50-100K, and 100K+, as reported by the parent.

Parental Education: Parental education was a categorical variable: less than high school, high school completed, some college, Bachelor's degree, and postgraduate studies.

Family Structure: Parental marital status was equal to 1 for married and equal to 0 for unmarried.

Data Analysis

We used the Data Analysis and Exploration Portal (DEAP) for data analysis. DEAP is a statistical package specifically designed for the analysis of ABCD data. Mean, standard deviation (SD), frequency, and relative frequency were reported. We performed the analysis of variance (ANOVA) and a Chi-square test to test group differences in the association between race and our study variables. We also ruled out multi-collinearity between our study variables. Error terms showed near to normal distribution. We applied mixed-effects linear regression models for our multivariable models to adjust for nesting of participants to families and sites. All our regression models were performed in the overall sample. For our analyses, we used the propensity score to generate the results that are representative of the US. We ran similar series of models for testing the following moderators: 1) race, 2) household income, 3) parental education, and 4) family structure. Our *Model 1* did not have the interaction terms. Our *Model 2* added interaction terms between race, household income, parental education, family

structure and subjective neighborhood safety. When we tested the role of race as the moderator, our *Model 3* also controlled for household income. From our models, we reported *b*, standard error (SE), and *p* values. A *p* less than 0.05 was considered statistically significant.

Ethical Aspect

This analysis was exempted from a full Institutional Review Board (IRB) review by Charles R Drew University of Medicine. The mother study (ABCD), however, was approved by the Institutional Review Board (IRB) at the University of California, San Diego (UCSD). Assent and consent were received from children and their parents, respectively¹⁰⁰.

Results

Descriptives

Table 1 shows that 10484, 9-10-year-old children were

included in the current analysis. From this number, Whites were the majority followed by Other/Mixed and Black. Only a small minority were Asian. Subjective neighborhood safety was lowest in Black and Other/Mixed race parents (*p* < 0.05). Asian and White families had the highest parental education and household income, and Black and Other/Mixed race families had the lowest parental education and household income (*p* < 0.05). Asian American children had lower internalizing symptoms compared to other racial groups (*p* < 0.05).

Multivariate Analysis

Table 2 provides the fit of our regression models. In Table 3, three linear regression models report the association of interest between subjective neighborhood safety and internalizing symptoms in the overall (pooled) sample. *Model 1* (Main Effect of Race) showed that high subjective neighborhood safety was associated with lower

Table 1. Descriptive data overall and by race

level	Overall	White	Black	Asian	Other/Mixed	p						
n	10484	7376	1762	266	1967							
	Mean(SD)	Mean(SD)	Mean(SD)	Mean(SD)	Mean(SD)	Mean(SD)						
Age (Months)	118.96 (7.47)	119.22(7.48)	119.04 (7.50)	119.31(7.51)	118.86 (7.27)	119.15(7.28)	119.53 (7.74)	119.77(7.74)	118.71 (7.49)	118.84(7.55)	0.189	0.135
Internalizing Symptoms	48.15 (10.54)	48.75(10.79)	48.12 (10.06)	48.87(10.41)	47.57 (11.66)	47.73(11.86)	44.66 (9.20)	44.89(9.12)	49.08 (11.23)	49.66(11.49)	< 0.001	< 0.001
Subjective Neighborhood Safety	3.92 (0.96)	3.89(0.97)	4.08 (0.85)	4.04(0.88)	3.31 (1.13)	3.27(1.14)	4.02 (0.92)	4.01(0.91)	3.72 (1.01)	3.63(1.05)	< 0.001	< 0.001
	N(%)	%	N(%)	%	N(%)	%	N(%)	%	N(%)	%		
Parental Education												
< HS Diploma	384 (3.7)	(4.6)	199 (2.7)	(3.6)	149 (8.5)	(9.6)	7 (2.6)	(2.5)	138 (7.0)	(10.1)	< 0.001	< 0.001
HS Diploma/ GED	865 (8.3)	(9.9)	380 (5.2)	(6.8)	430 (24.4)	(26.6)	4 (1.5)	(1.9)	225 (11.4)	(16.1)		
Some College	2690 (25.7)	(30.0)	1574 (21.3)	(26.9)	698 (39.6)	(40.9)	18 (6.8)	(7.3)	664 (33.8)	(39.3)		
Bachelor	2787 (26.6)	(25.1)	2167 (29.4)	(27.8)	252 (14.3)	(12.8)	75 (28.2)	(29.3)	452 (23.0)	(18.8)		
Post Graduate Degree	3758 (35.8)	(30.4)	3056 (41.4)	(34.9)	233 (13.2)	(10.0)	162 (60.9)	(59.0)	488 (24.8)	(15.7)		
Married Family												
No	3184 (30.4)	(37.1)	1571 (21.3)	(29.6)	1241 (70.4)	(76.9)	37 (13.9)	(15.4)	761 (38.7)	(48.0)	< 0.001	< 0.001
Yes	7300 (69.6)	(62.9)	5805 (78.7)	(70.4)	521 (29.6)	(23.1)	229 (86.1)	(84.6)	1206 (61.3)	(52.0)		
Sex												
Female	5031 (48.0)	(49.0)	3461 (46.9)	(47.9)	892 (50.6)	(51.7)	138 (51.9)	(52.4)	960 (48.8)	(50.2)	0.016	0.043
Male	5453 (52.0)	(51.0)	3915 (53.1)	(52.1)	870 (49.4)	(48.3)	128 (48.1)	(47.6)	1007 (51.2)	(49.8)		
Hispanic												
No	8505 (81.1)	(77.6)	6058 (82.1)	(79.1)	1678 (95.2)	(92.7)	245 (92.1)	(95.5)	1147 (58.3)	(44.3)	< 0.001	< 0.001
Yes	1979 (18.9)	(22.4)	1318 (17.9)	(20.9)	84 (4.8)	(7.3)	21 (7.9)	(4.5)	820 (41.7)	(55.7)		
Family Income												
< 50K	3008 (28.7)	(38.1)	1264 (18.2)	(28.6)	1004 (66.1)	(74.9)	37 (15.9)	(19.7)	703 (39.5)	(54.9)	< 0.001	< 0.001
> =50K & < 100K	3000 (28.6)	(31.4)	2120 (30.5)	(34.6)	338 (22.2)	(19.1)	53 (22.7)	(29.5)	489 (27.5)	(27.7)		
> =100K	4476 (42.7)	(30.5)	3569 (51.3)	(36.8)	178 (11.7)	(6.0)	143 (61.4)	(50.8)	586 (33.0)	(17.4)		

Table 2. Model fit

	Model 1 Main Effect of Race and Parental Education and Income	Model 2 Moderating Effect of Race without Income	Model 3 Moderating Effect of Race without Income	Model 4 Main Effect of Household Income and Race without Parental Education	Model 5 Moderating Effect of Household Income
N	10484	10484	11371	10496	10496
R-squared	0.03693	0.03729	0.03164	0.03394	0.03394
ΔR-squared	0.00793 (0.79%)	0.01469 (1.47%)	0.01553 (1.55%)	0.02128 (2.13%)	0.02128 (2.13%)

Table 3. Summary of mixed-effects regressions on the association between subjective neighborhood safety and children's internalizing symptoms overall and by race

	Model 1				Model 2				Model 3			
	B	SE	p	Sig	B	SE	p	Sig	B	SE	p	Sig
Neighborhood safety	-0.91	0.10	< 0.001	** *	-0.77	0.12	< 0.001	** *	-0.78	0.12	< 0.001	** *
Race(Black)	-2.52	0.35	< 0.001	** *	-0.85	0.90	0.342		-1.16	0.96	0.226	
Race(Asian)	-2.97	0.61	< 0.001	** *	-0.01	2.03	0.996		-1.78	2.21	0.419	
Race(Mixed/Other)	0.04	0.27	0.897		1.98	0.92	0.030	*	1.57	0.96	0.103	
Parental education (HS Diploma/GED)	-1.13	0.67	0.091	#	-1.03	0.55	0.058	#	-1.11	0.67	0.096	#
Parental education (Some College)	0.82	0.61	0.180		0.58	0.51	0.253		0.83	0.61	0.173	
Parental education (Bachelor)	-0.17	0.65	0.792		-0.80	0.53	0.134		-0.15	0.65	0.813	
Parental education (Post Graduate Degree)	-1.00	0.66	0.131		-1.95	0.53	0.000	** *	-0.96	0.66	0.144	
Married family	-0.96	0.27	0.000	** *	-1.70	0.25	< 0.001	** *	-0.96	0.27	0.000	** *
Age (Month)	-0.02	0.01	0.001	** *	-0.02	0.01	< 0.001	** *	-0.02	0.01	0.001	** *
Sex (Male)	0.10	0.12	0.414		0.09	0.12	0.465		0.09	0.12	0.459	
Hispanic	-1.03	0.31	0.001	** *	-0.78	0.29	0.008	** *	-1.01	0.31	0.001	** *
Race(Black) x Neighborhood safety	-	-	-	-	-0.48	0.24	0.044	*	-0.37	0.25	0.146	
Race(Asian) x Neighborhood safety	-	-	-	-	-0.60	0.49	0.218		-0.29	0.52	0.574	
Race(Mixed/Other) x Neighborhood safety	-	-	-	-	-0.48	0.23	0.035	*	-0.40	0.24	0.099	#
Household income (> =100K)	-2.37	0.36	< 0.001	** *	-	-	-	-	-2.34	0.36	< 0.001	** *
Household income (> =50K & < 100K)	-0.60	0.31	0.056	#	-	-	-	-	-0.56	0.31	0.072	#

#p<0.1 *p<0.05 **p<0.01 ***p<0.001

internalizing symptoms in children. *Model 2* (Interaction of Race and Neighborhood Safety) showed statistically significant interactions between the effects of race and subjective neighborhood safety on children's internalizing symptoms, suggesting that the effect of high subjective neighborhood safety on internalizing symptoms is larger for Black and Other/Mixed race than White children. However, these interactions could be explained by household income in *Model 3* (Table 3).

In Figure 1-a, there was an overall inverse association between subjective neighborhood safety and internalizing symptoms. As shown by Figure 1-b, the effects of high subjective neighborhood safety on internalizing symptoms were larger for Black and other non-White children than White children. Figures 1-c to 1-f show our association across racial groups.

Multivariate Analysis

In Table 4, two mixed-effects linear regression models report the association of interest between subjective neighborhood safety and internalizing symptoms in the overall (pooled) sample. *Model 4* (Main Effect) showed that high subjective neighborhood safety was associated with lower internalizing symptoms in children. *Model 5* (Interaction of Income and Neighborhood Safety) showed a statistically significant interaction between the effects of household income and subjective neighborhood safety on children's internalizing symptoms, suggesting that the effect of high subjective neighborhood safety on internalizing symptoms is larger for high-income than low-income families (Table 4).

In Figure 2-a, there was an overall inverse association

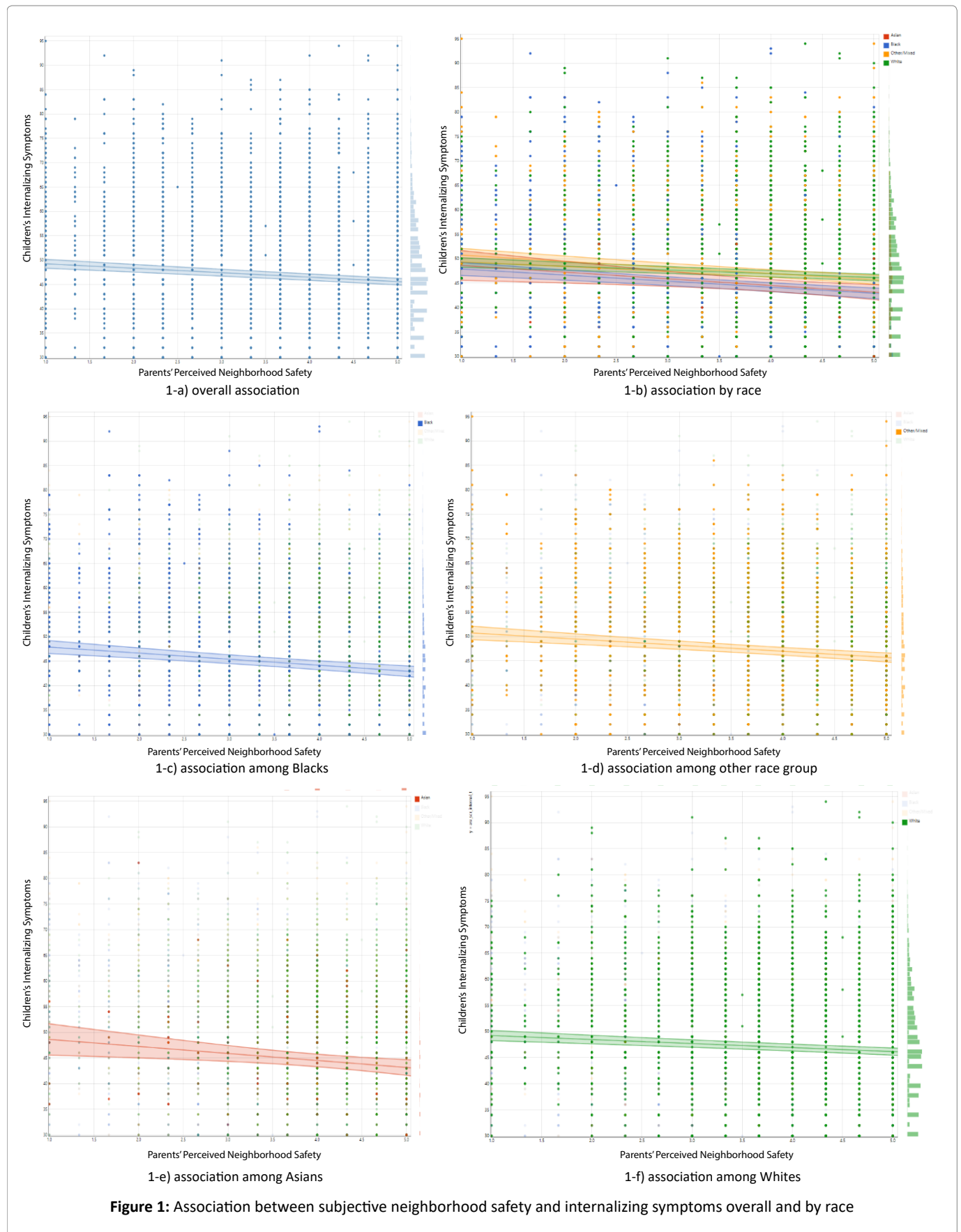


Table 4: Summary of mixed-effects regressions on the association between subjective neighborhood safety and children's internalizing symptoms by household income

	Model 4				Model 5			
	B	SE			B	SE		
Neighborhood safety	-1.00	0.10	< 1e-6	***	-0.87	0.15	< 1e-6	***
Race(Black)	-2.70	0.35	< 1e-6	***	-2.66	0.35	< 1e-6	***
Race(Asian)	-3.05	0.63	0.000	***	-3.06	0.63	0.000	***
Race(Mixed/Other)	0.01	0.28	0.960		0.02	0.28	0.945	
Household income (> =50K & < 100K)	-0.79	0.29	0.007	**	-0.52	1.02	0.611	
Household income (> =100K)	-2.83	0.32	< 1e-6	***	-1.26	0.95	0.187	
Married family	-1.21	0.28	0.000	***	-1.21	0.28	0.000	***
Age (Month)	-0.01	0.01	0.045	*	-0.01	0.01	0.055	#
Sex (Male)	0.38	0.13	0.004	**	0.38	0.13	0.004	**
Hispanic	-1.02	0.31	0.001	***	-1.00	0.31	0.001	**
Household income (> =50K & < 100K) x Neighborhood safety					0.10	0.24	0.670	
Household income (> =100K) x Neighborhood safety					-0.56	0.24	0.021	*

#p<0.1 *p<0.05 **p<0.01 ***p<0.001

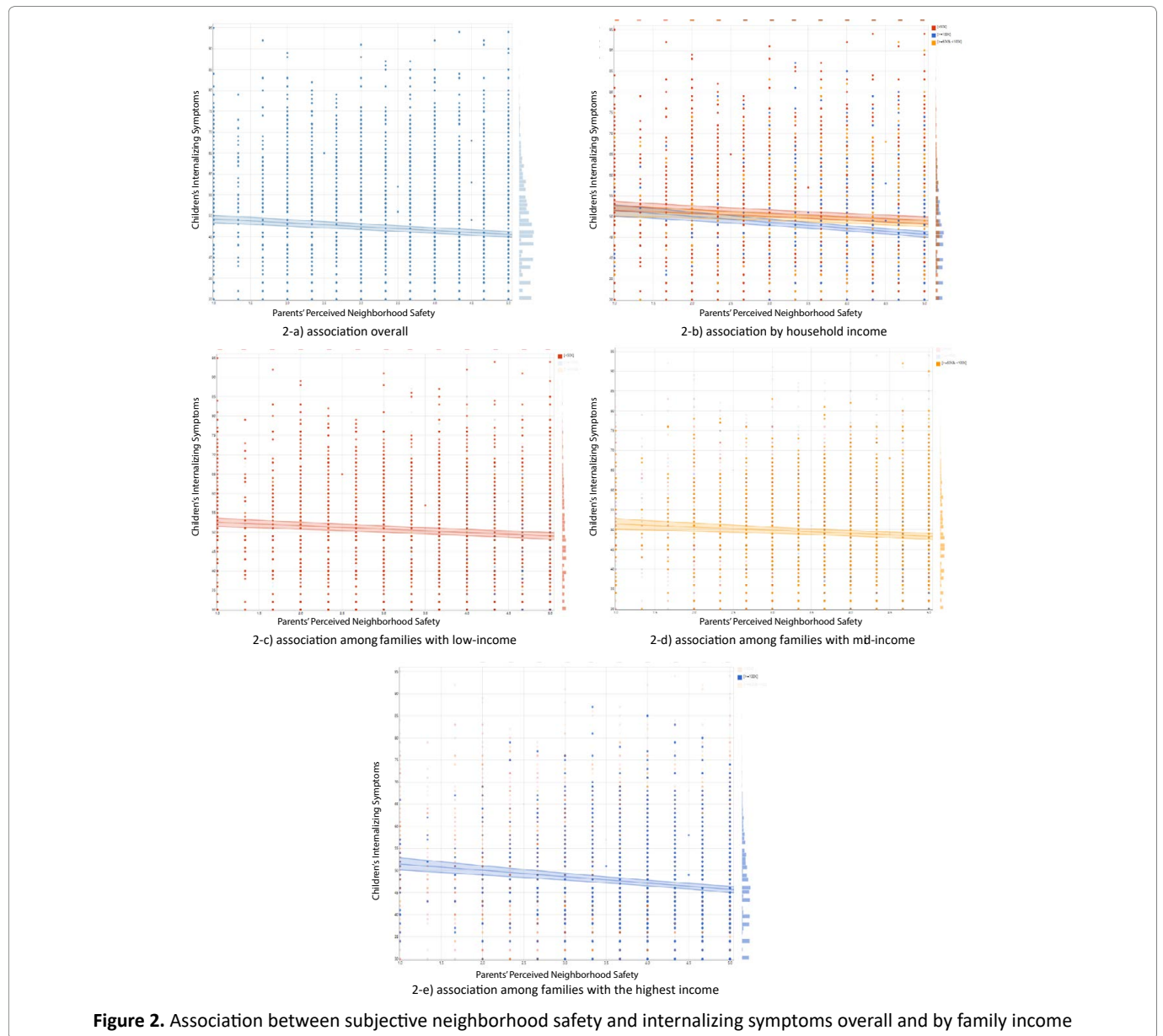


Figure 2. Association between subjective neighborhood safety and internalizing symptoms overall and by family income

between subjective neighborhood safety and internalizing symptoms. As shown by Figure 2-b, the inverse association between high subjective neighborhood safety of parents and children's internalizing symptoms was stronger for high-income than low-income children. Figures 2-c to 2-e show our association across income groups.

As the interactions between parents' subjective neighborhood safety and parental education were not significant, parental education did not seem to have a moderating effect on the association between parents' subjective neighborhood safety and children's internalizing symptoms. Similarly, the interactions between parents' subjective neighborhood safety and family structure were not significant. Thus, family structure was found not to moderate the association between parents' subjective neighborhood safety and children's internalizing symptoms. As such, we did not show these lack of interaction effects.

Discussion

Overall, there is an association between parents' perceived neighborhood safety and internalizing symptoms among American children. However, this association varies across racial and income groups. Compared to their White counterparts, Black and other race American families show a stronger inverse association between parents' subjective neighborhood safety and children's internalizing symptoms. Compared to their low-income counterparts, high-income American families may show a stronger inverse association between parents' subjective neighborhood safety and children's internalizing symptoms.

The first finding that parents' subjective neighborhood safety is linked to internalizing symptoms among children is in line with past work by many scholars as well as our group. In a nationally representative study, we showed neighborhood safety to predict clinical depression for Black youth⁹. Diez Roux¹¹⁰⁻¹¹², Galea¹¹³, and other colleagues have shown the relevance of neighborhood safety and quality as determinants of depression for adults. Research by others also has established a link between safe neighborhoods and lower risks of depression and depressive symptoms¹¹⁴. Our studies show that fear of crime, fear of neighborhood violence, and risk of victimization in the neighborhood may increase clinical and subclinical depression and other emotional and behavioral problems in youth and adults^{9,32,69,72}. These are in part because low neighborhood safety is a type of stress¹¹³ and the role of various types of stress on the emotional and behavioral well-being of youth and adults are well established¹¹⁵.

Racial variation in the effects of parents' subjective neighborhood safety on internalizing symptoms was expected. However, we did not expect a stronger inverse

association for Black and Other/Mixed race compared to White children. This finding is not in line with Marginalization-related Diminished Returns (MDRs; diminished returns of resources for racialized families). Extensive work on MDRs has shown that individual-level and family-level SES and even neighborhood safety may show weaker health effects for Black people compared to Whites¹¹⁶⁻¹¹⁹. Weaker, not stronger, associations of individual-level and family-level resources are repeatedly established for Black individuals and families. These diminishing returns of family-level SES are robust as they hold across resources, developmental phases, outcomes, and marginalization types^{86,120}. In most previous studies, Black families have shown less, not more, effects of income¹²¹, education¹¹⁷, employment¹²², and marital status¹²³ on a wide range of emotional, behavioral, and health outcomes. Most of the past MDRs research, however, has focused on SES, not neighborhood effects on Black children^{121,124,125}, adults¹¹⁸, and older adults¹²⁶. It has been proposed that context may be a reason why we observe MDRs of SES indicators in Black¹²⁵, Hispanic^{117,127-129}, Asian American¹³⁰, Native American¹³¹, LGBTQ¹¹⁶, and even marginalized White¹³² people.

The existing knowledge on racial and SES variation in the effects of subjective and objective indicators of neighborhood safety is limited. In one study, neighborhood safety better-promoted the life expectancy of White than Black adults⁷⁰. Although the mechanisms that impact internalizing symptoms are undoubtedly different from those that impact mortality and other conditions, it is still unclear why for one outcome, Blacks, and for another outcome, Whites show a more substantial health effect of neighborhood safety⁷⁰. In some other studies, the associations between financial difficulty and depression have been stronger in Black than White adults^{92,133-135}.

Our findings also propose that different household incomes may be one reason racial groups differ in the effects of neighborhood safety on internalizing symptoms in children. This observation is in line with some past work¹¹⁸. Multiple studies have shown that, due to the labor market and housing discrimination, high SES Black families remain in worse neighborhoods, gain less income, and accumulate less wealth¹³⁶⁻¹³⁹. It is shown that due to structural racism, poor quality of education, labor market discrimination, and segregation, Black children attend worse schools across all SES levels¹⁴⁰⁻¹⁴³. In one study, income fully explained why education generated differential health effects for Black and White adults. Although outcomes, settings, and age groups are not comparable across all these studies, comparison of these results may shed some light on the role of differential income as a mechanism by which parental education is differently linked to health outcomes in Black and White families¹¹⁸.

This study used internalizing symptoms as the outcome. Internalizing symptoms and clinical and sub-clinical depression are shown to be more than expected in Black children from high SES families^{4,82,144-149}. It is shown that parental education, household income, and own education show less protective effects for depression and internalizing symptoms in Black than White families^{4,82,144-149}. In the ABCD data, parental education and household income better reduced internalizing symptoms, depression, and suicidal ideation of White than Black children^{82,85}. In one study, high SES did increase, rather than reduce, the risk of major depressive disorder (MDD) for Black boys and men^{148,149}. This is in part because high SES Black children and adults are frequently exposed to and are vulnerable to discrimination.

A wide range of societal mechanisms may alter how environmental conditions, resources, or assets may promote and how environmental risk factors may deteriorate outcomes across diverse racial groups. Racial minority communities, families, and individuals face a wide range of stressors that are not due to economic resources but social stratification and racism. These non-economic adversities are environmental, structural and are related to race, racialization, marginalization, and adversities that are seen across all economic levels¹⁵⁰. Economic mobility's marginal health returns may be limited when the likelihood of upward social mobility is very slim for a specific group¹⁵¹. Increased exposure to stress is believed to reduce children's ability to gain from their available economic status resources such as parental education and income. For racial minority families, an increase in economic status may increase experience^{4,147,148,152,153} and vulnerability⁹² to discrimination. This might be because non-White families who have economic resources are more likely to be surrounded by White families, which increases their exposure to discriminatory events^{4,147}. High levels of race-related (discrimination) and general stress, and neighborhood fear and violence, may operate as risk factors for many outcomes, including but not limited to depressive symptoms, and may reduce the return of SES and other economic resources on children's outcomes^{92,148,154}.

Residential segregation, school segregation, and job segregation may be other reasons why we observe differences across racial groups in their contextual exposures, such as neighborhood fear of violence. As a result of residential and school segregation, neighborhood and school options are limited for racial minority children across all economic levels. Racial minority children are sent to poor schools located in highly segregated areas, which is even true for families with economic resources^{141,143,155}. This results in the differential effects of resources and environmental factors on children's education and schooling across diverse racial groups. For example, it is shown that while high SES White children

attend resourced schools that are located in suburban areas with available funding and highly prepared teachers, racial minority children are sent to schools that have lower levels of resources and less prepared teachers⁵¹.

Scholars have recently studied the life experiences of middle-class Black families^{156,157}. This research line has shown that middle-class families of color, particularly Blacks, experience their class and social status differently compared to their middle-class White counterparts. Research has shown that high SES may even operate as a source of vulnerability for diverse racial minority families by increasing exposure and sensitivity to Discrimination. Middle-class Black families live and work at increased proximity to White families, which is shown to increase their discrimination^{152,153,158-161}.

Multiple competing and complementary models have been proposed and used to study the simultaneous and joint effects of race, SES, and neighborhood safety on children's emotional and behavioral outcomes. One approach, which has traditionally and historically dominated the field, attributes racial gaps in children's outcomes to the scarcity of economic resources and high prevalence of risk factors in the lives of racial minority families¹⁶²⁻¹⁶⁵. Some researchers who follow this line of work have suggested that economic status may partially mediate the effects of race on children's outcomes¹⁶⁶⁻¹⁶⁸. This research advocate for enhancing racial minority groups' economic status and improving their neighborhood conditions as the main strategies to close the existing racial inequalities^{169,170}.

We did not find support for Marginalization-related Diminished Returns (MDRs)^{86,120}. The MDRs framework argues that resources and assets may have differential effects on generating outcomes across racial groups due to social stratification and racism. MDRs are defined that weaker effects of economic resources and assets on tangible outcomes of racial minorities than White families. This model has received overwhelming support suggesting as various indicators such as subjective neighborhood safety^{67,92}, parental education¹⁷¹, family income^{121,125}, employment¹²², and marital status¹⁷² have weaker correlations with desired outcomes for racial minorities, particularly Black families. Well-documented by the existing MDRs literature, economic resources of oneself¹¹⁷ and one's parents^{139,173,174} generate fewer desired outcomes for racial minority groups. Racial minority groups differ in their opportunities to mobilize their economic resources in order to secure tangible outcomes^{118,120,121,123,174,175}. Given the existing MDRs, Black children may develop worse than expected outcomes compared to White children when their known-risk and protective factors are controlled because of racism and racialization, which is difficult to measure. MDRs are shown across economic and health outcomes^{86,120,121,124,125}. While these MDRs are shown for SES

effects on attention⁶⁷, impulsivity¹²¹, inhibitory control^{80,176}, and reward orientation^{84,177}, we are not aware of studies on neighborhood effects on internalizing symptoms.

The third group of models used to study interactive effects of race, SES, neighborhood conditions, and health outcomes is double/triple/multiple jeopardies or cumulative disadvantages¹⁷⁸⁻¹⁸³. These models suggest that the effects of one additional risk factor would be larger at the bottom of the society and for racial minority populations. The argument behind these models is that risk factors and adversities increase the detrimental effect of any additional risk factor. These frameworks use the term vulnerable for minority populations, suggesting that they are more sensitive to risk factors¹⁷⁸⁻¹⁸³. Our observation on the stronger association between parents' subjective neighborhood safety and children's internalizing symptoms in Black than White families was in line with these frameworks.

Study Limitation

Our study had a few methodological limitations. Cross-sectional studies cannot establish causal associations. Thus, this study did not report the causes of children's internalizing symptoms. We only tested the associations between neighborhood safety and internalizing symptoms rather than clinical depression or conduct disorder. While we included SES indicators such as household income and parental education, other SES indicators such as family wealth were not included. This study did include subjective aspects of social context, however, it did not include various aspects of physical environment. Future research may study if diverse racial groups also differ in the effects of objective and subjective physical environment on developmental, behavioral, and emotional outcomes.

Conclusion

Racial and income groups differ in the association between neighborhood safety and children's internalizing symptoms. Children's internalizing symptoms are shaped by complex interactions between group membership and social factors such as perceived neighborhood safety. That means pathways and mechanisms that predict the emotional outcomes of children vary across racial and SES groups. This preliminary observation suggests that neighborhood safety may have different salience as a social determinant of emotional well-being for American children with diverse racial and economic backgrounds. There is a need to test the replicability of these findings using longitudinal data. There is also a need to conduct further research on neighborhood safety effects on clinical diagnosis of depression.

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