# Sensitive Communities (2018)

**Data Administrator**
MTC/ABAG

## Summary

Sensitive Communities identified for the San Francisco Bay Region.

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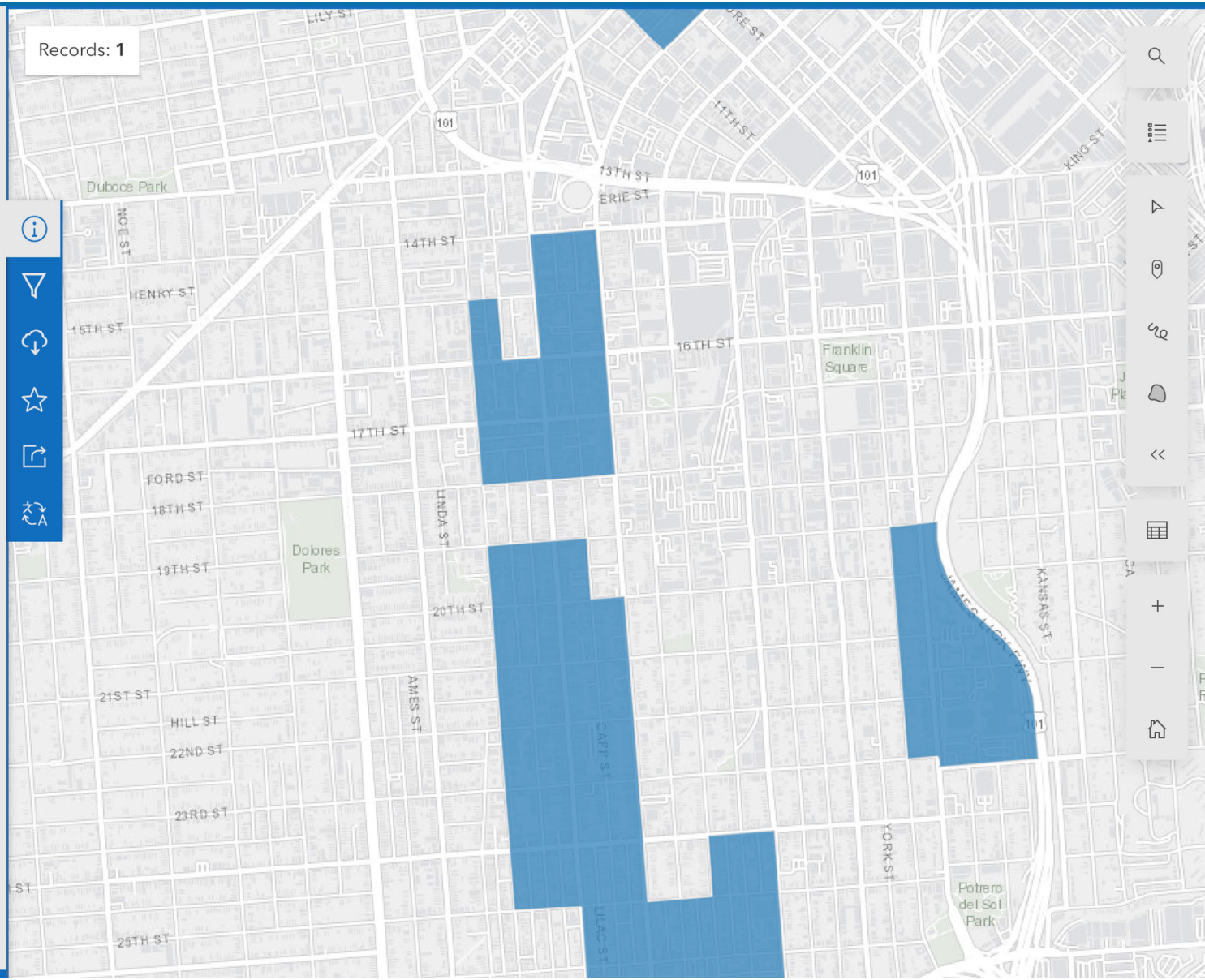

# Adverse Childhood Experiences (ACEs)

# About Adverse Childhood Experiences

For Everyone
OCTOBER 8, 2024

**KEY POINTS**

- Adverse childhood experiences can have long-term negative impacts on health, opportunity and well-being.
- Adverse childhood experiences are common and some groups experience them more than others.

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## What are adverse childhood experiences?

Adverse childhood experiences, or ACEs, are potentially traumatic events that occur in childhood (0-17 years). Examples include: [1]

- Experiencing violence, abuse, or neglect.
- Witnessing violence in the home or community.
- Having a family member attempt or die by suicide.

Also included are aspects of the child's environment that can undermine their sense of safety, stability, and bonding. Examples can include growing up in a household with: [1]

- Substance use problems.
- Mental health problems.
- Instability due to parental separation.
- Instability due to household members being in jail or prison.

The examples above are not a complete list of adverse experiences. Many other traumatic experiences could impact health and well-being. This can include not having enough food to eat, experiencing homelessness or unstable housing, or experiencing discrimination. [2] [3] [4] [5] [6]

## Quick facts and stats

ACEs are common. About 64% of adults in the United States reported they had experienced at least one type of ACE before age 18. Nearly one in six (17.3%) adults reported they had experienced four or more types of ACEs. [7]

Three in four high school students reported experiencing one or more ACEs, and one in five experienced four or more ACEs. ACEs that were most common among high school students were emotional abuse, physical abuse, and living in a household affected by poor mental health or substance abuse. [8]

Preventing ACEs could potentially reduce many health conditions. Estimates show up to 1.9 million heart disease cases and 21 million depression cases potentially could have been avoided by preventing ACEs. [1] Preventing ACEs could reduce suicide attempts among high school students by as much as 89%, prescription pain medication misuse by as much as 84%, and persistent feelings of sadness or hopelessness by as much as 66%. [8]

Some people are at greater risk of experiencing one or more ACEs than others. While all children are at risk of ACEs, numerous studies show inequities in such experiences. These inequalities are linked to the historical, social, and economic environments in which some families live. [5] [6] ACEs were highest among females, non-Hispanic American Indian or Alaska Native adults, and adults who are unemployed or unable to work. [7]

ACEs are costly. ACEs-related health consequences cost an estimated economic burden of $748 billion annually in Bermuda, Canada, and the United States. [9]

## Outcomes

ACEs can have lasting effects on health and well-being in childhood and life opportunities well into adulthood. [10] Life opportunities include things like education and job potential. These experiences can increase the risks of injury, sexually transmitted infections, and involvement in sex trafficking. They can also increase risks for maternal and child health problems including teen pregnancy, pregnancy complications, and fetal death. Also included are a range of chronic diseases and leading causes of death, such as cancer, diabetes, heart disease, and suicide. [1] [11] [12] [13] [14] [15] [16] [17] [18]

ACEs and associated social determinants of health, such as living in under-resourced or racially segregated neighborhoods, can cause toxic stress. Toxic stress, or extended or prolonged stress, from ACEs can negatively affect children's brain development, immune system, and stress-response systems. These changes can affect children's attention, decision-making, and learning. [19]

Children growing up with toxic stress may have difficulty forming healthy and stable relationships. They may also have unstable work histories as adults and struggle with finances, job stability, and depression throughout life. [19] These effects can also be passed on to their own children. [20] [21] [22] Some children may face further exposure to toxic stress from historical and ongoing traumas. These historical and ongoing traumas include experiences of racial discrimination or the impacts of poverty resulting from limited educational and economic opportunities. [1] [6]

## Prevention

Adverse childhood experiences can be prevented. Certain factors may increase or decrease the risk of experiencing adverse childhood experiences.

Preventing adverse childhood experiences requires understanding and addressing the factors that put people at risk for or protect them from violence.

Creating safe, stable, nurturing relationships and environments for all children prevent ACEs and help all children reach their full potential. These relationships and environments are essential to creating positive childhood experiences. We all have a role to play.


We Can Prevent ACEs

KEEP READING:
Preventing Adverse Childhood Experiences

## What CDC is doing

CDC is committed to building systems and communities that nurture development, and to ensuring that every child has the opportunity to thrive. By investing in the potential of all children and supporting their families and their communities, we can prevent ACEs before they happen, and buffer the risk of harm when they do happen.

CDC is dedicated to preventing, identifying, and responding to ACEs at the community, state, and national level so that all people can achieve lifelong health and wellbeing. Our goal is to create the conditions for strong, thriving families and communities where children and youth are free from harm.

CDC's four strategic goals for ACEs prevention and response include:

1. Support ACEs surveillance and data innovation.

2. Expand what we know about evidence-based ACEs prevention and positive childhood experiences promotion.

3. Build local, state, tribal, and key partner capacity.

4. Increase awareness and understanding among key partners.

SOURCES

**CONTENT SOURCE:**
National Center for Injury Prevention and Control

REFERENCES


1. Merrick MT, Ford DC, Ports KA, et al. Vital Signs: Estimated Proportion of Adult Health Problems Attributable to Adverse Childhood Experiences and Implications for Prevention — 25 States, 2015–2017. MMWR Morb Mortal Wkly Rep 2019;68:999-1005. DOI: http://dx.doi.org/10.15585/mmwr.mm6844e1.
2. Cain KS, Meyer SC, Cummer E, Patel KK, Casacchia NJ, Montez K, Palakshappa D, Brown CL. Association of Food Insecurity with Mental Health Outcomes in Parents and Children. Science Direct. 2022; 22:7; 1105-1114. DOI: https://doi.org/10.1016/j.acap.2022.04.010.
3. Smith-Grant J, Kilmer G, Brener N, Robin L, Underwood M. Risk Behaviors and Experiences Among Youth Experiencing Homelessness—Youth Risk Behavior Survey, 23 U.S. States and 11 Local School Districts. Journal of Community Health. 2022; 47: 324-333.
4. Experiencing discrimination: Early Childhood Adversity, Toxic Stress, and the Impacts of Racism on the Foundations of Health | Annual Review of Public Health https://doi.org/10.1146/annurev-publhealth-090419-101940.
5. Sedlak A, Mettenburg J, Basena M, et al. Fourth national incidence study of child abuse and neglect (NIS-4): Report to Congress. Executive Summary. Washington, DC: U.S. Department of Health an Human Services, Administration for Children and Families.; 2010.
6. Font S, Maguire-Jack K. Pathways from childhood abuse and other adversities to adult health risks: The role of adult socioeconomic conditions. Child Abuse Negl. 2016;51:390-399.
7. Swedo EA, Aslam MV, Dahlberg LL, et al. Prevalence of Adverse Childhood Experiences Among U.S. Adults — Behavioral Risk Factor Surveillance System, 2011–2020. MMWR Morb Mortal Wkly Rep 2023;72:707–715. DOI: http://dx.doi.org/10.15585/mmwr.mm7226a2.
8. Swedo EA, Pampati S, Anderson KN, et al. Adverse Childhood Experiences and Health Conditions and Risk Behaviors Among High School Students — Youth Risk Behavior Survey, United States, 2023. MMWR Suppl 2024;73(Suppl-4):39–49. DOI: http://dx.doi.org/10.15585/mmwr.su7304a5.
9. Bellis, MA, et al. Life Course Health Consequences and Associated Annual Costs of Adverse Childhood Experiences Across Europe and North America: A Systematic Review and Meta-Analysis. Lancet Public Health 2019.
10. Adverse Childhood Experiences During the COVID-19 Pandemic and Associations with Poor Mental Health and Suicidal Behaviors Among High School Students — Adolescent Behaviors and Experiences Survey, United States, January–June 2021 | MMWR
11. Hillis SD, Anda RF, Dube SR, Felitti VJ, Marchbanks PA, Marks JS. The association between adverse childhood experiences and adolescent pregnancy, long-term psychosocial consequences, and fetal death. Pediatrics. 2004 Feb;113(2):320-7.
12. Miller ES, Fleming O, Ekpe EE, Grobman WA, Heard-Garris N. Association Between Adverse Childhood Experiences and Adverse Pregnancy Outcomes. *Obstetrics & Gynecology*. 2021;138(5):770-776. https://doi.org/10.1097/AOG.0000000000004570.
13. Sulaiman S, Premji SS, Tavangar F, et al. Total Adverse Childhood Experiences and Preterm Birth: A Systematic Review. *Matern Child Health J.* 2021;25(10):1581-1594. https://doi.org/10.1007/s10995-021-03176-6.
14. Ciciolla L, Shreffler KM, Tiemeyer S. Maternal Childhood Adversity as a Risk for Perinatal Complications and NICU Hospitalization. *Journal of Pediatric Psychology*. 2021;46(7):801-813. https://doi.org/10.1093/jpepsy/jsab027.
15. Mersky JP, Lee CP. Adverse childhood experiences and poor birth outcomes in a diverse, low-income sample. BMC pregnancy and childbirth. 2019;19(1). https://doi.org/10.1186/s12884-019-2560-8.
16. Hillis SD, Anda RF, Dube SR, Felitti VJ, Marchbanks PA, Marks JS. The association between adverse childhood experiences and adolescent pregnancy, long-term psychosocial consequences, and fetal death. Pediatrics. 2004 Feb;113(2):320-7.
17. Reid JA, Baglivio MT, Piquero AR, Greenwald MA, Epps N. No youth left behind to human trafficking: Exploring profiles of risk. American journal of orthopsychiatry. 2019;89(6):704.
18. Diamond-Welch B, Kosloski AE. Adverse childhood experiences and propensity to participate in the commercialized sex market. Child Abuse & Neglect. 2020 Jun 1;104:104468.
19. Shonkoff, J. P., Garner, A. S., Committee on Psychosocial Aspects of Child and Family Health, Committee on Early Childhood, Adoption, and Dependent Care, & Section on Developmental and Behavioral Pediatrics (2012). The lifelong effects of early childhood adversity and toxic stress. Pediatrics, 129(1), e232–e246. https://doi.org/10.1542/peds.2011-2663
20. Narayan AJ, Kalstabakken AW, Labella MH, Nerenberg LS, Monn AR, Masten AS. Intergenerational continuity of adverse childhood experiences in homeless families: unpacking exposure to maltreatment versus family dysfunction. Am J Orthopsych. 2017;87(1):3. https://doi.org/10.1037/ort0000133.
21. Schofield TJ, Donnellan MB, Merrick MT, Ports KA, Klevens J, Leeb R. Intergenerational continuity in adverse childhood experiences and rural community environments. Am J Public Health. 2018;108(9):1148-1152. https://doi.org/10.2105/AJPH.2018.304598.

12. Schofield TJ, Lee RD, Merrick MT. Safe, stable, nurturing relationships as a moderator of intergenerational continuity of child maltreatment: a meta-analysis. J Adolesc Health. 2013;53(4 Suppl):S32-38. https://doi.org/10.1016/j.jadohealth.2013.05.004.

NATIONAL

# As Addiction Deaths Surge, Profit-Driven Rehab Industry Faces 'Severe Ethical Crisis'

FEBRUARY 15, 2021 · 7:08 AM ET

HEARD ON MORNING EDITION

Brian Mann

**4-Minute Listen** PLAYLIST TRANSCRIPT


This 2017 photo shows a slogan is on the storefront of Journey, a former substance abuse treatment center, in Lake Worth, Fla. Now closed, it was one of two centers owned by Kenneth Chatman, who is now serving a 27-year federal prison sentence for health care fraud and money laundering convictions.

*Lynne Sladky/AP*

As the nation's addiction crisis deepened, Tamara Beetham, who studies health policy at Yale University, set out to answer a simple question: What happens when people try to get help?

Her first step was to create a kind of undercover identity — a 26-year-old, using heroin daily. Using this fictional persona, her research team called more than 600 residential treatment centers all over the country.

"We'd kind of call and say, I'm looking to, you know, start treatment and kind of go from there," Beetham said.

For people suffering addiction, this can be a life-or-death moment. Studies show that getting high-quality medical care can make a huge difference, leading to long-term recovery and a healthier life. So what Beetham's team found was troubling.



According to their peer-reviewed study, published in the February issue of the journal *Health Affairs*, many for-profit rehab programs charged inflated fees and used misleading sales practices to attract patients without evaluating their actual medical needs.

It turns out the people answering the phones at for-profit rehab programs when Beetham's team called typically weren't nurses or therapists. They often weren't asking medical questions at all.

They were sales people using aggressive marketing tactics to get credit card numbers while demanding a lot of cash up front, averaging more than $17,000. Researchers found the sales pitch at for-profit clinics often focused on things that have nothing to do with medical care.

"It used to be a spa for the rich and famous," a rehab program sales person told one of Beetham's researchers, according to notes of the conversation provided to

NPR. "It's got all this extra stuff, outdoor and indoor pools, five-star chef, massage, acupuncture."

Despite the high price tag, however, Beetham's team found most programs don't provide evidence-based care using medications such as buprenorphine and methadone.

"We actually found less than a third of the programs offered medication maintenance treatment, which is the gold standard of treatment," she said.

These findings, based on data collected in 2019, come as far more Americans are dying from drug overdoses during the pandemic — more than 81,000 last year, according to the Centers for Disease Control and Prevention.

**An addiction gold rush**

Experts interviewed by NPR say this problem — residential rehab programs operating more like luxury spas or used car dealerships — is an unintended result of the Affordable Care Act.

A decade ago, the ACA mandated that private insurance programs cover people suffering addiction. It's a widely praised reform that helped many patients find healthcare as the opioid epidemic exploded.

But it created a kind of addiction gold rush, says Dave Aronberg, state attorney for Palm Beach County, Fla.

"You had all these bad actors descend on the legitimate recovery community to take advantage of people in recovery and exploit them for their insurance," Aronberg said.

So many for-profit rehab clinics and "sober homes" opened in his area of South Florida that Aronberg created a task force to investigate allegations of corruption, insurance fraud and other abuses.

NATIONAL

**With Biden Team Focused On Other Crises, Experts Say Drug Epidemic Is Exploding**

"It's the Wild West," said Assistant State Attorney Alan Johnson, who leads the task force. "The good providers were being driven out of business by these rogue bad actors."

Johnson described a case he investigated in 2017 in which parents sent their daughter to South Florida for treatment.

"She was in Florida for seven months, and she overdosed and died," Johnson said. "They got their statement at the end of the year. Their insurance company was billed for $660,000."

**Fear, greed and little government oversight**

Experts say there are many good recovery programs, but families and desperate patients trying to find help say it's often impossible to tell legitimate rehab programs from unethical ones.

"It's a very hard system to navigate," said Ryan Hampton, who spent years trying to get help for his addiction to prescription opioids and heroin.

He said his family "was preyed upon by unscrupulous treatment centers." He said they borrowed money and maxed out credit cards to pay his rehab bills.

Hampton has been in recovery for six years and works now as an advocate for people with substance use disorders. He said much of the industry is still shaped by two forces: greed and fear.

"You've got a highly unregulated addiction treatment industry on the greed side," he told NPR. "And then you've got fear on the other hand which are families, people who need help right away."

NATIONAL

**Former Walmart Pharmacists Say Company Ignored Red Flags As Opioid Sales Boomed**

In recent years, some states including Florida have tightened regulations on rehab programs, but rules and requirements vary wildly from state to state.

Academics, recovery advocates and government officials told NPR that roughly half the states provide little or no meaningful oversight over the industry.

The federal government, meanwhile, plays little role setting or enforcing professional or medical guidelines for residential addiction care.

Many rehab programs are "accredited" by private companies that review their operations in exchange for a fee.

But the *Health Affairs* study found many of those rehab programs still use hard-sell marketing practices.

"We actually found ones with accreditation were more likely to recruit patients with inducements and without full clinical evaluations," Beetham said.

**Efforts at reform within the industry**

"The addiction treatment industry is really suffering from a lack of standards," said Dr. Paul Earley, president of the American Society of Addiction Medicine.

He said many care providers, along with advocacy groups, are working to improve and standardize addiction programs to be more science-based.

"We believe once ethical well-meaning treatment programs begin adopting these standards, it will eventually marginalize bad actors in the treatment field," Earley told NPR.

But there's frustration over the pace of change.

In 2019, a trade group called the National Association of Addiction Treatment Providers published a report acknowledging "a severe ethical crisis" in the recovery field.

Ethical standards at many rehab programs were so poor that the organization purged "numerous members of the association at considerable financial loss," according to the report.

Peter Thomas, NAATP's director of quality assurance, said the new study in *Health Affairs* shows there's still a lot of work to be done.

"I do think that it's still a problem," Thomas told NPR. "The hard sells, the deceptive marketing practices, fraudulent billing."

Some who have worked in the for-profit rehab industry agree the culture is still often driven by profit rather than proper medical care.

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"It's horrific, there isn't really any reform," said Dr. Howard Samuels, who ran high-end rehab clinics in California until last year. He still maintains a private therapy practice for people in recovery.

According to Samuels, it's often impossible for patients to know which programs offer appropriate care for their type of addiction.

"You don't know what you're going to get because when you call the admission for treatment centers they'll tell you whatever you want to hear," he said.

Samuels said his programs did provide high-quality recovery care. But he acknowledged charging high rates for spa-like amenities — horseback riding, fine cuisine and swimming pools — with no proven therapeutic value.

"I'm one of the first people who created that," Samuels told NPR, noting that rates at his in-patient programs ran as high as $60,000 a month. "You have to seduce the client in by having nice accommodations."

In fact, studies show for many patients, far less expensive nonprofit residential programs or even outpatient addiction care can be equally as effective.

### Where are the doctors?

Many of the experts interviewed for this story point to one needed reform: expanding the role of doctors, physician assistants and other trained medical professionals in addiction care.

"The addiction treatment industry is a cottage industry," said activist Ryan Hampton. "We need full integration into the health care system."

The idea is that doctors should guide patients suffering substance use disorder, just as they would individuals facing other life-threatening illnesses.

This view has grown rapidly in recent years, as research-based treatments have gained ground in a field long dominated by programs based on spiritual and ethical concepts.

"Addiction treatment is health care, and it should be obtained in the same way that other specialty services are — you should get a referral from your primary care doctor," said the NAATP's Thomas.

But despite scientific advances and far better insurance coverage for addiction care, this rarely happens.

After decades of being treated separately from mainstream health care, studies show many physicians are still unwilling, or lack the training, to treat patients suffering substance use disorders.

"That's part of the stigma of addiction," said Earley with ASAM. "Addiction is a treatable brain disease. When you look at physicians, the amount of training and education they have with this illness is marginal."

For now, experts say that means many people who fall into addiction wind up going it alone, navigating a rehab system that too often pushes them into debt without helping them heal.

health care addiction medical care addiction treatment treatment centers

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COLUMN

# Can architecture help remedy the mess at 16th and Mission?

by **LYDIA CHÁVEZ**
July 7, 2025, 4:00 am

La Fénix at 1950 Mission St. Photo by Lydia Chávez

Al Casciato, who oversaw the Mission District during his long career as a San Francisco police captain, **suggested recently** that one of the city's biggest urban planning mistakes at 16th and Mission streets occurred in the 1970s, when planners failed to include housing and retail as part of the BART station.

This failure, he said, meant there are no "eyes on the street," a concept that comes from the journalist Jane Jacobs.

"There must be eyes upon the street, eyes belonging to those we might call the natural proprietors of the street," Jacobs wrote in her 1961 book, "The Death and Life of Great American Cities," a classic on urban planning.

When Casciato referenced Jacobs, I thought: But wait, there *are* eyes on Mission Street. Some 400 tenants, plus three nonprofits with active programming, reside at La Fénix, the four-year-old public housing development between 15th and 16th streets at 1950 Mission St.

The building's stylish facade features differently textured materials, colors and angles, giving it the look of a market-rate building. Inside, walkways between the buildings, a well-maintained courtyard and a rooftop garden make the affordable housing complex its own little Eden.

Step outside, however, and you'll feel like you've been cast out of that garden. What awaits residents on most days, and especially on the weekends, is the **dismal reality** of open drug use and unpermitted vending.

"A fentanyl cloud," said Sophia Thibodeaux, a tenant, who says she sometimes tells those who loiter in front of the building: "This is a sidewalk, not a standwalk."

I mentioned the building to Casciato when I requested an interview to talk about his theory that "eyes on the street" would help. His interest piqued, he visited the site, parked across the street and, "just for fun," observed the street life.

Nearly all of the ground-floor windows are tinted, he pointed out the following day. So, no one on the street recognizes that there is life inside. To people scoping out a quiet place to use or sell narcotics, it appears that "those spaces are vacant."

3:38 p.m. 6/01, west side of Mission Street. Photo by Lydia Chávez.

The setback at the southern entrance, a large recessed area, "created a safe space for someone to sleep," he noted. The inset is in front of the Youth Art Exchange, which runs art programs for local youth on La Fénix's ground floor. The setback, says Casciato, "has become a dealer hangout … they are buying and using and you can see it."

His takeaway: "That building," which sits in the middle of the block and takes up nearly 40 percent of the real estate along the west side of Mission Street, "has done nothing for the block."

It's a no-nonsense, cut-to-the-chase assessment that would make the architect and developers flinch. And Casciato would be the first to admit that La Fénix also brings important benefits to the area. Most importantly, it is home to some 400 residents, many of whom had been homeless before moving in four years ago.

"The building is what protects us from the outside," Thibodeaux said. "Once you enter the door, the atmosphere is like a nice deep breath. "

However, neither Thibodeaux nor her nephew, who lives in another unit, wants to live in a cocoon. They want an environment safe enough outdoors that their children can ride their bikes on the sidewalk.

Mayor Daniel Lurie would agree, and the city is now **118 days** into an operation to change the street culture at 16th and Mission. Everyone is trying, but, except for a **limited success** this weekend, the results have been **disappointing.**

Architecture may be part of the problem. Can it become part of the solution?

Neighboring areas suggest that's possible. Still, transforming 16th and Mission, or even making it more livable, would require a significant commitment of **resources** to the physical environment, beyond a **police mobile unit** parked on the southwest BART plaza.

## The street-facing windows

Urban buildings, Jacobs wrote, must be "equipped to handle strangers and, to insure the safety of both residents and strangers, must be oriented to the street." Buildings, she added, "cannot turn their backs or blank sides on it (the street) and leave it blind."

At present, as Casiato pointed out, the ground floor appears vacant, despite being fully occupied.

Perforated metal grates cover the windows to the lobby. Nearly all the floor-to-ceiling windows that run along the front of the ground-floor commercial spaces that house three nonprofits are tinted.

As a result, anything behind the windows is concealed to the outside. Instead, the windows serve as a mirror, reflecting those on the outside to themselves.

To find **Bicis Del Pueblo**, a nonprofit that helps people learn to use and maintain bikes, I had to ask at the front desk of the housing development. Open the unmarked door, and there's a jumble of bikes, parts and tools. On Tuesday afternoons and evenings it comes alive with people fixing their bikes, but there's no sign to passersby that anything exists there at all.

Faith in Action, a nonprofit that works with immigrants, has a small sign in front. Again, it looks empty to a person passing by, but open the mirrored door and the space is bustling. Dozens of people at a time can be there for training, organizing or preparing materials.

**Youth Art Exchange** is the only nonprofit with a partially open window and clear signage. Inside is a gallery and workspaces that wind back into a lounge, podcast studio and darkroom. The illegal activity in the front makes it impossible to keep the gallery door open.

Imagine if those on the street knew what was happening inside the three spaces. Would they be as likely to slump against the building and pull out glass pipes and tinfoil? To urinate or defecate against the windows?

Raffaella Falchi, the executive director of the Youth Art Exchange in the gallery that faces Mission Street. Photo by Lydia Chávez.

Jesse Fernandez, who runs the Bicis del Pueblo bike shop at 1950 Mis

I asked people at all three nonprofits what they thought about getting rid of the tinted windows and launching a "conversation" with Mission Street. Maybe optimism is in the DNA of nonprofits struggling to make a go of it, but the response was overwhelmingly positive, albeit with caveats.

Jessie Fernandez, who runs the Bicis bicycle program of the nonprofit PODER, said that at present, the workshop is only open one day a week, but might be open more frequently if the street conditions were better and if funds were available.

He calls what happens outside their door “a tragic testament to the wealth disparity and same old tired response.”

Fernandez said his group would be open to rethinking the windows and at least putting out more signage. Theft is a concern, but he, like others, seemed open to finding solutions.

Lorena Melgarejo, executive director of Faith in Action, loves her new space, but fondly recalled the previous office around the corner on 16th Street where the immigrant group, at work behind clear windows, could catch the eyes of passers-by.

“They could see us,” she said. “It was nice.”

“The gaze,” she continued, “is part of encountering … it is not nice to feel like we are separate.”

Raffaella Falchi at the Art Exchange, who would also be open to having all of her windows clear to the street, agreed. Although her signage is clear, she recently won a grant to improve and illuminate it.

David Baker, the architect whose firm designed La Fénix, was similarly enthusiastic. “I’m all for it, and I think it would help.” But he cautioned that it has to go along with increased security and continued street cleaning.

Falchi, who is a trained architect, has other ideas as well. Pedestrians can be informed and included in what is happening inside by something as simple as sidewalk designs indicating the services provided by the nonprofits. These are subtle indicators to signal activity and care, she said.

In fact, Baker’s early proposals included colorful tile inlays on the sidewalks in front of the building. The city’s reaction, he said: “No way.” The upkeep would be too expensive and the city was already dissatisfied with the blue tiles on Mission Street, which easily chipped and were sparingly maintained.

But with the city’s attention on 16th and Mission, it’s possible there’s an opportunity. And marking the sidewalk doesn’t have to be done with tiles or mosaics. Paint could do the job, said Falchi.

Falchi and Melgarejo would also like to see **planters**. Falchi devised an interim solution for theft: “We could roll them in at night.”

Still, even the most enthusiastic say added security will be part of the solution.

MORE ON ARCHITECTURE AND THE CITY’S EFFORTS AT 16TH AND MISSION STREETS

**‘Jane Jacobs’ approach at 16th and Mission will require more security**

Rethinking the front of the large affordable housing complex at 16th and Mission could change the dynamic, but security will be needed.

**100 days after S.F. pledged to clean up 16th St., drugs and vending rage on**

“I love the Mission,  and I have never seen this,” he said. “I don’t understand it. I don’t know what we’re supposed to do.”

**Barbara**

July 7, 2025, 7:57 pm at 7:57 pm

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Comparative Study > J Stud Alcohol Drugs. 2016 Jan;77(1):17-24.
doi: 10.15288/jsad.2016.77.17.

# Not in My Back Yard: A Comparative Analysis of Crime Around Publicly Funded Drug Treatment Centers, Liquor Stores, Convenience Stores, and Corner Stores in One Mid-Atlantic City

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## Abstract

**Objective:** This research examined whether publicly funded drug treatment centers (DTCs) were associated with violent crime in excess of the violence happening around other commercial businesses.

**Method:** Violent crime data and locations of community entities were geocoded and mapped. DTCs and other retail outlets were matched based on a Neighborhood Disadvantage score at the census tract level. Street network buffers ranging from 100 to 1,400 feet were placed around each location. Negative binomial regression models were used to estimate the relationship between the count of violent crimes and the distance from each business type.

**Results:** Compared with the mean count of violent crime around drug treatment centers, the mean count of violent crime (M = 2.87) was significantly higher around liquor stores (M = 3.98; t test; $p < .01$) and corner stores (M = 3.78; t test; $p < .01$), and there was no statistically significant difference between the count around convenience stores (M = 2.65; t test; $p = .32$). In the adjusted negative binomial regression models, there was a negative and significant relationship between the count of violent crime and the distance from drug treatment centers ($\beta = -.069$, $p < .01$), liquor stores ($\beta = -.081$, $p < .01$), corner stores ($\beta = -.116$, $p < .01$), and convenience stores ($\beta = -.154$, $p < .01$).

**Conclusions:** Violent crime associated with drug treatment centers is similar to that associated with liquor stores and is less frequent than that associated with convenience stores and corner stores. 

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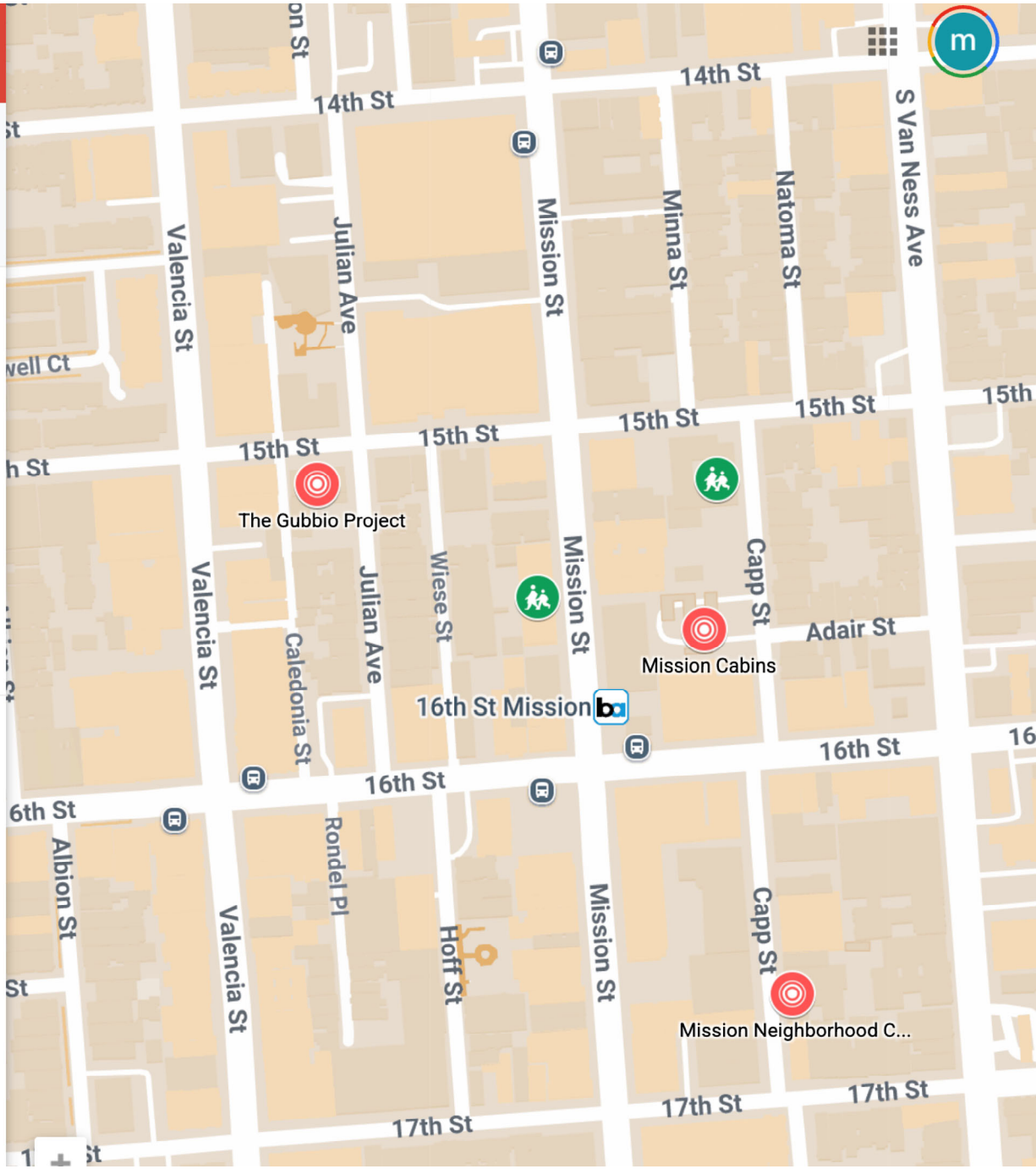

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GOVERNMENT

# Parents say Mission Street preschool remains vulnerable to random entry

*Young children pass misery and drug users at the school’s door*

by **OSCAR PALMA**
June 20, 2025, 4:00 am


A group stands right at the entrance of the school at 1954 Mission St. on Wednesday June 11, 2025. Photo by Lydia Chávez

Despite increased police enforcement nearby at the 16th Street BART Plaza, parents say little to nothing has changed outside a Head Start preschool and daycare that has become an epicenter of public drug use.

In the six weeks since *Mission Local* reported on conditions around the school at 1954 Mission St., parents continue to feel unsafe walking their children into the building, and worry about their well-being even once they are inside.

“I feel hopeless that I can’t do anything. Everything continues to be the same,” said Gabriela Giron, the mother of a 4-year-old who has attended the school for the last two years. “I fear that something may happen to the children.”

A man, allegedly holding a pack of syringes, kneels down at the entrance of the school on Tuesday, June 17, 2025. Photo courtesy of a parent at the school.

Giron is one of 11 parents who said that nothing had been done to secure the building after they spoke out publicly about the lack of safety and the need for more security guards or safer entrances to the building. The school is a tenant of the 1950 Mission St. housing complex "La Fenix," a 157-unit affordable housing project.

Sam Moss, the executive director of Mission Housing, said that adding more security is up to Bridge Housing, which manages the building. For his part, Moss said he is working with another nonprofit to offer children a safe passage program similar to those offered by some nonprofits in the Tenderloin. He expects it could be funded by the end of the third quarter, which would be in September.

Bridge Housing declined to comment.

Since *Mission Local's* April 30 article on the safety issues at the school, the principal and staff have been prohibited from talking to the press. But parents entering the school speak openly about their fears and what they often encounter when dropping off or picking up their children.


A group stands right at the entrance of the school at 1954 Mission St. on Wednesday June 11, 2025. Photo by Lydia Chávez.

Men and women still block the school’s door while smoking drugs, they said.  The front door closes slowly, so that it is still possible for strangers to enter the building by sneaking in behind parents. Strangers also walk through an emergency exit and into the housing complex, where only a low gate separates the back of the complex from the school’s playground.

“To be honest, the conditions on this block are really ugly. One can’t even walk without seeing someone consuming drugs,” said Emily Martinez, whose 4-year-old attends the school. “I worry about the kids.”

The stress of traveling to and from the preschool goes beyond explaining what the preschoolers are seeing outside of the school door.

The school, which also serves as a daycare, has a population of 42 children between the ages of 6 months and 5 years. It is owned by **Mission Neighborhood Centers**' Head Start and is part of the organization's **early education program**.

Richard Ybarra, Mission Neighborhood Centers' chief executive officer, said that the nonprofit has filed complaints with the owners of La Fenix (local nonprofit Mission Housing) and its building manager (local nonprofit Bridge Housing) on a weekly basis. Most recently, Ybarra added, he shared a low-cost security idea that he saw in action on a recent trip to San Diego.

On that trip, Ybarra visited a 7-Eleven in a part of San Diego that is often characterized by littering and loitering. The store, however, looked different: Clean, with no loitering in sight.

"I noticed they had installed bright lights and they were playing opera outside," said Ybarra. Management confirmed that the music and lighting were put in place to persuade people to move away from the business.

"I shared the idea, but they never got back to me," Ybarra added. "Our intent is always the safety and health of our children and family."

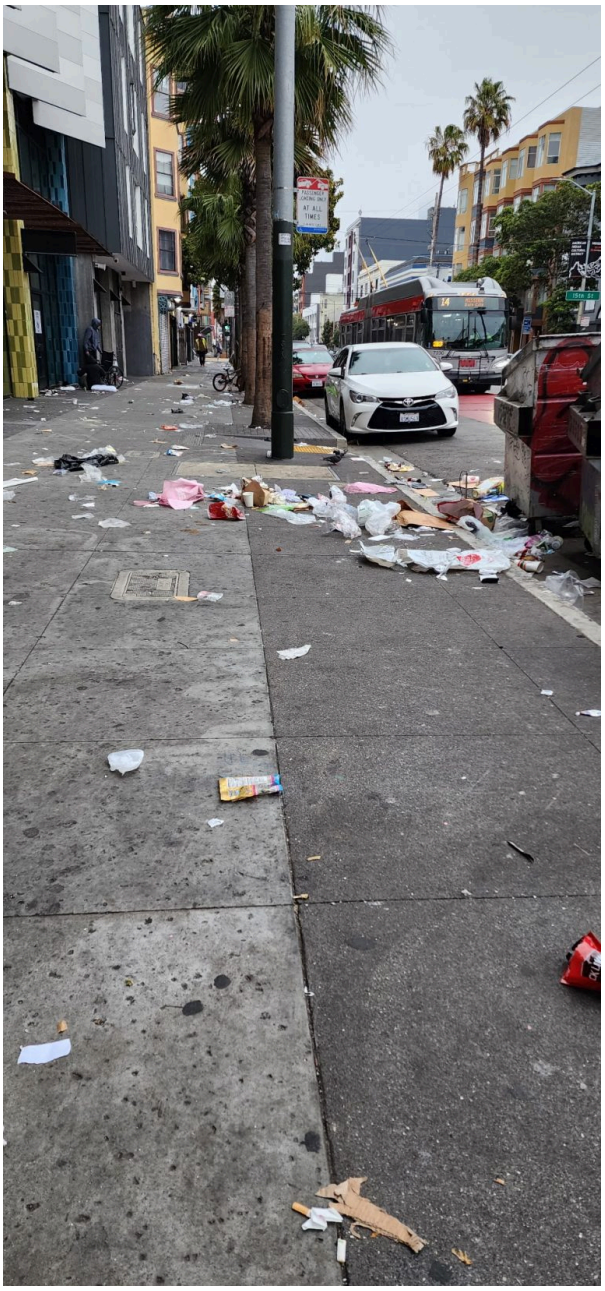
Kelly Perez, the mother of a 4-year-old, said the street conditions sometimes make her wish she didn't have to bring her child to school.

"Homelessness and drug use is everywhere here. This is hard for the kids to see," said Perez, adding she has seen people defecating and urinating on her way to school with her child. "The smell is so bad. Even after the wash, the smell lingers."

Angel Godinez, the father of a 3-year-old, said the trash, drug use and loitering on the block became just too much for his family. A father of three, Godinez is a former resident of 1950 Mission St. who decided to move to the Inner Richmond last year to leave behind conditions he described as "appalling."

"I worry about my children's safety. I also bring my two daughters with me when I drop him off, and they see everything I see," said Godinez. "People doing drugs and going to the bathroom in front of us."

District 9 Supervisor Jackie Fielder said she has advocated for $2 million to preserve and expand security along the Mission Street corridor between 16th and 24th streets. Law enforcement operations on Caledonia and Wiese streets, as well as Julian Avenue, seem to have **pushed** more drug use onto Mission Street, but residents say it has long been a problem. Mayor Daniel Lurie's current **proposed budget** has only allocated half of Fielder's proposed $2 million.



The block of Mission Street between 15th and 16th streets where the school is located on Monday, June 9, 2025. Photo courtesy of parent at the school.

"Our office is clear that no child or family should have to walk through people using hard drugs on their way home or to school on a daily basis," said Fielder. "We are frustrated with this, and continue to raise concerns about displacement and safety with the various departments involved in street conditions."

Liza Johansen, the captain of Mission Police Station, said on June 5 that the conditions on the block had worsened as other areas saw improvement, but others say the vending and drug use on Mission Street has gone on for **more than a year**.

Johansen said the police department and the Mission Street Team are in communication to come up with a new plan for the area.

Meanwhile, parents continue to worry as they drop their children at school every morning.

"Everything looks the same," said Aracely Hernandez, the mother of a 3-year-old. "I worry, because there's no security. Our children see drug use, and no one seems to care."

**cardinal**

June 20, 2025, 8:34 am at 8:34 am

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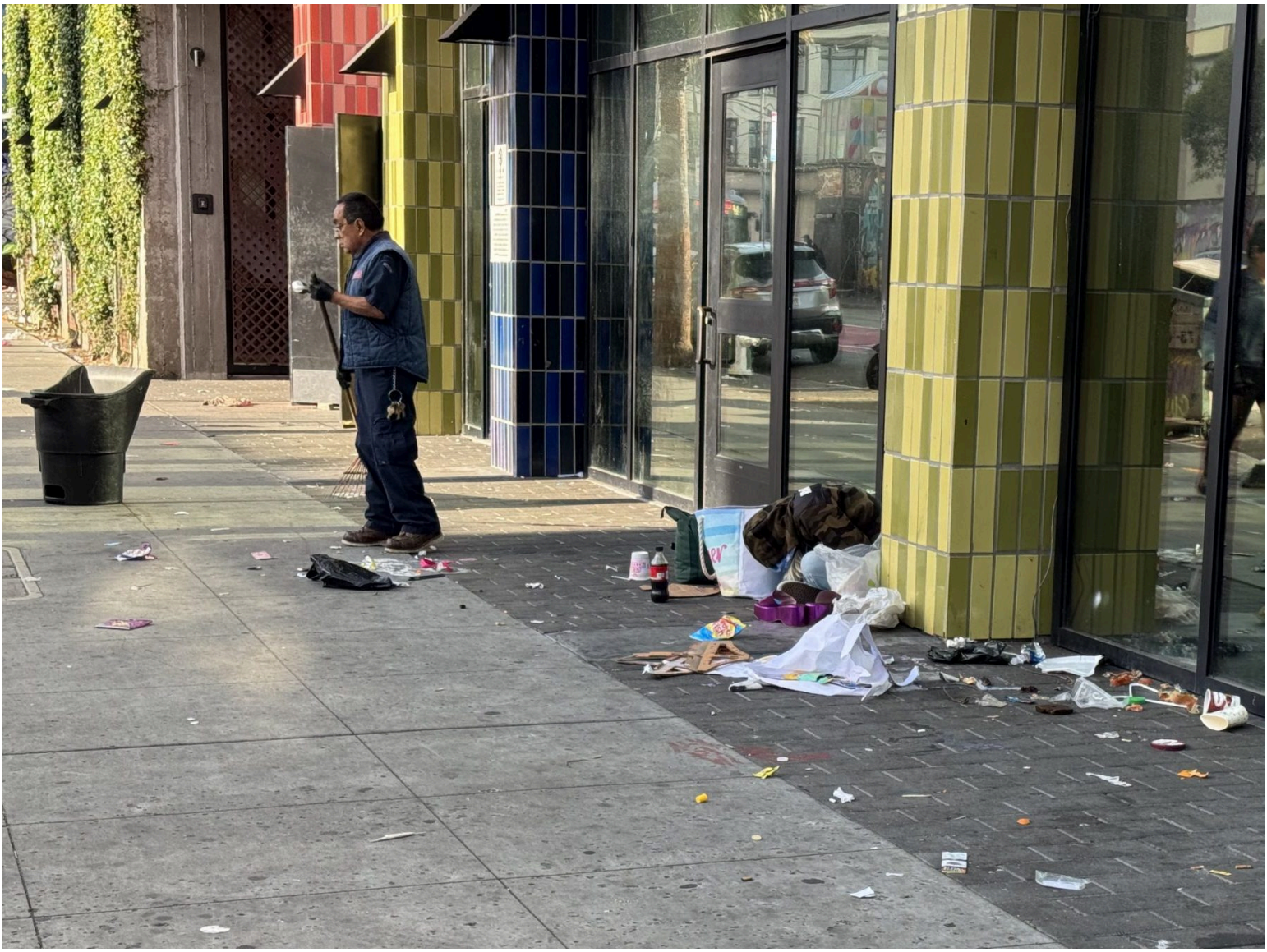
GOVERNMENT

# Parents, school staff, and residents at 16th and Mission sound the alarm: ‘It’s ugly to live like this’

by **OSCAR PALMA**
April 30, 2025, 4:00 am



A janitor sweeping the sidewalk in front of 1950 Mission St. on Monday, April 28, 2025. Photo by Oscar Palma.

On a recent Wednesday afternoon, Rosa Marroquin peeked out the front door of her son's pre-school at 1954 Mission St., between 15th and 16th streets.

Gripping her three-year-old boy's hand, she looked left and right a couple of times before walking out. She had reason to be fearful: A few months ago, while leaving school, Marroquin said, a man ran past them, followed by two others holding a knife and a gun.

"One of the men screamed, 'You better run, because you're dead if we catch you,'" she recalled. "I panicked and pushed my boy against the wall and used my body as a shield to protect him. The man got in a car and escaped, but we could've witnessed a murder."

Residents at the housing complex next to the school say their lives are similarly fraught. People wander in off the street, others smoke drugs, the sidewalk is trash-strewn, and residents are raising children in the midst of it all. Some of their apartments look out onto Wiese Street, which has become a **notorious place** for drug deals and other criminal activity.


Parents and residents say the conditions on Mission Street between 15th and 16th streets on Monday mornings are "terrible." This, from Feb. 24, 2025, shows the street before SFPD's crackdown on the plaza. Photo courtesy of Tiffany Fung.

A pile of trash on Mission Street between 15th and 16th streets on Monday Feb. 24, 2025. Photo courtesy of Tiffany Fung.

People congregate outside of the school at 1954 Mission St. on Monday Feb. 17, 2025. Photo courtesy of Tiffany Fung.

“It’s ugly to live like this. It’s a mess,” said Orlando Lopez, a tenant who sometimes wishes he could move. “My kids don’t wanna see all of this anymore.”

Marroquin and Lopez are among the 18 parents, school workers, and tenants who spoke to *Mission Local* about the “horrible” conditions outside the **Mission Campus** of the nonprofit Mission Neighborhoods Center and the 157-unit affordable housing complex at **1950 Mission St.**, where some of the students live. The early education center has 42 students and is connected to the housing complex, which opened four years ago and is known as La Fenix.

Mercedes Uriarte, the school’s principal, said she and others have alerted the police, but things haven’t changed much, not even with the crackdown at the plazas that began in mid-March, along with Mayor Daniel Lurie’s **visits** to **16th and Mission** streets.

**Bridge Housing**, the property manager at La Fenix, said in a statement that it is "committed to listening to all concerns about the safety of the property, and responding with urgency." It has already added security and cameras, and will soon implement "additional security enhancements," management wrote. "We take these reports seriously and are looking into them immediately."

After publication, Bridge also provided a **cache of photos** showing the sidewalks after cleaning.

Mission Housing, which is the resident community services provider and co-owner of the building, also said in an email that it remains committed to "listening to concerns and responding with urgency." It wrote that "the safety of everyone in and around La Fenix is not only a top priority, it's a shared responsibility we take seriously every day."

A representative of Mission Neighborhoods Center, which runs the school, wrote that the nonprofit "always supports the safety of our children and families."

Still, residents, parents and school administrators said the area is unsafe. At both the school and La Fenix, people who congregate outside the buildings are coming inside of the building. The entrance on Mission Street has a front-desk employee who checks IDs for non-residents, but residents said that people often get in through emergency doors in the back and on the side.

Mission Housing confirmed that the owners hired a security company to sit at the front desk and perform safety rounds. But still, tenants said, there are problems.

"The building is beautiful, but we can't sleep, because people come into the building," said one resident of La Fenix, describing outsiders wandering through the halls and knocking on doors.

Ana Chan, another resident, fears someone will open the door to her apartment and hurt her children — a fear, she adds, her daughters share.

"My daughter is afraid something will happen to me. Sometimes people don't let you go by … there's shouting and insults all the time," said Chan.

At the school, parents and administrators feel equally exposed.

An emergency door connecting La Fenix lobby to the school next door leaves students vulnerable, said Mercedes Uriarte, the school's principal. The emergency door is often left open by residents, who use socks and other objects to keep it from closing. She fears outsiders will use it to enter the school grounds.

The sidewalk outside 1950 Mission St. immediately after cleaning on Wednesday, April 30. Photo courtesy of Bridge Housing.

Bridge Housing has not fixed the issue, Uriarte said.

The school's front door also takes about seven seconds to fully close, and when parents don't wait for it to shut, people on the street have ambled in. Parents love the school, but fear what might happen if a stranger walks in during class.

"On more than one occasion, we've had men just wander around the school. It's so scary, because we have very young children here," said Uriarte.


The gates that separate the playgrounds from the housing complex at 1950 Mission St. on Monday April 28, 2025. Photo by Oscar Palma.

Once, she said, “a man walked with a knife hanging from his waist, and crossed the playgrounds towards the building.”

Even without the anxiety about unstable people entering the school or the housing complex, there is a constant reminder of the misery outside.

“It’s not healthy for our kids to get out of school and see people consuming drugs,” said a school parent. “My son asks me why people live on the street and smoke.”

The front door is often covered in urine, said Uriarte and several parents. On one occasion, Uriarte said, a person defecated so near to the front door that opening it meant spreading excrement all over the entrance.


People congregate outside of the school at 1954 Mission St. on Monday Feb. 17, 2025. Photo courtesy of Tiffany Fung.


A man, semi-naked, stands outside of the school at 1954 Mission St. on Monday Feb. 17, 2025. Photo courtesy of Tiffany Fung.

As residents and parents come and go, they witness semi-naked and naked individuals, and people smoking drugs. One neighbor took a photograph of two people hanging out below his window on Wiese Street, and only realized later that they were having sex.

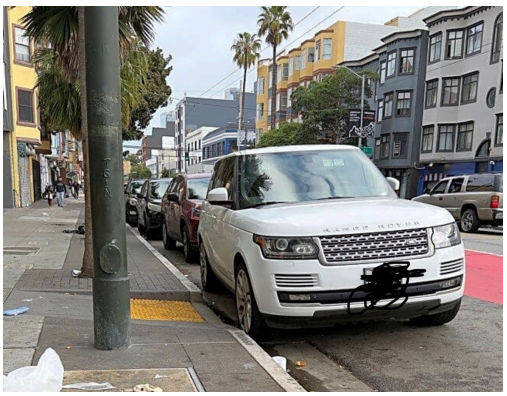
Waleska Zeron's living room at La Fenix where she lives with her three-year-old daughter and 12-year-old son, faces Wiese Street. She has seen all kinds of illicit activity go on from her living room, she said.

Most maddening for Zeron is trying to help her son navigate the area: He's a wheelchair user, and there's a de facto obstacle course outside their front door.

On a recent Friday afternoon, this reporter stood next to Zeron as her son was being dropped off by a school bus. A parked car blocked the wheelchair-accessible ramp in front of their building, as it often does.

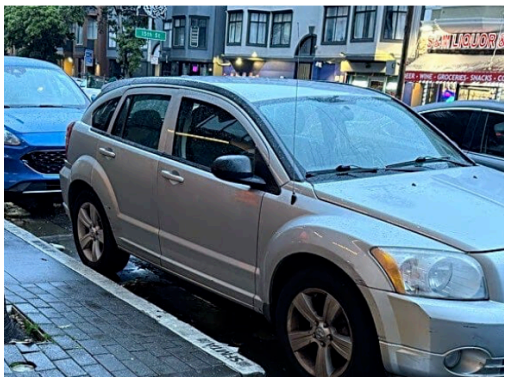
“It is so infuriating,” said Zeron. “Sometimes they’ve had to drop my son off at the corner because the ramp is blocked. During the weekends, I have to walk in the street with my son because we can’t use the sidewalk.”

Zeron said she’s reported the cars to 311 multiple times, and the city has come to give a citation. But the issue still remains. She’s never witnessed a car being towed.



A car blocking the wheelchair-accessible ramp on Thursday March 27, 2025. Photo courtesy of Waleska Zeron.

A car blocking the wheelchair-accessible ramp on Thursday March 13, 2025. Photo courtesy of Waleska Zeron.



A car blocking the wheelchair-accessible ramp on Saturday Feb. 15, 2025. Photo courtesy of Waleska Zeron.

The sidewalks are also packed with garbage, burnt aluminum foil, syringes and empty alcohol containers.

The block of Mission Street between 15th and 16th streets becomes a “flea market” of illicit sales over the weekend, extending to both sides of the street. On Monday mornings, there is so much garbage left behind that parents have to watch each step so their kids don’t walk on drug detritus.

“You can’t walk this sidewalk on the weekends,” said Aracely Navas, another parent. “I just stay home.”

Tiffany Fung, a teacher of almost three years at the school, said she has reported the conditions to District 9 supervisors over the years, but little has changed. She recently sent an email to Supervisor Jackie Fielder, attaching photos of people blocking the school’s main entrance.

On Feb. 19, Fung got a response from Fielder’s office. In it, an aide said safety was a priority for Fielder, and that the office was working closely with the Department of Emergency Management and Mission Station Captain Liza Johansen to bring resources to the area.

Three weeks later, a **police command center** arrived at the 16th Street BART Plaza, and **police operations** began in the area. Illicit activity directly on the plaza has moved **elsewhere**, but residents and parents say not

much has changed.

Carolia Muñoz, who has lived at 1950 Mission St. for three years, says just getting to the front door of her apartment remains a challenge.

“My five-year-old daughter asks me why people fight and throw garbage on the street,” said Muñoz.

It’s a difficult question to answer.

“At times when I walk him to school we have to walk on the street to avoid the garbage and the people blocking the sidewalks,” said Gabriela Giron, a parent of a three-year-old boy. “He doesn’t understand it yet, but he shows sympathy. He tells me, ‘Mom, that poor kid is sleeping on the ground and it’s cold outside.’”


The sidewalk in front of 1950 Mission St. on Monday, April 28, 2025. Photo by Oscar Palma.

Mission Street between 15th and 16th streets was packed with garbage on Monday, April 28, 2025. Photo by Oscar Palma.

## Nat

April 30, 2025, 1:39 pm at 1:39 pm

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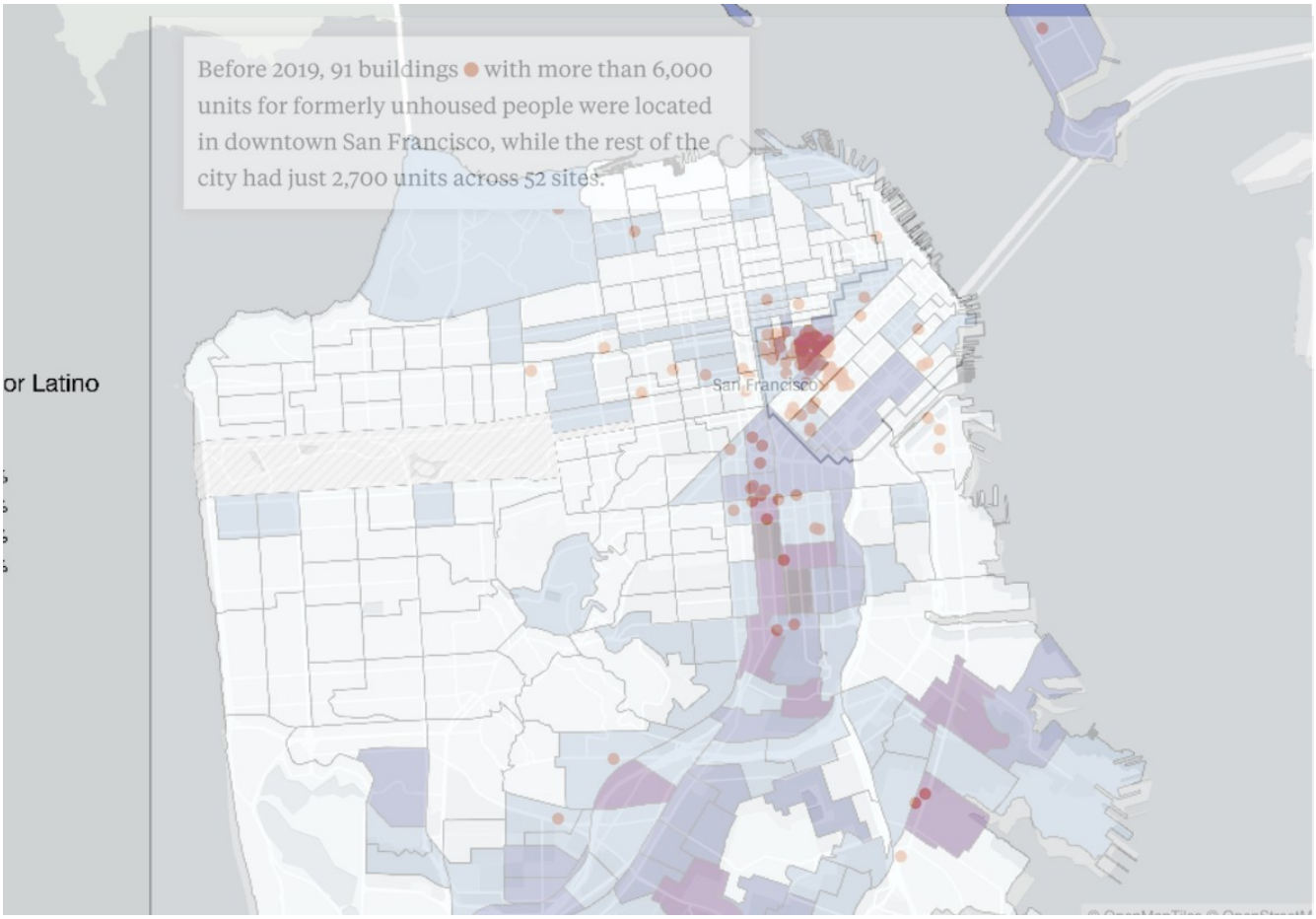
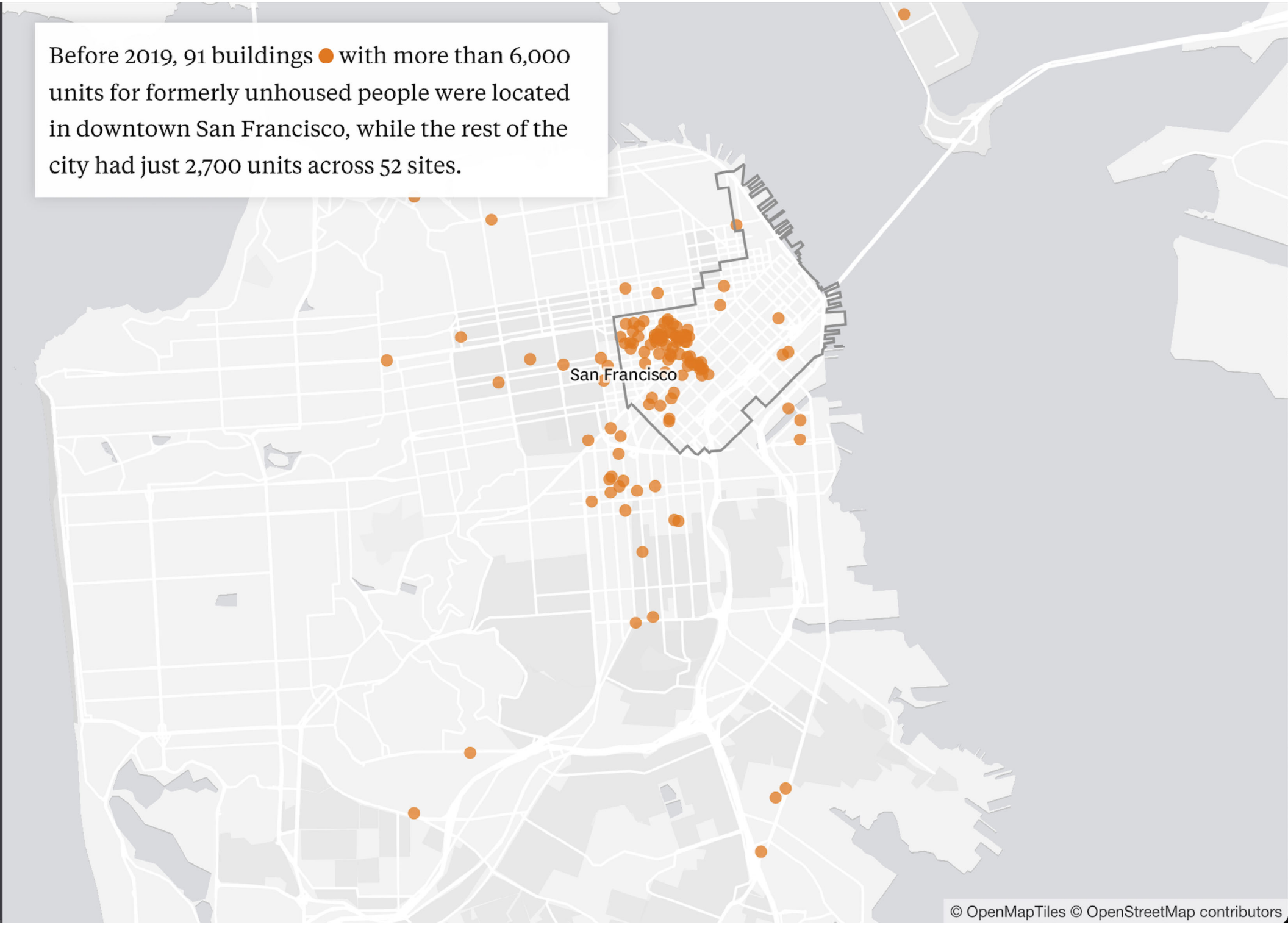
# Permanent Supportive Housing clustered in communities of color, including the Latino community in The Mission.

Shaded census tracts: relative Latino populations
Red dots: Permanent Supportive Housing




Before 2019, 91 buildings ● with more than 6,000 units for formerly unhoused people were located in downtown San Francisco, while the rest of the city had just 2,700 units across 52 sites.
San Francisco
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FULL ACCESS Articles Publication Date: 1 February 2023

# Racial Disparities in Adversity During Childhood and the False Appearance of Race-Related Differences in Brain Structure

Nathalie M. Dumornay, B.S., Lauren A.M. Lebois, Ph.D., Kerry J. Ressler, M.D., Ph.D., and Nathaniel G. Harnett, Ph.D. | AUTHORS INFO & AFFILIATIONS

**Publication**: American Journal of Psychiatry Volume 180, Number 2 https://doi.org/10.1176/appi.ajp.21090961



## Abstract

**Objective:**

Black Americans in the United States are disproportionately exposed to childhood adversity compared with White Americans. Such disparities may contribute to race-related differences in brain structures involved in regulating the emotional response to stress, such as the amygdala, hippocampus, and prefrontal cortex (PFC). The authors investigated neuroanatomical consequences of racial disparities in adversity.

**Methods:**

The sample included 7,350 White American and 1,786 Black American children (ages 9–10) from the Adolescent Brain Cognitive Development Study (public data release 2.0). Structural MRI data, parent and child self-reports of adversity-related measures, and U.S. Census neighborhood data were used to investigate the relationship between racial disparities in adversity exposure and race-related differences in brain structure.

**Results:**

Black children experienced more traumatic events, family conflict, and material hardship on average compared with White children, and their parents or caregivers had lower educational attainment, lower income, and more unemployment compared with those of White children. Black children showed lower amygdala, hippocampus, and PFC gray matter volumes compared with White children. The volumes of the PFC and amygdala, but not the hippocampus, also varied with metrics of childhood adversity, with income being the most common predictor of brain volume differences. Accounting for differences in childhood adversity attenuated the magnitude of some race-related differences in gray matter volume.

**Conclusions:**

The results suggest that disparities in childhood adversity contribute to race-related differences in gray matter volume in key brain regions associated with threat-related processes. Structural alterations of these regions are linked to cognitive-affective dysfunction observed in disorders such as posttraumatic stress disorder. More granular assessments of structural inequities across racial/ethnic identities are needed for a thorough understanding of their impact on the brain. Together, the present findings may

provide insight into potential systemic contributors to disparate rates of psychiatric disease among Black and White individuals in the United States.

Children across the United States grow up in vastly different environments that shape their responses to stress and ability to function later in life. Uncontrollable factors such as the neighborhood children are born into can contribute to significant early-life adversity, such as enduring socioeconomic disadvantage or increased risk of violence exposure. In the United States, Black children are disproportionately burdened with these adverse life experiences compared with White children (1). Current U.S. Census data show that Black households, on average, have a lower median income, lower educational attainment, and higher rates of unemployment and poverty compared with White households (2). Moreover, research suggests that Black children are more likely to be exposed to trauma and domestic violence and are more likely to have a parent who died, an incarcerated parent, or divorced or separated parents compared with White children (3–5). Additionally, research has shown that Black children live in disproportionately disadvantaged neighborhoods and are more likely than White children to be exposed to neighborhood violence (6, 7). These racial disparities are not random. Rather, they are deep-rooted structural inequalities that result from a history of disenfranchisement of racially minoritized groups (e.g., slavery, segregation) that reinforce themselves through societal norms and practices (i.e., systemic racism) (8).

Early-life adversity can have lasting negative consequences on mental health in adulthood. Several studies have found positive associations between childhood adversity (e.g., witnessing violence and low socioeconomic status) and prevalence of poor psychosocial and behavioral outcomes later in life, including posttraumatic stress disorder (PTSD), anxiety, and depression, problematic drug and alcohol use, low life satisfaction, suicide attempts and ideation, and perpetration of violence (9–15). Thus, the literature demonstrates a strong relationship between adverse life experiences and outcomes such that more adversity experienced in childhood is tied to a greater risk of deleterious mental health outcomes later in life. Further, recent research has emphasized that different types of adversity are associated with distinct outcomes. Specifically, “threat” type adversity (e.g., physical or sexual abuse, witnessing violence) is more often associated with dysregulated emotional responses, whereas “deprivation” type adversity (e.g., poverty, neglect) is more typically associated with language and cognitive deficits (16–18).

Previous work has shown that early exposure to adversity (i.e., either threat or deprivation) is associated with structural alterations of brain regions, such as the prefrontal cortex (PFC), amygdala, and hippocampus, which support healthy emotional functioning in response to threat and stress (19–21). Therefore, racial disparities in childhood adversity may contribute to race-related differences in the structure of the PFC, hippocampus, and amygdala. The Adolescent Brain and Cognitive Development (ABCD) Study, a large MRI study of childhood development in the United States, may be well-suited to investigate the impacts of racial disparities in adversity on the brain. Previous ABCD Study analyses have found that socioeconomic status (22) and trauma exposure (23) are associated with differences in thickness and volume of threat-related brain regions, and that greater neighborhood disadvantage is associated with greater amygdala reactivity in response to faces (24). Further, socioeconomic status partially mediates the association between race and some aspects of gray matter morphology (25, 26). Relatedly, previous work outside the ABCD Study found lower neural reactivity to threat within the PFC, hippocampus, and amygdala in Black participants compared with White participants,

and these differences were partially attributable to racial disparities in negative life experiences (27). The literature thus suggests that adversity is associated with differential structure and functional responses within threat-related neural circuitry, although no work that we are aware of has investigated the relationship between racial disparities in adversity and the structure of this circuitry as a whole during childhood. While emergent research has investigated the impacts of racial discrimination on the brain, it is also important to understand how contextual factors (e.g., systemic racism) may also impact threat neurocircuitry (28–31). Understanding the potential effects of such disparities on these brain structures is critical for a fuller understanding of the impacts of stress on the developing brain and creating generalizable neurobiological models of disease.

In this study, we investigated the relationship between racial disparities in adversity exposure and race-related differences in brain structure among participants in the ABCD Study. We hypothesized that Black American children would have experienced more adversity than White American children in the sample. We further hypothesized that greater exposure to adverse life experiences would be related to lower gray matter volume in the amygdala, the hippocampus, and several subregions of the PFC. Finally, we anticipated that Black and White children would show differences in gray matter volume of these regions and that these differences would be partially explained by racial differences in exposure to adversity.

# Methods

## Participants

We used data from the ABCD Study's annual curated NIH public release 2.0 (released in March 2019; accessed in July 2019 from the NIMH Data Archive [NDA]) (32). Participants (N=11,878) ages 9–10 were recruited from 21 research sites across the United States. The present analyses included 9,382 participants (White, N=7,516; Black, N=1,866; male, N=4,921; female, N=4,461) (descriptive statistics are provided in Table 1). Children were primarily contacted and recruited through U.S. public and private schools within the 21 catchment areas. Less than 10% of the sample was recruited through other methods, which included mailing lists, affiliates and referrals, summer programs, and twin registries. The methods for sampling and recruiting have been described in detail elsewhere (33).

**TABLE 1**. Demographic characteristics of participants in a study of childhood adversity and brain structure

| | | | | | | Analysis | | |
|---|---|---|---|---|---|---|---|---|
| **Characteristic** | **Total N** | **White American** | | **Black American** | | **Statistic** | **df** | **p** |
| | | Mean | SD | Mean | SD | | | |

EXPAND TABLE

a The test was corrected for unequal variances because of violation of Levene's test for homogeneity of variance.

b Neighborhood disadvantage, family conflict, material hardship, and trauma history are four of the seven indices of adversity included in the statistical models. Neighborhood disadvantage was quantified using the weighted Area Deprivation Index sum

score. Family conflict was quantified using the Youth Family Conflict Scale. Material hardship was quantified using the questions in the participant demographic screener. Trauma history was assessed using the Schedule for Affective Disorders and Schizophrenia for School-Age Children for DSM-5. See the Methods section for further detail.

## Measures

### Demographic history.

Family demographic data were acquired using a standardized survey, completed by participants' parents (NDA: pdem02), that assessed both parent and child race/ethnicity, parental education and employment, and family income, among other variables. Parents identified their children as a member of one or more racial identities from 16 categories (e.g., White, Black/African American, Alaska Native, Samoan, Vietnamese). The present analyses focused on environmental and brain structure relationships specifically in White and Black children. Children who were identified by their parents as both Black and White were excluded from our analysis.

Parents and caregivers self-reported their current employment status, their highest educational attainment, and their total family annual income at the time of the interview. Parent educational attainment was self-reported for 22 levels, from "never attended/kindergarten only" through "doctoral degree," and was recoded into seven ordinal groups (see Table 1) for the present analyses. Employment status was recategorized from 11 possible categories into two groups of "currently employed" or "not currently employed." The "currently employed" group consisted of parents/caregivers who endorsed "working now," "stay-at-home parent," "student," "maternity leave," or "sick leave" as their employment status. The "not currently employed" group consisted of those who endorsed "temporarily laid off," "looking for work," "disabled," or "unemployed, not looking for work" as their employment status. Retired individuals and those who did not provide employment information were excluded from the analyses. Family income was self-reported for 10 levels, <$5,000 to ≥$200,000. The family income variable was not modified for analysis.

### Neighborhood disadvantage.

Neighborhood disadvantage was measured using the Area Deprivation Index (ADI) (34), which was included as part of the ABCD Study assessments of residential history (NDA: abcd_rhds01). Briefly, the ADI is a factor-based index that uses 17 socioeconomic indicators from the U.S. Census Survey (e.g., poverty, housing, employment) to characterize a given neighborhood. Parents/caregivers of participants were asked to provide up to three primary addresses, and the first address was used to derive regional U.S. Census information to determine the ADI. Data for each census region were queried from the 2011–2015 American Community Survey 5-year summary database (U.S. Census Bureau, 2016). A weighted ADI sum score that represented a participant's level of neighborhood disadvantage was used in the statistical analyses (described further in reference 35). Greater weighted ADI sum score represented higher neighborhood disadvantage. In exploratory analyses, given emerging research on both racial disparities in toxin/pollutant exposure and their impacts on the brain (36, 37), we further assessed potential impacts of neighborhood inequities on the brain by including measures of particulate matter (PM2.5) and ground pollution, indexed by nitrogen dioxide ($NO_2$), from participants' residential history (the methods and analyses are described in the online supplement).

### Family conflict.

Family conflict was assessed with the family conflict subscale of the Youth Family Environment Scale (NDA: abcd_fes01). This subscale consists of nine items completed by the children that assessed physical and

emotional conflicts within the household (e.g., the extent to which family members become openly angry or criticize or hit each other). Participants rated each item as either "true" or "false" (coded 1 or 0, respectively), and three items with negative phrasing (e.g., "family members rarely become openly angry") were reverse-coded for analyses. The sum score from the family conflict subscale items served as an index of family conflict and was included in the statistical analyses.

**Material hardship.**

Family material hardship was assessed using a material hardship questionnaire collected as part of the parent demographic survey (NDA: pdem02). The questionnaire consists of seven items related to economic insecurity (e.g., "couldn't afford to pay rent," "had utilities shut off due to nonpayment," "couldn't afford to go to the doctor"). The sum score of the material hardship items was used in the statistical analyses.

**Trauma history.**

Participants' trauma history was assessed using the Schedule for Affective Disorders and Schizophrenia for School-Age Children for DSM-5 (K-SADS-5). Trauma history was obtained from parent reports based on the 17-item traumatic events module of the K-SADS-5 (NDA: abcd_ptsd01). The items included events such as motor vehicle accident, natural disaster, and sexual and nonsexual assault. Endorsed items were summed for each child to create a trauma history score.

**Structural brain imaging.**

Structural MRI data were collected across 21 sites on Siemens Prisma, General Electric 750, and Philips 3-T scanners, using prospective motion correction when available. Detailed information on imaging protocols, parameters, and processing of the structural imaging data has been published elsewhere (38, 39). Briefly, structural MRI (T1-weighted and T2-weighted) data were preprocessed by the ABCD team using FreeSurfer, version 5.3.0 (https://surfer.nmr.mgh.harvard.edu). Images were corrected for gradient nonlinearity distortions and head motion and resampled into alignment with an averaged reference brain. The cortical surface was then reconstructed, and subcortical regions of the brain were segmented. For the present study, gray matter volume of cortical regions of interest based on the Desikan-Killiany atlas (40) and gray matter volume of subcortical regions of interest and estimated intracranial volume based on FreeSurfer segmentations (41) were used in the analyses. Participants whose MRI data failed T1 or T2 quality-control checks (NDA: mriqcrp102) or failed FreeSurfer quality control (NDA: freesqc01) were excluded from the analyses (N=832). An independent-samples t test demonstrated that racial groups differed in intracranial volume ($t=19.44$, $df=8235$, $p<0.001$). Thus, the gray matter volume of our a priori regions of interest (PFC, hippocampus, amygdala, and insula) was normalized as a proportion of estimated intracranial volume ([region volume/intracranial volume]×100) and averaged across left and right hemispheres. Subdivisions of the PFC based on the Desikan-Killiany atlas (i.e., frontal pole, superior frontal gyrus, rostral anterior cingulate, pars opercularis, medial orbitofrontal cortex, lateral orbitofrontal cortex, caudal middle frontal gyrus, caudal anterior cingulate, rostral middle frontal gyrus, pars orbitalis, and pars triangularis) were used as separate regions of interest given that these regions may have differing functions and thus show differing relationships. Given growing understanding of the role of the insula in threat processing (42, 43), we included the insula as another region of interest for analysis. In total, gray matter volumes of 14 regions of interest were included in the statistical analyses (NDA: abcd_smrip101; abcd_smrip201).

### Statistical Analysis

Statistical analyses were conducted using SPSS, version 24.0 (IBM, Armonk, N.Y.). The number of participants available for statistical tests varied because of incomplete data on some measures. Where appropriate, t tests were corrected for unequal variances, and the Bonferroni correction for multiple comparisons was applied for each family of tests. We assessed group differences in adversity measures using chi-square tests for categorical variables (i.e., employment status) and independent-samples t tests for continuous and ordinal variables (i.e., income, educational attainment, neighborhood disadvantage, family conflict, material hardship, trauma history). A Bonferroni correction was applied to control for multiple comparisons within this family of tests (seven tests, p=0.05/7=0.007). We also conducted exploratory analyses with participant PTSD symptoms reported by the caregivers, which are detailed in the online supplement.

Next, we used 14 linear mixed-effects models to assess race-related differences in gray matter volumes of the a priori regions of interest. The models accounted for nesting of families (NDA: acpsw03) and covaried for age, gender, and scanner type (NDA: abcd_mri01) with restricted maximum likelihood estimation. The Bonferroni correction was applied to control for multiple comparisons within this family of tests (14 tests, p=0.05/14=0.0035). We used additional mixed-effects models to assess the relationship between regional gray matter volume and the measures of childhood adversity (one brain region per model, 14 models total). The models included the seven indices of adversity (i.e., educational attainment, employment status, income, neighborhood disadvantage, family conflict, material hardship, and trauma history) as independent variables and gray matter volume for each brain region as the dependent variable. We again covaried for family relatedness, age, gender, and scanner type. We conducted separate independent-samples t tests between the racial groups using the Destrieux atlas to validate the robustness of the effect across brain parcellations and covariate approaches (see Table S1 in the online supplement).

We also investigated whether accounting for childhood adversity modulated race-related differences in regional gray matter volumes, similar to prior work (39). We conducted parallel mediation analyses in the JASP statistical package (https://jasp-stats.org/) to calculate the standardized estimates of the total, direct, and indirect effects of racial group on regional gray matter volume as well as the percentage of variance mediated by the adversity metrics. Parallel mediation models used full information maximum likelihood for estimation. Participant racial group was included as the predictor variable, and metrics of adversity (educational attainment, employment status, income, neighborhood disadvantage, family conflict, material hardship, and trauma history) were included as mediators. The dependent variables for the mediation models were the residual gray matter volume values estimated from linear mixed-effects models that accounted for age, scanner, gender, and family relatedness (equivalent to the above models without including racial group). An exploratory parallel mediation analysis was also conducted to determine whether accounting for other neighborhood variables such as exposure to pollutants further explained race-related variability in gray matter volume.

## Results

### Race-Related Differences in Adversity

Chi-square and independent-samples t tests revealed that, on average, Black and White children in the present sample differed in parent employment status, parent educational attainment, and family income (Table

1). Specifically, White children's parents were three times more likely to be currently employed. White children's parents also had higher educational attainment and greater family income compared with Black children's parents; 75.2% of White parents had a college degree, compared with 40.6% of Black parents, and 88.1% of White parents made $35,000 a year or more, compared with 46.7% of Black parents. White children also experienced less family conflict, less material hardship, less neighborhood disadvantage, and fewer traumatic events compared with Black children (Table 1). Racial differences in trauma exposure remained significant when nontraumatized individuals were removed from the analysis ($t=-2.18$, $df=3194$, $p=0.03$).

## Race-Related Differences in Gray Matter Volume

Linear mixed-effects models revealed that Black and White children in the present sample differed in gray matter volumes in 11 of the 14 a priori regions of interest, after covarying for family relatedness, gender, age, and scanner type (Figure 1; Table 2). (An alternative visualization of the results is provided in Figure S1 in the online supplement.) White children showed greater gray matter volumes compared with Black children in the amygdala, hippocampus, frontal pole, superior frontal gyrus, rostral anterior cingulate, pars opercularis, pars orbitalis, lateral orbitofrontal cortex, caudal middle frontal gyrus, and caudal anterior cingulate and smaller gray matter volume compared with Black children in the pars triangularis (all p values <0.001). No difference was observed in gray matter volume of the insula, rostral middle frontal gyrus, or medial orbitofrontal cortex between the groups. Similar results were observed in the Destrieux parcellation (see Table S1 in the online supplement).

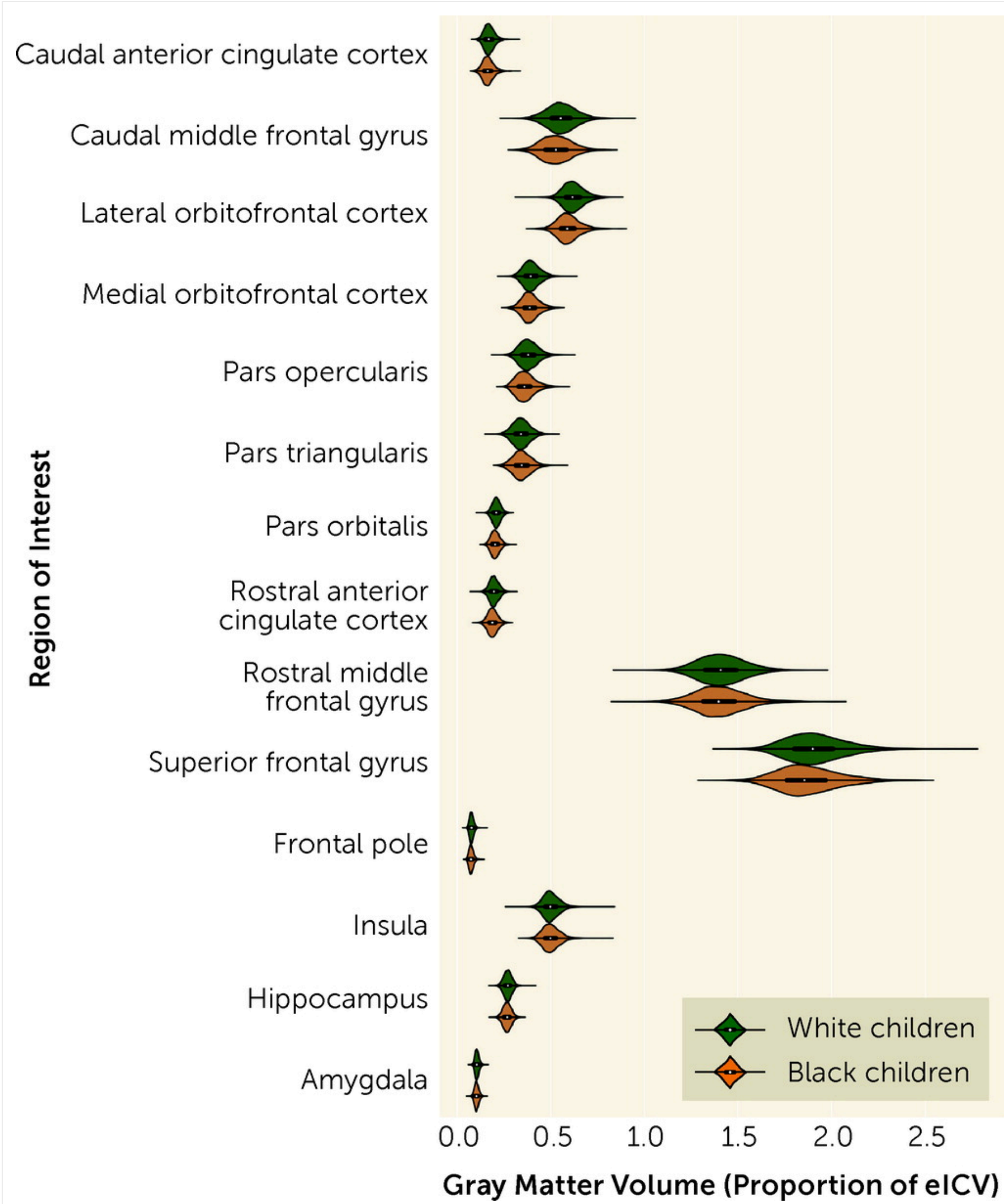


**FIGURE 1**. Race-related differences in regional gray matter volume in a study of childhood adversity and brain structure[a]
[a]Plots inside distributions represent box plots for each group by brain region. eICV=estimated intracranial volume.

**TABLE 2**. Race-related differences in gray matter volume (in $mm^3$) of a priori regions of interest in a study of childhood adversity and brain structure[a]

| | White American | | Black American | | | |
|---|---|---|---|---|---|---|
| **Region** | **Estimated Marginal Mean** | **SE** | **Estimated Marginal Mean** | **SE** | **t** | **p** |
| **Caudal anterior cingulate cortex** | 0.173 | 0.000 | 0.168 | 0.001 | 6.00 | <0.001[b] |

EXPAND TABLE

a N=8,237 for this analysis. The t statistics were obtained from linear mixed-effects models that also accounted for effects of scanner type, age, gender, and family relatedness.

b The t test result was significant after Bonferroni correction (0.05/14=0.0035).

## Relationships Between Adversity and Gray Matter Volume

Linear mixed-effects models assessed the effects of the indices of adversity (income, education, employment, neighborhood disadvantage, material hardship, trauma history, and family conflict) on gray matter volume for each region of interest, while covarying for family relatedness, age, gender, and scanner type. Childhood adversity was associated with gray matter volume in the caudal anterior cingulate, caudal middle frontal gyrus, lateral orbitofrontal cortex, medial orbitofrontal cortex, pars opercularis, pars orbitalis, rostral anterior cingulate, rostral middle frontal gyrus, superior frontal cortex, frontal pole, insula, and amygdala (Table 3). Specifically, we observed unique effects of all adversity indices except trauma history and family conflict, which were not uniquely related to gray matter volume in any of the models. Income was the most frequent predictor, having effects on gray matter volume in eight of 14 regions.

**TABLE 3**. Summary of mixed-effects analyses predicting gray matter volume in a study of childhood adversity and brain structure[a]

| | Material Hardship | | Parental Employment | | Family Income | | Parental Education | | Famil |
|---|---|---|---|---|---|---|---|---|---|
| **Region** | **b** | **t** | **b** | **t** | **b** | **t** | **b** | **t** | **b** |
| **Caudal anterior** | −0.001 | −2.34* | 0.002 | 1.22 | <0.001 | 2.21* | <0.001 | 0.72 | <−0.00 |

EXPAND TABLE

a Linear mixed-effects models also accounted for effects of scanner type, age, gender, and family relatedness.

*p<0.05. **p<0.01. ***p<0.001.

We next sought to determine whether accounting for childhood adversity affected the magnitude of race-related differences in brain structure. Standardized estimates from the parallel mediation models are provided in Table 4. Standardized estimates for total and direct effects for each brain region are shown for each brain region and plotted in Figure 2. Direct effects of racial group for several brain regions were smaller than total effects, with significant partial mediation observed for the caudal anterior cingulate, caudal middle frontal gyrus, lateral orbitofrontal gyrus, pars triangularis, pars orbitalis, superior frontal gyrus, and frontal pole (Figure 3). Exploratory parallel mediation models that accounted for additional neighborhood variables of pollutant exposure showed similar effects; in these models there was no mediation for the pars triangularis or frontal pole, but full mediation was observed for the superior frontal gyrus (described in the online supplement). These findings demonstrate that racial disparities in adversity partially mediate some of the race-related differences in regional gray matter volume.

**TABLE 4**. Summary of parallel mediation analyses of race-related effects on gray matter volume accounting for adversity[a]

| Region | Total Effect (c) | p | Total Indirect Effect (ab) | p | Direct Effect (c') | p | Percentage Mediated[b] (%) |
|---|---|---|---|---|---|---|---|
| **Caudal anterior cingulate cortex[c]** | −0.17 | <0.001 | −0.04 | 0.006 | −0.13 | <0.001 | 26.04 |

EXPAND TABLE

a Gray matter volume was estimated from residuals of linear mixed-effects models that included age, gender, scanner, and family relatedness (i.e., the isolated race-related effect).

b Percentage mediated is calculated by ab/c×100. It is omitted for regions in which no significant total effect was observed.

c The model met criteria for partial or full mediation.

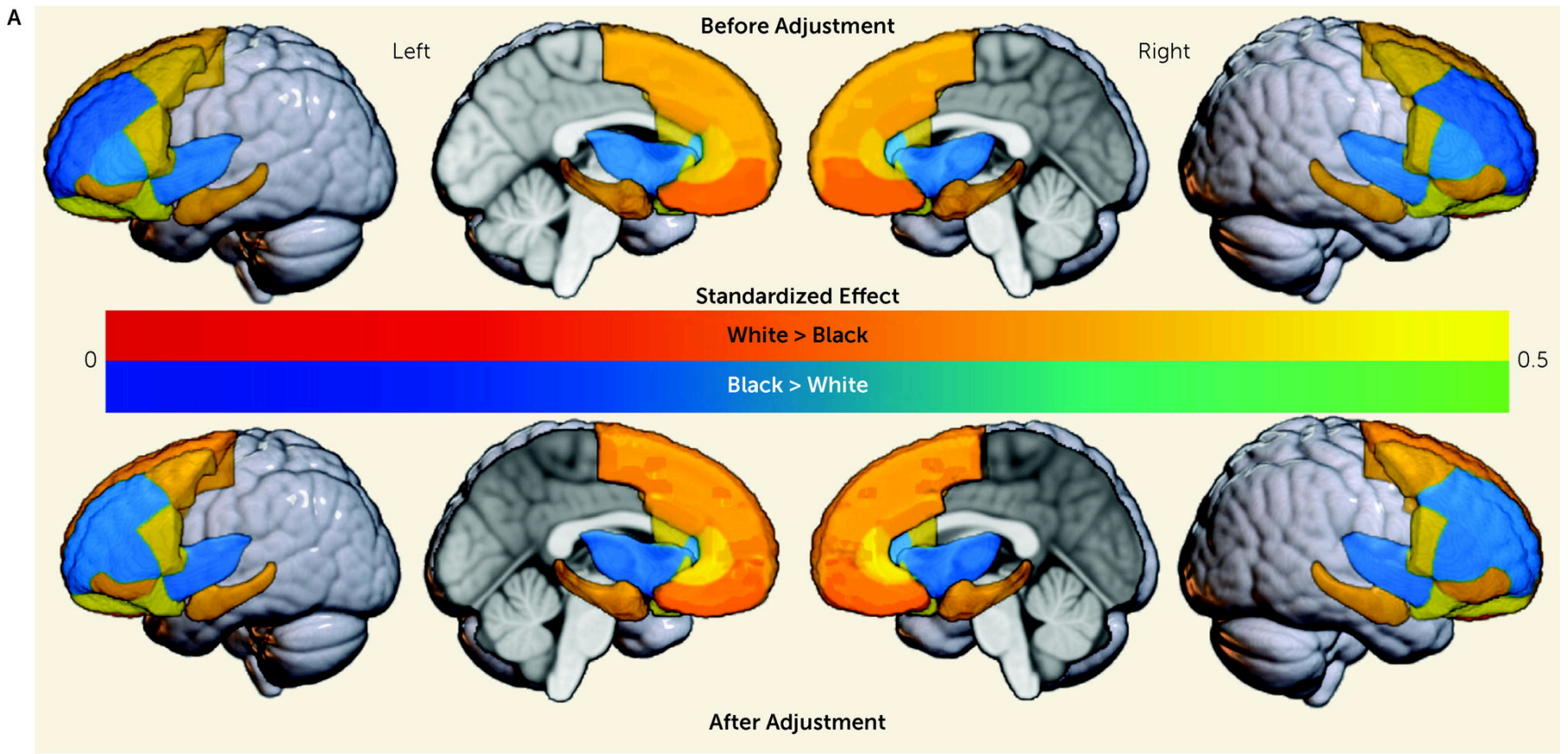

**FIGURE 2**. Effects of racial disparities in childhood adversity on race-related differences in brain structure[a]

[a]Standardized estimates were calculated from the parallel mediation analyses for differences in gray matter volume between Black and White children before (total effect) and after (direct effect) accounting for disparities in sociodemographic factors. Panel A is a graphical representation of estimates where White > Black (warm colors) and Black > White (cool colors) before (top) and after (bottom) accounting for racial disparities. Panel B is a plot of the standardized estimates per region for the total (green) and direct (orange) effects on gray matter volume data. Error bars indicate 95% confidence intervals.

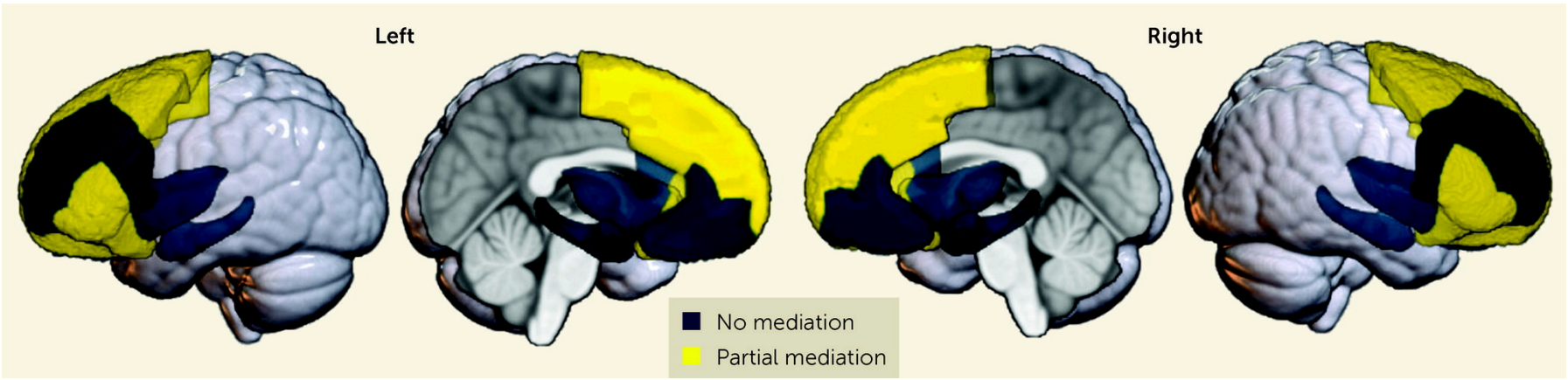


**FIGURE 3**. Graphical representation of parallel mediation results in a study of childhood adversity and brain structure[a]

[a]Parallel mediation modeling revealed no, partial, or full mediation of race-related differences on regional gray matter volume by the adversity metrics. Blue indicates no significant total and/or indirect effect, and yellow indicates significant total, indirect, and direct effect.

### Associations Between Adversity and Reported PTSD Symptoms

Given findings on PTSD from previous research, we conducted supplementary analyses on race-related differences in PTSD symptoms and the relationship with adversity, which are described in the online supplement. Black children had significantly greater PTSD symptom severity, and symptom severity was further predicted by adversity (see Table S2 in the online supplement). Accounting for adversity partially mediated race-related differences in PTSD symptoms but also attenuated correlations between regional gray matter volumes and PTSD symptom severity (see Table S3 in the online supplement).

## Discussion

In this study, we investigated the neuroanatomical consequences of racial disparities in adversity during childhood. We found that, compared with White American children, Black American children endorsed more traumatic events, material hardship, and family conflict and lived in more disadvantaged neighborhoods, and their caregivers had lower income and educational attainment and were more likely to be unemployed. Greater exposure to these adversities was linked to lower gray matter volumes in the amygdala and several subregions of the PFC. Accordingly, Black children showed lower gray matter volumes in the amygdala, the hippocampus, and several subregions of the PFC compared with White children. Accounting for racial disparities in exposure to adversity partially mediated race-related differences in a number of regions, including the caudal anterior cingulate, lateral orbitofrontal gyrus, and superior frontal gyrus. However, although our findings held when other adversity disparities were considered, such as pollution exposure, there remain other structural inequities that may contribute to race-related differences in the brain, which must be investigated in future research. Taken together, our findings highlight the impact that disparities in early-life adversity have on race-related differences in the structure of neural circuitry associated with PTSD and other trauma- and stress-related disorders.

One way to conceptualize the present findings is that a significant portion of the gray matter volume differences reflect racial disparities in toxic stress. Toxic stress refers to prolonged exposure to adverse experiences that leads to excessive activation of stress response systems and an accumulation of stress hormones, which in turn disrupt the immune and metabolic regulatory systems and ultimately the developing architecture of the brain (44–46). Importantly, the effects of toxic stress may be dependent on the relative timing of stress exposure. The PFC, amygdala, and hippocampus undergo rapid development beginning in early childhood and continuing until early adulthood (47), and this development is punctuated by sensitive periods where stress may have a larger impact (48, 49). In fact, previous work suggests that exposure to adversity during these sensitive periods may have direct effects on the PFC, amygdala, and hippocampus as well as on subsequent threat responses and regulation (50–54). Moreover, our results showed that income was the most common predictor of gray matter volume disparities, aligning with previous research showing that the effects of low socioeconomic status, and specifically low income, have profound effects on neurobiological trajectories (22, 24, 25, 55–57). Taken together, early-life adversity may act as a toxic stressor that disproportionately impacts Black children as a result of their significantly greater exposure to adversity and contributes to differential neural development of key threat-processing regions.

The impacts of toxic stress may be immediate or temporally delayed, depending on the specific brain region. For example, one study examining the effect of childhood sexual abuse on regional brain development (58) found an association between abuse and lower hippocampal volume at ages 3–5 but with lower frontal cortex volume at ages 14–16. In the present study, no effects of adversity were found in the hippocampus, although effects were found in the amygdala and the prefrontal cortex, potentially reflecting the impact of differential sensitive periods of brain development in these regions. A potential delayed effect may partially explain the relatively small magnitude of racial differences in gray matter volume of threat-related regions. Specifically, it may be that the disparities in adversity do not lead to major immediate differences but will be potentiated into adulthood in either brain structure or brain function (27). Future analyses of the longitudinal ABCD data set may shed light on what potential long-term impacts these disparities may have on the brain and behavior. In sum, our findings may reflect the neuroanatomical consequences of racially disparate environments of toxic stress.

We note here that many of the observed race-related and adversity effects had relatively small effect sizes despite many findings being highly statistically significant. The ABCD Study has high statistical power for small effects, afforded by its large sample size, and these effects are likely more accurate to the general population than traditionally large effects in small sample sizes. A recent review of effect sizes in ABCD analyses (59) demonstrated that the median in-sample effect size across multiple instruments (161 variables representing all questionnaires and tasks) was 0.03. The authors found a slightly larger median effect size (0.05) when mimicking “real-world” analyses of ABCD data. Thus, the observed effects of race-related disparities on brain structure are in line with, and larger than, other observations from analyses of ABCD data.

The present findings should be considered in light of several limitations. Our analyses were limited to parent-identified Black and White participants and did not include participants with other racial identities. Although the ABCD Study is one of the largest studies of children’s brains, there was a limited amount of data on non-White and non-Black children (note that only 15.7% of the participants in the present sample were Black and only 17.6% were not Black or White). Unequal sample sizes can impact statistical group comparisons. Further,

many neuroimaging studies have demographically unrepresentative samples that can impact the generalizability of research findings. Thus, we echo the recommendations in previous reports to increase representation of non-White racial/ethnic groups to address broader questions on the impact of racial and ethnic disparities across groups (60). Another limitation of the present study is the lack of longitudinal MRI data. Our analyses were focused on the impact of racial disparities on the earliest available assessment of brain structure. However, future analyses of the longitudinal MRI data in combination with potential changes in adversity may be useful to test nuanced questions about the role of adversity on race-related differences in brain development. An additional limitation is the potential role of other adversity types on race-related differences in brain structure. We focused on structural adversities but could not capture certain aspects (e.g., nutritional differences or direct toxin exposure), and our analyses did not focus on other factors, such as racial discrimination (61). Nutritional and racial discrimination data were collected 1 year after the baseline visit, precluding any meaningful interpretations with the baseline MRI data. Although we assessed pollutant exposure at the neighborhood level, more direct measures of toxin exposure, such as those available from baby teeth collected in the ABCD Study, may provide more granular information in future analyses. Recent studies demonstrate that racism and racial discrimination directly affect brain structure and function and are associated with poor mental health outcomes (28–30, 62–64), and thus future research should further explore these relationships in children. Finally, although we assessed adversity, it is unclear when these adversities occurred or for how long. Information on the timing and duration of the children's adversity exposure could allow us to draw stronger conclusions about its effect on brain development.

In summary, we have shown that differential exposure to childhood adversity contributes to racial differences between Black American and White American children in gray matter volumes of brain regions key to emotion regulation. The disparities in gray matter volume observed in this study may be a consequence of long-term dysregulation of threat-related neural circuitry. The findings from this study thus have important implications for our understanding of the impact of socioeconomic and environmental inequalities on mental health in the United States and our understanding of racial differences in psychiatric disorder development, particularly PTSD, for which the literature on lifetime prevalence is mixed (65–70). Although more research is needed on the neurobiological consequences of racial disparities in childhood adversity, the present findings offer new insight into biological impacts of disproportionate stress exposure.

## Acknowledgments

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## Supplementary Material

**File** (appi.ajp.21090961.ds001.pdf)

VIEW/DOWNLOAD | 528.42 KB

## References

1. Sacks V, Murphey D: The prevalence of adverse childhood experiences, nationally, by state, and by race or ethnicity. Child Trends, February 12, 2018. https://www.childtrends.org/publications/prevalence-adverse-childhood-experiences-nationally-state-race-ethnicity/

Go to Citation | Google Scholar

2. Fontenot K, Semega J, Kollar M: Income and poverty in the United States: 2017. Current Population Reports, No P60-263. Washington, DC, US Census Bureau, September 2018

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# Racial Stress and Trauma and the Development of Adolescent Depression: A Review of the Role of Vigilance Evoked by Racism-Related Threat

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## Abstract

There are known disparities in the burden of illness and access/quality of care for African, Latino/a, Asian, and Native American (ALANA) patients diagnosed with depressive disorders, which may occur because of health inequities. Racial stress and trauma (RST), or the significant fear and distress that can be imparted from exposure to racism, is one such inequity linked to the development of depression. The current review summarizes past research examining the association between racism, RST, and depression, as well as avenues in which RST becomes biologically embedded in ALANA individuals. We describe multimodal research that supports vigilance as a potential mediator of the association between RST and depression and consider the nuanced role that vigilance plays during experiences with racism. Finally, we describe methodological advances in the assessment of vigilance evoked by RST and the clinical implications that may be generated by future improvements. In each of these areas, we present examples of how ongoing and future research can be leveraged to provide support for psychosocial programs that facilitate autonomous community healing and resilience, increase calls for public policy changes, and support clinical interventions that lessen the burden of racism on ALANA communities.

**Keywords:** racism, racial stress and trauma, adolescent depression, vigilance, adolescence

Childhood adversity accounts for over 50% of risk for the development of affective problems such as depression. [1] To probe the link between adversity and mental health outcomes, traditional assessments of adverse childhood experiences (ACEs) have queried experiences such as parental loss, bullying, and childhood sexual, emotional, or physical abuse. [2] Yet, racism has historically been neglected in these assessments despite being a ubiquitous form of childhood adversity affecting African, Latino/a, Asian, and Native American [ALANA [3] ] youth [4] and a primary driver of health inequities in the United States. [5] This is a critical gap in etiological models of depression in part because encounters with racism can lead to racial stress and trauma (RST), which is a known risk factor for the development of depression.[6–8] Further, this initial increase in depression may serve as a harbinger of enduring distress and impairment. ALANA individuals suffer from more chronic, severe, and debilitating episodes of clinical depression [9] and report disparities in access, uptake, and retention in evidence-based treatments, compared to their White counterparts.[10,11] There is a pressing need to examine mechanistic pathways linking RST to future depression in ALANA youth to advise public policy and early intervention efforts that address the health inequities imparted by racism. To this aim, the current review seeks to 1) summarize prior research assessing links between racism, RST, and depression (across multiple levels of analysis and development) and 2) consider vigilance for racism-related harm as a potential mechanism underlying the link between RST and the development of depression.

## Racism and Mental Health

The National Institutes of Health recently defined racism as “a socially structured action that is unfair or unjustified” and that is based on race or ethnicity, which are regarded as social (not biological) constructs, [12] though the effects of racism are often biological in nature. [13] Racism, inclusive of unequal actions, beliefs, and behaviors towards ALANA individuals, permeates most aspects of their daily living, including employment, academic, and retail sectors, as well as during police encounters. [14] Often research examining racism as a source of adversity centers on its behavioral expression, racial discrimination. [15] Yet, the adverse influence of racism is also generated by macrosystems.[16,17] For example, the effects of systemic racism on households (eg, disparate distribution of wealth and resources; inequities in access to education and healthcare; overrepresentation in the criminal justice system) also increase risk for other types of ACEs across ALANA youth, particularly among youth who identify as Black or Latino/a. [18] Greater exposure to racism, from micro- to macrosystems, increases risk for negative mental health outcomes among ALANA youth, including risk for depression and other internalizing symptoms such as anxiety and post-traumatic stress symptoms.[5–7,19,20]

Stress and trauma following racist encounters is a putative link between exposure to racism and the development of depression. Racism-based traumatic stress theory illustrates that racism causes emotional injury (ie, RST) and thus should be considered by mental health providers as a specific trauma type to center racism as an external and/or situational factor that is outside of an individual's control and caused by injustice and oppression. [14] RST can follow both direct (first-hand) and indirect (second-hand) encounters with racism and may include feelings of distress, anxiety, avoidance, hypervigilance, intrusive thoughts, dissociation, anger, and reduced self-esteem. [21] A recent meta-analysis demonstrated moderate to strong associations between racial discrimination and reported trauma symptoms among adults in the United States, [22] providing additional support for racism as a mechanism of stress and trauma among ALANA communities. Although there is considerable overlap between symptoms of RST and post-traumatic stress disorder (PTSD) and there is the potential for RST to lead to a diagnosis of PTSD and/or exacerbate existing PTSD symptoms, [23] it is important to note that these two clinical phenomena remain distinct, and may necessitate distinct intervention approaches, in part because RST results from a lifelong and unavoidable exposure to racism that repeatedly unfolds across generations, communities, and history.

## Racial Stress and Trauma and the Development of Depression

There is a robust association between experiences with racism and youth depression [for reviews, see[8,24]] and evidence that the development of RST precedes and increases risk for depressive symptoms among ALANA youth.[25–28] When examining the temporal links between RST and depression, adolescence may be a critical developmental window to consider as 1) rates of clinical depression skyrocket during this period, particularly for girls across races [29] and 2) there is a graded association between cumulative ACE exposure and later depression and other internalizing problems during adolescence.[30,31] Although most of the past research examining RST has focused on adults, there are several developmental models that consider the ecological contexts in which youth encounter and respond to racism across distinct developmental periods.[32–34] For example, Saleem and colleagues' developmental and ecological model of youth racial trauma [DEMYth-RT [34] ] describes critical ecological and developmental changes from late childhood to adolescence that may support a link between RST and the development of depression during this period. During elementary school (6-11 years), children learn that the color of their skin can impact how they are treated by others and can influence their safety and security. [34] By middle school (12-14 years), there is an increasing relation of the self to sociocultural identities, including ethnicity and race, [35] and a heightened sensitivity to both positive and negative evaluation from peers. [36] During high school (15-18 years), ALANA youth experience increasing exposure to racism given their greater autonomy from proximal adults and, as a result of increased cognitive processing, develop a more advanced understanding of the systems and institutions that maintain and perpetuate racism. [37] Together, these developmental and ecological changes set the stage

for an increasing impact of racism on mental health as ALANA youth learn to navigate various sectors of their lives. [34] For example, as it relates to the child's development as an individual, exposure to racism, particularly from peers, may be especially damaging to self-esteem during this sensitive window for identity development. [38] At an interpersonal level, adolescents' increasingly comprehensive understanding of the impact of racism may lead to increased worry about the safety and well-being of one's self and loved ones. [39] Of note, symptoms of RST during adolescence may resemble the symptoms commonly seen in adults but may also include anxiety and difficulty maintaining attention and concentration in school [40] and an increase in substance use, risk-taking, and social withdrawal.[27,41,42]

Although RST increases risk for many forms of psychopathology,[43–45] adaptations of general strain theory [46] suggest that RST may specifically heighten risk (or strain) for depression by increasing negative emotionality and lowering self-esteem and self-worth. [47] This theory is supported in part by the large number of studies demonstrating that higher levels of racial discrimination during childhood increases risk for the development of depression during adolescence and young adulthood among ALANA youth[7,8,24–28] and that self-esteem may mediate the link between racism and depression.[48–51] Similarly, Brondolo and colleagues updated longstanding cognitive models of depression to reflect how racism may specifically impact vulnerability for depression. This social-cognitive model describes how racism can affect depression-relevant cognitive schemas about the self (eg, self-esteem, locus of control), others (eg, stereotype threat), and the world (eg, public regard, unjust world beliefs). [6] In addition to the effects on self-esteem described above, racism can lead to reduced perceptions of personal control (ie, an ability to get ahead in life and/or maintain safety)[52,53] and increased beliefs about a hostile world, [51] both of which have been shown to mediate the link between exposure to racism and depression. [6] At a more granular level, a recent daily diary study demonstrated that when Black youth experienced increases in low public regard (ie, an individual's belief about the extent to which society views their racial group negatively), experiences with racial discrimination became more likely to predict increases in depressive symptoms the following day. [54]

Exposure to racism can also dampen cognitive flexibility, which increases risk for depression. [6] Following an incident of racial discrimination, the targeted individual will likely exert considerable cognitive resources to appraise if the act was intentional or not and decide how to respond and cope, all of which comes at a cost to other competing cognitive demands.[55,56] This hypothesis is supported in part by research showing that while cognitive performance in Black adults is impacted by displays of blatant racial discrimination, [57] performance suffers more following subtle incidents of racism. [58] Critically, this reduction in cognitive flexibility is thought to limit an individual's ability to shift thoughts and attention away from past or ongoing events that evoke feelings of low self-esteem or personal control, which maintains and increases symptoms of depression; indeed, such hypotheses have been supported by

research showing that rumination is a mediator of the link between exposure to racism and later depression in ALANA young adults[59–61] and adolescents. [62]

Finally, chronic stress derived from racism may also be a pathway to depression. Racism is one of the largest sources of chronic stress for ALANA individuals, and research shows that racism-related stressors are often more deleterious to health and well-being than other stressors.[6,63] In response to racism-related chronic stress, Wilson and Gentzler (2021) describe an "adaptive culture to cope", which includes high levels of emotional self-control and limited self-disclosure of negative emotion. Although this coping style offers adaptive strategies to mitigate racism-related barriers in various interpersonal settings, it also requires high levels of effort to sustain, which taxes mental resources and increases wear and tear on biological systems. [64] Likewise, avoidant coping strategies in response to racial discrimination, such as expressive suppression of negative emotion or acceptance and resignation, are associated with increased avoidance symptoms of trauma (dissociation, emotional numbing) following racial discrimination.[65,66] Although additional research is needed in youth, avoidant coping in response to chronic racism-related stress has been shown to increase risk for depression among Latina and Black adults,[67,68] which is consistent with developmental models that show that expressive suppression [69] and blunted emotional responding [70] are strong predictors of youth depression.

## The Impact of Microaggressions and Indirect Racism on Mood and Depression

In addition to the well-described effects of direct and overt exposure to racial discrimination, depression risk can also be increased by exposure to 1) ambiguous or subtle racial discrimination, including microaggressions, and 2) indirect racial discrimination, including anticipated discrimination and vicarious discrimination.[47,71] Microaggressions are defined as "brief and commonplace daily verbal, behavioral, and environmental indignities, whether intentional or unintentional, that communicate hostile, derogatory, or negative slights and insults to the target person or group", [72] and they have been shown to evoke similar levels of anxiety, anger, and stress when compared to experiences with overt discrimination. [73] For example, given their pervasive nature in daily life, microaggressions can result in ALANA youth feeling isolated from peers, out of place in academic settings, and/or unwelcomed during business transactions. Critically, many studies have shown a robust link between microaggressions and depression in ALANA adults and adolescents,[73–75] with evidence that RST mediates the link between frequency of microaggressions and depressive symptoms.[76,77]

Similarly, studies have shown that indirect discrimination, including anticipated (ie, high expectations that discrimination will occur in the future or that ongoing discrimination will endure) and vicarious discrimination (ie, the discovery of and identification with the harm inflicted upon others), are significantly associated with depressive symptoms and disorders among ALANA adolescents[47,78] and

adults. [79] With adolescents increasingly experiencing life through mobile screens, an expanded focus on understanding how indirect discrimination experiences unfold both on and offline is imperative. For example, a recent study found that Black adolescents face, on average, five racial discrimination encounters per day, with the majority of these experiences occurring online. [80] Online experiences may be especially relevant for the development of depression because when indirect discrimination is widely disseminated via viral media, targeted individuals become more likely to 1) internalize observed negative evaluations about ALANA individuals and communities and 2) perceive less personal control, both of which increase the risk for depression. [6] A recent qualitative analysis conducted by Heard-Garris and colleagues (2021) revealed that adolescents describe a near constant stream of information reaching them through mobile devices, particularly through social media applications such as YouTube, Instagram, Twitter, TikTok, and Snapchat, and many adolescents report encountering daily instances of racism in the news. During and after these indirect encounters with racism, respondents reported feeling helpless, desensitized, and stressed, which often led them to seek out support from peers, family, and community mentors and/or to engage in soothing activities, such as writing, music, or games. [81] Similarly, among ALANA adults, respondents reported that the Internet has led to 1) greater exposure to racism and 2) elevation and amplification of racist voices. [82] Further, adults deemed exposure to racist jokes/humor, racist propaganda, vicarious observation of direct racism toward others, negative racial stereotyping, and racism in online media as the most damaging to their health. [82]

As expected, these qualitative findings parallel results from quantitative, correlational designs examining the impact of indirect discrimination experiences on mental health. For example, Bor and colleagues (2018) quantified the number of days adult respondents were exposed to media coverage of one or more police killings of unarmed Black Americans in their state of residence. For Black respondents, coverage of every additional police killing of an unarmed Black person was associated with an increase in poor mental health days (ie, mental health rated as “not good”), whereas exposure to police killings of either Black or White people had no impact on mental health among White respondents. [83] Among studies specifically examining depressive symptoms, greater online exposure to viral videos and images of racial discrimination and violence perpetuated against ALANA individuals (eg, undocumented immigrants detained in cages; unarmed Black people killed by police or civilians) was related to higher depressive symptoms among ALANA adolescents[84,85] and adults.[79,86] Together, these qualitative and quantitative studies provide striking evidence that ALANA adolescents and adults are inundated by chronic indirect exposure to racism via mobile devices and news media and suggest that these experiences may increase risk for depression via RST, particularly for Black and Latino/a adolescents who may face the highest levels of exposure and distress. [84]

## Biological Embedding of Racial Stress and Trauma

Occurring in parallel and in interaction with the psychological impact propagated by systems that support racism (both online and off), there is also a biological embedding of RST among ALANA individuals. [13] Specifically, Carter and colleagues propose that dimensions of threat processing [eg, responses to acute, sustained, and potential threat, as described in the National Institute of Mental Health (NIMH) 'Research Domain Criteria' (RDoC) framework] are a critical mechanism of neurobiological embedding. Relevant to the construct of sustained threat, Clark and colleagues (1999) biopsychosocial model illustrates that chronic stress from racial discrimination and threat over time contributes to heightened allostatic load (ie, the accumulation of wear and tear on the body and brain via chronic stress processes).[63,87] Research supporting the biopsychosocial model is overwhelming; [88] cumulative levels of exposure to racial discrimination and systemic racism are linked to elevated inflammatory markers,[44,89–91] accelerated biological aging and allostatic load,[92,93] reduced total brain matter volume, [94] decrements in white matter microarchitecture, [95] and heightened amygdala reactivity and functional connectivity. [96] Notably, each of these indices predicts premature morbidity and mortality[91,97,98] and mirrors putative biomarkers of depression.[94,99–101]

Another form of biological embedding from RST can be captured in the moments when an individual is faced with acute threat. Although no studies of which we are yet aware have probed neurobiological responses to overt cues of racism-related threat, one study showed that among a sample of predominantly Black adults, a psychophysiological "over-expression of fear" was linked to greater intrusive thoughts in response to a reminder of a past trauma. [102] Similarly, Fani and colleagues (2021) showed that trauma-exposed Black women with higher levels of exposure to racial discrimination exhibited greater activation in brain regions related to cognitive-affective and attentional functions [ie, ventromedial prefrontal cortex (PFC) and middle occipital cortex] when viewing trauma-related threat stimuli during an affective Stroop task. Critically, these findings were maintained after accounting for PTSD symptoms and other trauma exposures, [103] suggesting that these neurobiological disruptions in attention to and regulation of threat processing were specific to biological embedding of RST. In contrast, there is also evidence suggesting that exposure to racism can be associated with blunted responses during fear conditioning, as research has shown that Black adults, compared to White peers, exhibit lower skin conductance[104,105] and reduced activation of fear circuitry during fear conditioning. [105] Notably, a recent study by Harnett and colleagues (2019) found that racial differences in neurobiological fear conditioning responses were mitigated when considering lifetime levels of violence exposure, family income, and neighborhood disadvantage, [105] which highlights the critical role played by the correlates of structural racism (ie, increased life stress and disadvantage) in health equity and biological embedding of trauma [see also [106] ].

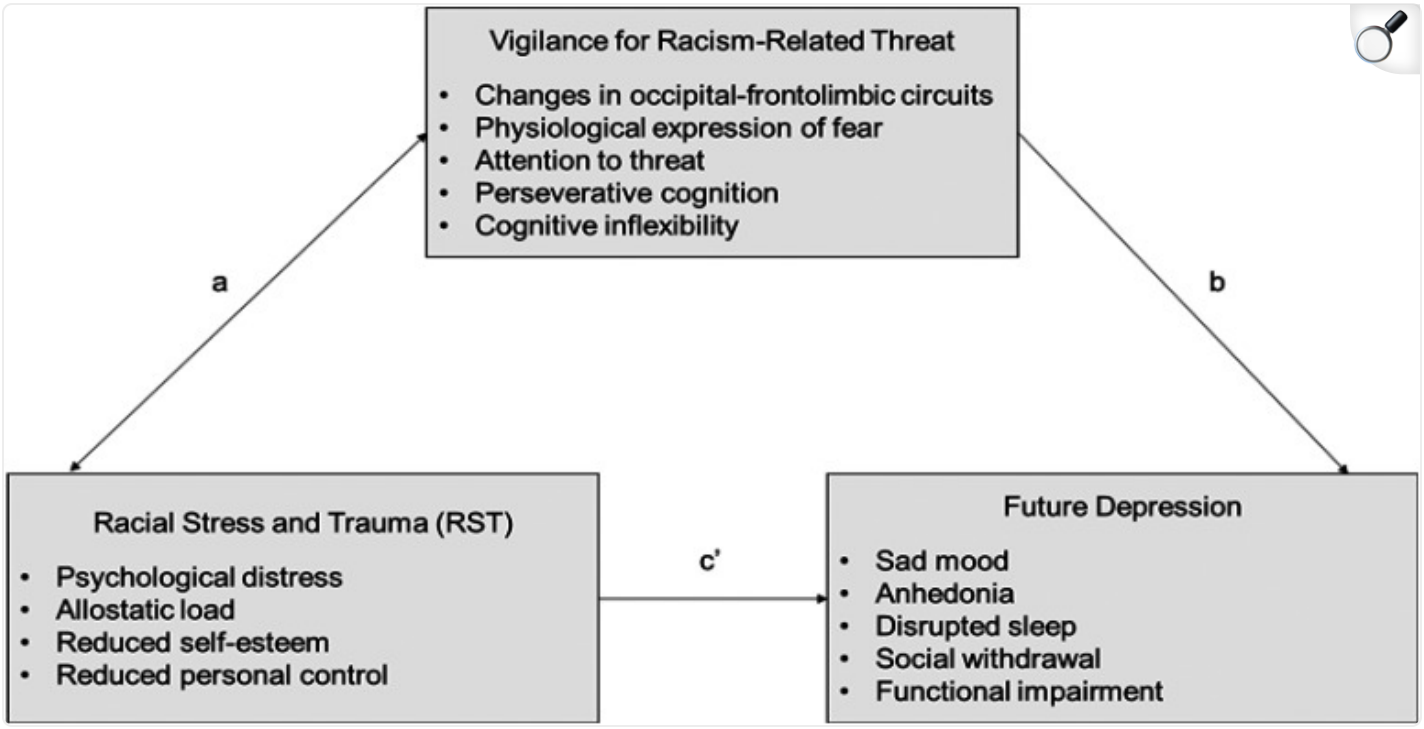
Responses to *potential* racism-related threat are also likely to be biologically embedded. Although very little research has examined how the embodiment of RST may unfold across development, the current

generation of adolescents and young adults are among the first to grow up with almost daily exposure to viral media depicting racialized violence, [81] which will likely have long lasting effects on how the brain and related neurobiological systems process potential threat. [13] Such patterns of threat processing will develop in conjunction with cognitive schemas that are shaped by racism, which can facilitate increased perceptions of potential threat even in times of safety.[6,107] For example, a recent observational study of Black adolescents found that as personal experiences of racism increased across individual, institutional, and cultural levels, so did anticipatory racism-related stress responses across both cognitive-affective and physiological domains. [108] Similarly, experimental studies have shown that adolescents and adults who identify as Black or Latino/a, compared to White, experience increased sympathetic nervous system and hypothalamic-pituitary-adrenal axis activity and reduced parasympathetic nervous system activity when observing or speaking about incidents of racism perpetuated against other people or when anticipating that the incident might happen to them.[73,109–114] Taken together, these findings suggest that ALANA youth are likely to express heightened vigilance for racism-related threats across multiple units of analysis, which may put them at elevated risk for RST and later depressive symptoms. [90]

## Vigilance for Racism-Related Threats

Consistent with RST models describing biological embedding [13] and relevant developmental and ecological contexts, [34] generalized developmental models of adversity maintain that trauma exposures specifically involving threat of harm can lead to biopsychosocial changes in youth that influence how they process and attend to threat-relevant information in the external environment. [115] The terms ‘vigilance’ or ‘hypervigilance’ to threat are commonly used in the psychological literatures on anxiety, depression, and trauma to describe a pattern of both voluntary and involuntary (automatic) selective processing of threat-relevant cues within the environment, relative to cues that are positive or neutral. Together, these models suggest that vigilance for potential racism-related threats are likely to 1) interfere with goal-directed behavior required for adaptive functioning, 2) maintain a reciprocal relation with fear and distress, such that more vigilance increases symptoms of RST and vice versa, and 3) predispose ALANA youth to future affective problems such as depression.[13,34,115] Thus, vigilance for racism-related threats may be a critical mechanism predisposing ALANA youth, and particularly Black and Latino/a adolescents, to future depression, likely by mediating the link between RST and depression (Figure 1). This hypothesis is also supported by research showing that self-reported levels of vigilance increase risk for depression among ALANA adults.[79,116,117]

Figure 1.

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Vigilance for racism-related threats as a mechanism predisposing ALANA youth to future depression.

## Vigilance: Adaptation, Resilience, and Oppression

It is critical to note here that although vigilance and its neurobiological concomitants have been conceptualized as vulnerabilities in traditional developmental models of affective disorders, [118] vigilance may simultaneously provide distinct advantages to ALANA youth when navigating a world where racism is ubiquitous; thus it may be considered adaptive, particularly in the short-term. For example, vigilance may 1) help individuals foresee and circumvent racism-related threats and 2) buffer self-esteem and mood by helping attribute racist denigrations and exclusions to external rather than internal causes,[90,108] while concurrently reducing activation of brain regions responsible for social pain. [119] Yet, despite their resilience, it cannot be overlooked that this need for vigilance places an oppressive burden on ALANA youth that is inconsistent with the ideals and actions of a just society. To maintain heightened vigilance throughout the day, selective attention is manifested across multiple domains (physical,

behavioral, cognitive-affective, and neural),[90,117] which is taxing for myriad reasons. First, vigilance is typically accompanied by feelings of worry or tension that, in turn, motivate the persistent monitoring and avoidance behaviors required to maintain perceptions of safety.[120] The perseverative cognition and emotions that likely accompany a perpetual state of vigilance for racism-related threats can quickly deplete coping resources, leading to increased negative mood such as depression.[116] Second, attending, interpreting, and responding to ambiguous threat cues interferes with other attentional and cognitive demands that are integral to daily living and to the capacity to engage fully in preferred activities.[56,121] Indeed, vigilance taxes youth across most domains of adaptive functioning,[63] leading to worse performance in school and at work,[122] difficulties sleeping,[123] chronic stress,[124] and increased social withdrawal.[125]

Finally, vigilance for threat of racism-related threats is likely to both tax and shape the neural architecture required to support threat processing and emotion regulatory systems across development. Although there is a dearth of studies examining the influence of racism on neuroanatomy and functional integration during childhood and adolescence, research on child maltreatment may begin to illuminate how the developing brain is impacted. Many of the most devastating effects of racism on ALANA youth overlap with components of childhood maltreatment[4] (eg, disparagement or destruction of things a child values; elicitation of guilt, shame, or fear; observations of violence perpetuated against people a child identifies with or cares for; unwarranted expectations that a child should cope with situations that exceed their developmental abilities). There is growing consensus that distinct forms of maltreatment cause experience-dependent alterations in the brain and its circuits that serve to facilitate the individual's adaptation to and survival in a threatening world, which may lead to alternative etiological pathways to psychiatric disease compared to non-maltreated individuals.[126] For example, compared to adults with no such exposure, adults who visually witnessed domestic violence repeatedly during childhood exhibited reduced grey-matter density in the right lingual gyrus and portions of the visual cortex,[127] as well as diminished integrity of the left inferior longitudinal fasciculus,[128] effects that were most pronounced if the person witnessed the violence before age 13.[127,128] The fact that these neural alterations persist into adulthood is notable given their relevance to visual-limbic pathways connecting occipital and temporal lobes, which support vision-specific cognitive-affective processes and may maintain long-standing biases in how individuals attend to and perceive visual cues of potential threat.[126] These studies tentatively suggest potential occipital-limbic pathways in ALANA youth that may be shaped by experiences such as exposure to visual media depicting racialized violence.

Taken together, these studies suggest that clinical scientists must think carefully about how vigilance evoked by RST is conceptualized in etiological models of depression. The deleterious effects of vigilance on health are considerable and include a prioritization of safety-seeking behaviors that often get in the way of other critical aspects of daily living, as well as long-term changes in neural structures and

circuitry that can influence cognitive-affective processes across the lifespan. Yet, as is true following many forms of maltreatment, vigilance can simultaneously be advantageous in some contexts. Therefore, clinical models may be best served by considering the context in which vigilance evoked by RST is manifested. For example, culturally competent interventions addressing threat appraisal might be warranted among ALANA adolescents who report difficulty discerning between contexts of high and low racism-related threat. However, even when considering the context, individual-level efforts at targeting the role of vigilance in the development of depression will not be able to fully address its impact because racism is an external factor propagated by an oppressive structure. Therefore, efforts to understand and intervene upon this target must cut across the individual and their ecological systems. [129]

## Measurement of Vigilance

Past research examining the role of vigilance in predicting RST and depression has largely measured vigilance using self-report questionnaires.[79,116,117] For example, pioneering research from the 1995 Detroit Area Study resulted in the vigilance anticipatory coping scale, which has demonstrated validity and reliability across studies.[116,117,130] Self-report assessments of vigilance carry many advantages, including face validity, reduced burden on participants, and plentiful opportunities for community input in the construction of measures. Of note, recent advances have led to sophisticated ecological momentary assessment (EMA) protocols assessing racist encounters and their moment-to-moment impact on mental health. [131] Further development of EMA protocols assessing vigilance as a temporal link between symptoms of RST and depressed mood will be critical for future research.

Behavioral measures, assessed both in the laboratory and in the real-world, may shed further light on how vigilance to racism-related threat cues unfolds as a process among ALANA individuals. For example, behavioral research examining attentional vigilance within developmental models of affective disorders have historically used reaction times and eye tracking indices from computerized tasks to assess patterns of attention toward threatening images or words. [132] Modifying these paradigms to assess RST-relevant vigilance may provide opportunities to identify the types of racism-related threat stimuli that are most likely to catch the eye of ALANA youth and adults. In addition, recent technological advances have introduced opportunities to assess vigilance in the real world via wearable eye tracking goggles. [133] This technology could quantify how adolescents are attending to real-world markers of racism-related threat during lived experiences while simultaneously assessing how and when vigilance is robbing focus from other goal-oriented or hedonic pursuits. Finally, the advent of passive sensing from phones and wearable devices provides opportunities to observe vigilant behaviors (eg, avoidance of people or places) as a function of contextual factors such as location, time and date, and people present. [134] Other behaviors such as sleep, movement, phone and social media use, vocal characteristics, eye gaze, and physiology can also be extracted from wearable devices, which may allow machine-learning algorithms to detect

context-specific, multimodal patterns of behavioral vigilance from data streams, [135] which could inform etiological and intervention models.

Future research may also benefit from neuroscientific assessments of vigilance, which provide important complements to self-report and behavioral measures. For example, neuroscience can offer another level of objective and precise measurement. Past research has demonstrated that precise measurement of vigilance is critical to sensitively predicting clinical outcomes;[115,118] because vigilance often manifests via covert attentional processes that are not easily identifiable by behavioral indices, [136] future studies that utilize brain-based measurement [eg, functional magnetic resonance imaging (fMRI), electroencephalogram (EEG)] may be able to more precisely quantify these covert processes. Additionally, neuroscientific assessments provide opportunities to map self-report or behavioral measures to discrete patterns of neural functioning. For example, as indicated by prior research,[103,126] visual-frontolimbic circuits are impacted distinctly by experiencing or observing specific forms of threat. Future research is necessary to illuminate the neural pathways that may maintain vigilance following different types of racism-related threat and determine their relation to RST self-reported symptoms and behaviors, which could be used as more cost-effective markers for use in the clinic and community.

## Future Directions

A review of the role of vigilance in the link between RST and risk for depression highlights many avenues for future research. First, regarding the measurement of vigilance, it is clear that a multimodal assessment of vigilance for racism-related threat is critical, as multiple levels of analysis (eg, self-report, behavioral, neural) are necessary to understand the nuanced role of vigilance in the development of depression (see Figure 1). Particularly for biobehavioral measures, future laboratory-based paradigms that assess vigilance for racism-related threat may prove more effective if they utilize idiographic and ecologically-valid threat stimuli that reflect the nature of living with racism [eg, laboratory analogs[112,137]], which can be achieved in part by incorporating feedback from community members and findings from qualitative research into paradigm development. Further, the measurement of vigilance in response to a wide range of racist experiences must be considered. As highlighted by this review, vigilance can follow a range of incidents, including overt discrimination, microaggressions, anticipated discrimination, vicarious discrimination (both online and off), as well as from the effects of structural racism; future research is needed to determine if there are experience-dependent patterns of vigilance that may better explain the link between RST and depression versus other forms of psychopathology. Finally, future assessments of vigilance as a link between RST and depression will benefit from repeated-measures longitudinal designs. Researchers studying both RST and developmental psychopathology have long called for more research focusing on within-person differences that emerge over time,[13,138–140] as simply comparing one group of people to another at a cross-sectional time point often obfuscates

important heterogeneity in lived experiences and clinical profiles. [141] Likewise, the use of between-group designs ensures that sociological conceptualizations of racism do not preclude an examination of White individuals; however, careful consideration of how metrics from ALANA youth are compared to White peers is warranted to make sure that scientists do not inadvertently support structural racism by centering the experience of White youth as the "norm".

## Clinical Implications

Research that further elucidates the potential relations between vigilance, RST, and the development of depression (particularly during critical windows such as adolescence) may have important clinical implications. First, racism-related ACEs and RST are still not widely recognized or assessed in traditional clinical care.[4,34] Because clinical research is a tool that can bring attention to the experiences of marginalized communities not well represented in existing etiological or intervention models, [142] continued research on RST remains imperative. For example, in addition to refining biobehavioral models of RST, which can inform culturally competent clinical care and assessment, future use of biobehavioral indices of vigilance may provide biomarkers of racism-related harm that can be used as powerful tools in shaping public policies to improve health equity and advocating for increased mental health services for ALANA youth.

Second, etiological models examining if vigilance is a mediating link between RST and later depression may inform and support culturally competent prevention and early intervention efforts. For example, because RST is related to acute and chronic stress, mindfulness has been suggested as a potential therapeutic coping strategy to decrease anxious arousal following racial discrimination.[55,143] Future research might examine whether mindfulness-based therapeutic techniques will reduce the detrimental impact of RST-induced vigilance, stress, and risk for future depression. Further development of such techniques may synergistically enhance gold standard recommendations for addressing RST in the clinic, which can include 1) facilitating a therapeutic alliance built on cultural humility, warmth, trust, safety, validation, and emotional openness, 2) creating individualized treatment plans that facilitate active and collaborative discussions of racism and lived experiences, 3) open acknowledgment of any therapist-patient shared and disparate sociocultural identities, and 4) implementation of coping strategies that emphasize social support/kinship and religiosity/spirituality.[64,139,144–147] Further, given strong links between exposure to racial and ethnic discrimination and PTSD diagnoses, which are not well-addressed by Western medical guidelines for treating trauma, [23] there is a need for further inclusion of culturally emergent interventions that integrate culturally rooted practices with Western models. [148] Because RST differs from PTSD by virtue of exposure to chronic, unavoidable traumas that are woven into the structure of society, this approach ensures that the patients' cultural identities and sociopolitical histories of oppression and collective trauma are acknowledged and integrated in treatment.

Third, research seeking to understand the role of vigilance by examining individual differences can also highlight the deep wells of resiliency that ALANA communities have fostered to promote healing outside the bounds of traditional medical systems. For example, it is possible that reductions in both self-reported and biobehavioral measurements of vigilance may occur when Black adolescents and their families engage in community-based racial socialization interventions that seek to reduce RST through supportive verbal and non-verbal communication about the positive and challenging aspects of racial identities and dynamics [ie, Anderson and colleagues' Engaging, Managing, and Bonding through Race (EMBRace) intervention[149–151]]. By helping to quantify existing sources of community healing, researchers can provide evidence and advocate for public policies that support autonomous community coping through additional funding and social services.

Finally, research on RST has important implications for programs that seek to dispel racism from our communities. Although a thorough description of ongoing efforts to eradicate systems that perpetuate racism is outside the scope of the current review [see [152] for a review], it is important to note that studies examining the role of vigilance may contribute to these efforts. For example, there is evidence that high quality intergroup contact (ie, social interaction between people of different races or ethnicities) can lead to a reduction in anti-Black sentiment and symbolic racism, as well as less racial profiling and stereotyping. [153] However, a recent meta-analysis demonstrated less conclusive findings, such that although contact usually reduces prejudice, contact effects vary and are weakest for interventions targeting racism. For instance, it may be that deeper engagement, rather than just casual contact, is necessary to begin to offset the interpersonal effects of racism. [154] Clearly, more research is needed to understand the active ingredients of interventions such as intergroup contact, and RST-focused research programs may offer alternative markers of efficacy that focus on quantifying the (positive or negative) impacts on ALANA individuals, in addition to the reduction of bias among dominant groups. As an example, because RST-evoked vigilance likely comes at a cost to many domains of adaptive functioning, observing reductions in self-reported and biobehavioral measures of vigilance following an intervention may indicate that it results in an interpersonal environment that allows ALANA youth and adults to thrive via reduced perception of threat.

## Limitations

The current review has several limitations. First, because of a dearth of research funded to examine RST, compared to other trauma disorders, this review was unable to draw conclusions regarding whether the form and function of vigilance evoked by racism-related threats may differ based on racial or ethnic identity. This is a critical limitation as ALANA individuals are not a monolith and sociocultural identities shape lived experiences in important and unique ways. Future research is needed to compare racial and ethnic groups, as well as within-person differences, in vigilant expression. Second, this review primarily

focused on racial and ethnic discrimination, which ignores the role of intersectionality in discrimination experiences. Future research and reviews are necessary to comprehensively consider how other sociocultural factors, including sexual orientation, gender identity, socioeconomic status (SES), and disability, may moderate interactions between RST, vigilance, and depression. Finally, this review focused on mechanisms underlying the development of depression and related internalizing problems, in the context of racism. However, RST is transdiagnostic risk factor for a wide range of psychopathology, including externalizing problems such as substance abuse.[43–45] Notably, racial discrimination from peers in middle school is related to increased alcohol and marijuana use in high school among Black teens, [155] with "drinking to cope" identified as a common emotion-regulation strategy used across the lifespan to combat RST. [64] Future research is needed to determine if vigilance evoked by racism-related threats is a mechanism underlying strategies such as drinking to cope and a risk factor for substance use disorders.

## Conclusions

In this review, we summarize evidence that vigilance evoked by racism-related threats (as observed across multiple levels of analysis) is a key mechanism underlying the link between RST and the development of depression in ALANA adolescents. We assert that research on the development of depression and other affective problems must account for the role of RST in etiological and intervention models, and, accordingly, practice must respond to this acknowledgment. Future research examining such pathways will open the door to a wide range of clinical implications, with the potential to shape intervention efforts and public policies that seek to reduce the health inequities caused by racism.

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## References

1. Hoppen TH, Chalder T. Childhood adversity as a transdiagnostic risk factor for affective disorders in adulthood: a systematic review focusing on biopsychosocial moderating and mediating variables. Clin Psychol Rev. 2018;65:81–151. [DOI ] [PubMed] [Google Scholar ]

2. Felitti VJ, Anda RF, Nordenberg D, et al. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: the adverse childhood experiences (ACE) study. Am J Prev Med. 1998;14(4):245–258. [DOI ] [PubMed] [Google Scholar ]

3. LaVeist TA. Beyond dummy variables and sample selection: what health services researchers ought to know about race as a variable. Health Serv Res. 1994;29(1):1. [PMC free article] [PubMed] [Google Scholar ]

4. Bernard DL, Calhoun CD, Banks DE, Halliday CA, Hughes-Halbert C, Danielson CK. Making the "C-ACE" for a culturally-informed adverse childhood experiences framework to understand the pervasive mental health impact of racism on black youth. J Child Adolesc Trauma. 2021;14(2):233–247. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

5. Williams DR, Lawrence JA, Davis BA. Racism and health: evidence and needed research. Annu Rev Public Health. 2019;40:105–125. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

6. Brondolo E, Ng W, Pierre K-LJ, Lane R. Racism and mental health: Examining the link between racism and depression from a social cognitive perspective. In: Alvarez AN, Liang CTH, & Neville HA, eds. *The cost of Racism for People of Color: Contextualizing Experiences of Discrimination*. American Psychological Association; 2016 p. 109–132.

7. Bernard DL, Smith Q, Lanier P. Racial discrimination and other adverse childhood experiences as risk factors for internalizing mental health concerns among black youth. J Trauma Stress. 2022; in press. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

8. Benner AD, Wang Y, Shen Y, Boyle AE, Polk R, Cheng Y-P. Racial/ethnic discrimination and well-being during adolescence: a meta-analytic review. American Psychologist. 2018;73(7):855. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

9. Williams DR, Gonzalez HM, Neighbors H, et al. Prevalence and distribution of major depressive disorder in African Americans, Caribbean Blacks, and non-Hispanic Whites: results from the national survey of American life. Arch Gen Psychiatry. 2007;64(3):305–315. [DOI ] [PubMed] [Google Scholar ]

10. Bailey RK, Mokonogho J, Kumar A. Racial and ethnic differences in depression: current perspectives. Neuropsychiatr Dis Treat. 2019;15:603. [DOI ] [PMC free article] [PubMed] [ Google Scholar ]

11. Kim M. Racial/ethnic disparities in depression and its theoretical perspectives. Psychiatric Quarterly. 2014;85(1):1–8. [DOI ] [PubMed] [Google Scholar ]

12. NIH. RFA-MD-21- 004: Understanding and addressing the impact of structural racism and discrimination on minority health and health disparities (R01 clinical trial optional). 2021 [Available from: https://grants.nih.gov/grants/guide/rfa-files/rfa-md-21-004.html.

13. Carter SE, Gibbons FX, Beach SR. Measuring the biological embedding of racial trauma among black Americans utilizing the RDoC approach. Dev Psychopathol. 2021;33(5):1849–1863. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

14. Carter RT. Racism and psychological and emotional injury: recognizing and assessing race-based traumatic stress. Couns Psychol. 2007;35(1):13–105. [Google Scholar ]

15. Bourabain D, Verhaeghe P-P. The conceptualization of everyday racism in research on the mental and physical health of ethnic and racial groups: a systematic review. J Racial Ethn Health Disparities. 2021;8(3):648–660. [DOI ] [PubMed] [Google Scholar ]

16. Castle B, Wendel M, Kerr J, Brooms D, Rollins A. Public health's approach to systemic racism: a systematic literature review. J Racial Ethn Health Disparities. 2019;6(1):27–36. [ DOI ] [PubMed] [Google Scholar ]

17. Essed P. Understanding Everyday Racism: An Interdisciplinary Theory. In: *Sage Series on Race and Ethnic Relations, 2 ed.* Sage; 1991. [Google Scholar ]

18. López CM, Andrews AR, III, Chisolm AM, De Arellano MA, Saunders B, Kilpatrick D. Racial/ethnic differences in trauma exposure and mental health disorders in adolescents. Cultural Diversity and Ethnic Minority Psychology. 2017;23(3):382. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

19. Elkins J, Briggs HE, Miller KM, Kim I, Orellana R, Mowbray O. Racial/ethnic differences in the impact of adverse childhood experiences on posttraumatic stress disorder in a nationally representative sample of adolescents. Child and Adolescent Social Work Journal. 2019;36(5):449–457. [Google Scholar ]

20. Mersky J, Topitzes J, Reynolds AJ. Impacts of adverse childhood experiences on health, mental health, and substance use in early adulthood: a cohort study of an urban, minority

sample in the US. Child Abuse Negl. 2013;37(11):917–925. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

21. Carter RT, Pieterse A. Measuring the Effects of Racism: Guidelines for the Assessment and Treatment of Race-Based Trauma-Stress Injury. Columbia University Press; 2020. [Google Scholar ]

22. Kirkinis K, Pieterse AL, Martin C, Agiliga A, Brownell A. Racism, racial discrimination, and trauma: a systematic review of the social science literature. Ethn Health. 2021;26(3):392–412. [DOI ] [PubMed] [Google Scholar ]

23. Sibrava NJ, Bjornsson AS, Pérez Benítez ACI, Moitra E, Weisberg RB, Keller MB. Posttraumatic stress disorder in African American and Latinx adults: clinical course and the role of racial and ethnic discrimination. American Psychologist. 2019;74(1):101. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

24. Priest N, Paradies Y, Trenerry B, Truong M, Karlsen S, Kelly Y. A systematic review of studies examining the relationship between reported racism and health and wellbeing for children and young people. Soc Sci Med. 2013;95:115–127. [DOI ] [PubMed] [Google Scholar ]

25. Gaylord-Harden NK, Cunningham JA. The impact of racial discrimination and coping strategies on internalizing symptoms in African American youth. J Youth Adolesc. 2009;38(4):532–543. [DOI ] [PubMed] [Google Scholar ]

26. Neblett EW, Jr, White RL, Ford KR, Philip CL, Nguyen HX, Sellers RM. Patterns of racial socialization and psychological adjustment: can parental communications about race reduce the impact of racial discrimination? Journal of Research on Adolescence. 2008;18(3):477–515. [ Google Scholar ]

27. Brody GH, Chen YF, Murry VM, et al. Perceived discrimination and the adjustment of African American youths: a five–year longitudinal analysis with contextual moderation effects. Child Dev. 2006;77(5):1170–1189. [DOI ] [PubMed] [Google Scholar ]

28. English D, Lambert SF, Ialongo NS. Longitudinal associations between experienced racial discrimination and depressive symptoms in African American adolescents. Dev Psychol. 2014;50(4):1190. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

29. Rapee RM, Oar EL, Johnco CJ, et al. Adolescent development and risk for the onset of social-emotional disorders: a review and conceptual model. Behav Res Ther. 2019;123:103501. [DOI ] [PubMed] [Google Scholar ]

30. Elmore AL, Crouch E. The association of adverse childhood experiences with anxiety and depression for children and youth, 8 to 17 years of age. Acad Pediatr. 2020;20(5):600–608. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

31. Balistreri KS, Alvira-Hammond M. Adverse childhood experiences, family functioning and adolescent health and emotional well-being. Public Health. 2016;132:72–78. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

32. Jernigan MM, Daniel JH. Racial trauma in the lives of Black children and adolescents: challenges and clinical implications. J Child Adolesc Trauma. 2011;4(2):123–141. [Google Scholar ]

33. Sanders-Phillips K. Racial discrimination: a continuum of violence exposure for children of color. Clin Child Fam Psychol Rev. 2009;12(2):174–195. [DOI ] [PubMed] [Google Scholar ]

34. Saleem FT, Anderson RE, Williams M. Addressing the “myth” of racial trauma: developmental and ecological considerations for youth of color. Clin Child Fam Psychol Rev. 2020;23(1):1–14. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

35. Quintana SM. Racial and ethnic identity: developmental perspectives and research. J Couns Psychol. 2007;54(3):259. [Google Scholar ]

36. Guyer AE, Silk JS, Nelson EE. The neurobiology of the emotional adolescent: from the inside out. Neurosci Biobehav Rev. 2016;70:74–85. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

37. Spears Brown C, Bigler RS. Children's perceptions of discrimination: a developmental model. Child Dev. 2005;76(3):533–553. [DOI ] [PubMed] [Google Scholar ]

38. Sellers RM, Copeland–Linder N, Martin PP, Lewis RLH. Racial identity matters: the relationship between racial discrimination and psychological functioning in African American adolescents. Journal of Research on Adolescence. 2006;16(2):187–216. [Google Scholar ]

39. Greenwald R. Child Trauma Handbook: A Guide for Helping Trauma-Exposed Children and Adolescents. Routledge; 2015. [Google Scholar ]

40. Thompson T, Massat CR. Experiences of violence, post-traumatic stress, academic achievement and behavior problems of urban African-American children. Child and Adolescent Social Work Journal. 2005;22(5):367–393. [Google Scholar ]

41. Hamblen J. PTSD in children and adolescents: A National Center for PTSD fact sheet. www.ncptsd.org . 2016. Downloaded on March 21 2022.

42. Gibbons FX, Roberts ME, Gerrard M, et al. The impact of stress on the life history strategies of African American adolescents: cognitions, genetic moderation, and the role of discrimination. Dev Psychol. 2012;48(3):722. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

43. Carter RT, Lau MY, Johnson V, Kirkinis K. Racial discrimination and health outcomes among racial/ethnic minorities: a meta–analytic review. J Multicult Couns Devel. 2017;45(4):232–259. [Google Scholar ]

44. Pascoe EA, Smart Richman L. Perceived discrimination and health: a meta-analytic review. Psychol Bull. 2009;135(4):531. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

45. Vines AI, Ward JB, Cordoba E, Black KZ. Perceived racial/ethnic discrimination and mental health: a review and future directions for social epidemiology. Curr Epidemiol Rep. 2017;4(2):156–165. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

46. Agnew R. General Strain Theory: Current Status and Directions for Further Research. In: Cullen FT, Wright JP, Blevins KB, eds. *Taking Stock: The Status of Criminological Theory*. Routledge; 2017. p. 101–123. [Google Scholar ]

47. Zimmerman GM, Miller-Smith A. The impact of anticipated, vicarious, and experienced racial and ethnic discrimination on depression and suicidal behavior among Chicago youth. Soc Sci Res. 2022;101:102623. [DOI ] [PubMed] [Google Scholar ]

48. Cassidy C, O'Connor RC, Howe C, Warden D. Perceived discrimination and psychological distress: the role of personal and ethnic self-esteem. J Couns Psychol. 2004;51(3):329. [Google Scholar ]

49. Umaña-Taylor AJ, Updegraff KA. Latino adolescents' mental health: exploring the interrelations among discrimination, ethnic identity, cultural orientation, self-esteem, and depressive symptoms. J Adolesc. 2007;30(4):549–567. [DOI ] [PubMed] [Google Scholar ]

50. Branscombe NR, Schmitt MT, Harvey RD. Perceiving pervasive discrimination among African Americans: implications for group identification and well-being. J Pers Soc Psychol. 1999;77(1):135. [Google Scholar ]

51. Hunte HE, King K, Hicken M, Lee H, Lewis TT. Interpersonal discrimination and depressive symptomatology: examination of several personality-related characteristics as potential

confounders in a racial/ethnic heterogeneous adult sample. BMC public Health. 2013;13(1):1–10. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

52. Moradi B, Hasan NT. Arab American persons' reported experiences of discrimination and mental health: the mediating role of personal control. J Couns Psychol. 2004;51(4):418. [Google Scholar ]

53. Moradi B, Risco C. Perceived discrimination experiences and mental health of Latina/o American persons. J Couns Psychol. 2006;53(4):411. [Google Scholar ]

54. Seaton EK, Iida M. Racial discrimination and racial identity: daily moderation among Black youth. American Psychologist. 2019;74(1):117. [DOI ] [PubMed] [Google Scholar ]

55. Anderson RE, Stevenson HC. RECASTing racial stress and trauma: theorizing the healing potential of racial socialization in families. American Psychologist. 2019;74(1):63. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

56. Stevenson H. RECAST Theory: Racial Encounter Coping Appraisal and Socialization Theory. In: Promoting Racial Literacy in Schools: Differences That Make a Difference. Teachers College Press; 2014. p. 113–157. [Google Scholar ]

57. Bair AN, Steele JR. Examining the consequences of exposure to racism for the executive functioning of Black students. J Exp Soc Psychol. 2010;46(1):127–132. [Google Scholar ]

58. Murphy MC, Richeson JA, Shelton JN, Rheinschmidt ML, Bergsieker HB. Cognitive costs of contemporary prejudice. Group Process Intergroup Relat. 2013;16(5):560–571. [Google Scholar ]

59. Borders A, Liang CT. Rumination partially mediates the associations between perceived ethnic discrimination, emotional distress, and aggression. Cultural Diversity and Ethnic Minority Psychology. 2011;17(2):125. [DOI ] [PubMed] [Google Scholar ]

60. Miranda R, Polanco-Roman L, Tsypes A, Valderrama J. Perceived discrimination, ruminative subtypes, and risk for depressive symptoms in emerging adulthood. Cultural Diversity and Ethnic Minority Psychology. 2013;19(4):395. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

61. Hill LK, Hoggard LS. Active coping moderates associations among race-related stress, rumination, and depressive symptoms in emerging adult African American women. Dev Psychopathol. 2018;30(5):1817–1835. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

62. Bernard DL, Halliday CA, Are F, Banks DE, Danielson CK. Rumination as a mediator of the association between racial discrimination and depression among Black youth. J Racial Ethn Health Disparities. 2022;in press. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

63. Clark R, Anderson NB, Clark VR, Williams DR. Racism as a stressor for African Americans: a biopsychosocial model. American Psychologist. 1999;54(10):805. [DOI ] [PubMed] [Google Scholar ]

64. Wilson TK, Gentzler AL. Emotion regulation and coping with racial stressors among African Americans across the lifespan. Dev Rev. 2021;61:100967. [Google Scholar ]

65. Polanco-Roman L, Danies A, Anglin DM. Racial discrimination as race-based trauma, coping strategies, and dissociative symptoms among emerging adults. Psychological Trauma: Theory, Research, Practice, and Policy. 2016;8(5):609. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

66. Sanders Thompson VL. Coping responses and the experience of discrimination 1. J Appl Soc Psychol. 2006;36(5):1198–1214. [Google Scholar ]

67. Mata-Greve F, Torres L. Ethnic discrimination, sexism, and depression among Latinx women: the roles of anxiety sensitivity and expressive suppression. Journal of Latinx Psychology. 2020;8(4):317. [Google Scholar ]

68. Hammond WP. Taking it like a man: masculine role norms as moderators of the racial discrimination–depressive symptoms association among African American men. Am J Public Health. 2012;102(S2):S232–SS41. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

69. Gross JT, Cassidy J. Expressive suppression of negative emotions in children and adolescents: theory, data, and a guide for future research. Dev Psychol. 2019;55(9):1938. [DOI ] [PubMed] [Google Scholar ]

70. Rottenberg J. Emotions in depression: what do we really know? Annu Rev Clin Psychol. 2017;13:241–263. [DOI ] [PubMed] [Google Scholar ]

71. Harrell SP. A multidimensional conceptualization of racism–related stress: implications for the well–being of people of color. American Journal of Orthopsychiatry. 2000;70(1):42–57. [DOI ] [PubMed] [Google Scholar ]

72. Sue DW, Capodilupo CM, Torino GC, et al. Racial microaggressions in everyday life: implications for clinical practice. American Psychologist. 2007;62(4):271. [DOI ] [PubMed] [Google Scholar ]

73. Huynh VW, Huynh Q-L, Stein M-P. Not just sticks and stones: indirect ethnic discrimination leads to greater physiological reactivity. Cultural Diversity and Ethnic Minority Psychology. 2017;23(3):425. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

74. Williams MG, Lewis JA. Gendered racial microaggressions and depressive symptoms among Black women: a moderated mediation model. Psychol Women Q. 2019;43(3):368–380. [Google Scholar ]

75. Dale SK, Safren SA. Gendered racial microaggressions associated with depression diagnosis among Black women living with HIV. J Urban Health. 2020;97(3):377–386. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

76. Torres L, Taknint JT. Ethnic microaggressions, traumatic stress symptoms, and Latino depression: a moderated mediational model. J Couns Psychol. 2015;62(3):393. [DOI ] [PubMed] [Google Scholar ]

77. Auguste EE, Cruise KR, Jimenez MC. The effects of microaggressions on depression in young adults of color: investigating the impact of traumatic event exposures and trauma reactions. J Trauma Stress. 2021;34(5):985–994. [DOI ] [PubMed] [Google Scholar ]

78. Heard-Garris NJ, Cale M, Camaj L, Hamati MC, Dominguez TP. Transmitting trauma: a systematic review of vicarious racism and child health. Soc Sci Med. 2018;199:230–240. [DOI ] [PubMed] [Google Scholar ]

79. Chae DH, Yip T, Martz CD, et al. Vicarious racism and vigilance during the COVID-19 pandemic: mental health implications among Asian and Black Americans. Public Health Rep. 2021:136(4):508–517. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

80. English D, Lambert SF, Tynes BM, Bowleg L, Zea MC, Howard LC. Daily multidimensional racial discrimination among Black US American adolescents. J Appl Dev Psychol. 2020;66:101068. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

81. Heard-Garris NJ, Ekwueme PO, Gilpin S, et al. Adolescents' experiences, emotions, and coping strategies associated with exposure to media-based vicarious racism. JAMA network Open. 2021;4(6):e2113522–e. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

82. Keum BT. Qualitative examination on the influences of the internet on racism and its online manifestation. *International journal of cyber behavior* Psychology and Learning (IJCBPL. 2017;7(3):13–22. [Google Scholar ]

83. Bor J, Venkataramani AS, Williams DR, Tsai AC. Police killings and their spillover effects on the mental health of Black Americans: a population-based, quasi-experimental study. The Lancet. 2018;392(10144):302–310. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

84. Tynes BM, Willis HA, Stewart AM, Hamilton MW. Race-related traumatic events online and mental health among adolescents of color. Journal of Adolescent Health. 2019;65(3):371–377. [DOI ] [PubMed] [Google Scholar ]

85. Tynes BM, Giang MT, Williams DR, Thompson GN. Online racial discrimination and psychological adjustment among adolescents. Journal of Adolescent Health. 2008;43(6):565–569. [DOI ] [PubMed] [Google Scholar ]

86. Eichstaedt JC, Sherman GT, Giorgi S, et al. The emotional and mental health impact of the murder of George Floyd on the US population. Proc Natl Acad Sci U S A. 2021;118(39):e2109139118. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

87. Miller HN, LaFave S, Marineau L, Stephens J, Thorpe RJ, Jr. The impact of discrimination on allostatic load in adults: an integrative review of literature. J Psychosom Res. 2021;146:110434. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

88. Mays VM, Cochran SD, Barnes NW. Race, race-based discrimination, and health outcomes among African Americans. Annu Rev Psychol. 2007;58:201–225. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

89. Brondolo E, Libby DJ, Denton E-g, et al. Racism and ambulatory blood pressure in a community sample. Psychosom Med. 2008;70(1):49–56. [DOI ] [PubMed] [Google Scholar ]

90. Lewis TT, Cogburn CD, Williams DR. Self-reported experiences of discrimination and health: scientific advances, ongoing controversies, and emerging issues. Annu Rev Clin Psychol. 2015;11:407–440. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

91. Simons RL, Lei M-K, Klopack E, Zhang Y, Gibbons FX, Beach SR. Racial discrimination, inflammation, and chronic illness among African American women at midlife: support for the weathering perspective. J Racial Ethn Health Disparities. 2021;8(2):339–349. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

92. Brody GH, Lei MK, Chae DH, Yu T, Kogan SM, Beach SR. Perceived discrimination among African A merican adolescents and allostatic load: a longitudinal analysis with buffering effects. Child Dev. 2014;85(3):989–1002. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

93. Brody GH, Yu T, Beach SR. Resilience to adversity and the early origins of disease. Dev Psychopathol. 2016;28(4pt2):1347–1365. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

94. Meyer CS, Schreiner PJ, Lim K, Battapady H, Launer LJ. Depressive symptomatology, racial discrimination experience, and brain tissue volumes observed on magnetic resonance imaging: the CARDIA study. Am J Epidemiol. 2019;188(4):656–663. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

95. Fani N, Harnett NG, Bradley B, et al. Racial discrimination and white matter microstructure in trauma-exposed Black women. Biol Psychiatry. 2022;91(3):254–261. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

96. Clark US, Miller ER, Hegde RR. Experiences of discrimination are associated with greater resting amygdala activity and functional connectivity. Biological Psychiatry: Cognitive Neuroscience and Neuroimaging. 2018;3(4):367–378. [DOI ] [PMC free article] [PubMed] [ Google Scholar ]

97. Geronimus AT, Hicken M, Keene D, Bound J. “Weathering” and age patterns of allostatic load scores among Blacks and Whites in the United States. Am J Public Health. 2006;96(5):826–833. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

98. Simons RL, Lei M-K, Klopack E, Beach SR, Gibbons FX, Philibert RA. The effects of social adversity, discrimination, and health risk behaviors on the accelerated aging of African Americans: further support for the weathering hypothesis. Soc Sci Med. 2021;282:113169. [ DOI ] [PMC free article] [PubMed] [Google Scholar ]

99. Carter SE, Ong ML, Simons RL, Gibbons FX, Lei MK, Beach SR. The effect of early discrimination on accelerated aging among African Americans. Health Psychol. 2019;38(11):1010. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

100. Price RB, Duman R. Neuroplasticity in cognitive and psychological mechanisms of depression: an integrative model. Mol Psychiatry. 2020;25(3):530–543. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

101. Price RB, Woody ML. Emotional disorders in development. In: Della Sala S, ed. Encyclopedia of Behavioral Neuroscience. 2 ed. Elsevier Science; 2021: p. 364–368. [Google Scholar ]

102. Norrholm SD, Glover EM, Stevens JS, et al. Fear load: the psychophysiological over-expression of fear as an intermediate phenotype associated with trauma reactions. Int J Psychophysiol. 2015;98(2):270–275. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

103. Fani N, Carter SE, Harnett NG, Ressler KJ, Bradley B. Association of racial discrimination with neural response to threat in Black women in the US exposed to trauma. JAMA psychiatry. 2021;78(9):1005–1012. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

104. Alexandra Kredlow M, Pineles SL, Inslicht SS, et al. Assessment of skin conductance in African American and non–African American participants in studies of conditioned fear. Psychophysiology. 2017;54(11):1741–1754. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

105. Harnett NG, Wheelock MD, Wood KH, et al. Negative life experiences contribute to racial differences in the neural response to threat. Neuroimage. 2019;202:116086. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

106. Webb EK, Weis CN, Huggins AA, et al. Neural impact of neighborhood socioeconomic disadvantage in traumatically injured adults. Neurobiol Stress. 2021;15:100385. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

107. Neblett EW, Jr. Racism and health: challenges and future directions in behavioral and psychological research. Cultural Diversity and Ethnic Minority Psychology. 2019;25(1):12. [DOI ] [PubMed] [Google Scholar ]

108. Hope EC, Brinkman M, Hoggard LS, et al. Black adolescents' anticipatory stress responses to multilevel racism: the role of racial identity. American Journal of Orthopsychiatry. 2021;91(4):487–498. [DOI ] [PubMed] [Google Scholar ]

109. Armstead CA, Lawler KA, Gorden G, Cross J, Gibbons J. Relationship of racial stressors to blood pressure responses and anger expression in Black college students. Health Psychol. 1989;8(5):541. [DOI ] [PubMed] [Google Scholar ]

110. Kort DN. We can't breathe: Affective and psychophysiological reactivity of vicarious discrimination 2016.

111. Volpe VV, Lee DB, Hoggard LS, Rahal D. Racial discrimination and acute physiological responses among Black young adults: the role of racial identity. Journal of Adolescent Health. 2019;64(2):179–185. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

112. Jones DR, Harrell JP, Morris-Prather CE, Thomas J, Omowale N. Affective and physiological responses to racism: the roles of Afrocentrism and mode of presentation. Ethn Dis. 1996;6(1–2):109–122. [PubMed] [Google Scholar ]

113. Neblett EW, Jr, Roberts SO. Racial identity and autonomic responses to racial discrimination. Psychophysiology. 2013;50(10):943–953. [DOI ] [PubMed] [Google Scholar ]

114. Sawyer PJ, Major B, Casad BJ, Townsend SS, Mendes WB. Discrimination and the stress response: psychological and physiological consequences of anticipating prejudice in interethnic interactions. Am J Public Health. 2012;102(5):1020–1026. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

115. McLaughlin KA, Colich NL, Rodman AM, Weissman DG. Mechanisms linking childhood trauma exposure and psychopathology: a transdiagnostic model of risk and resilience. BMC Med. 2020;18(96):1–11. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

116. LaVeist TA, Thorpe RJ, Jr, Pierre G, Mance GA, Williams DR. The relationships among vigilant coping style, race, and depression. J Soc Issues. 2014;70(2):241. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

117. Himmelstein MS, Young DM, Sanchez DT, Jackson JS. Vigilance in the discrimination-stress model for Black Americans. Psychol Health. 2015;30(3):253–267. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

118. Woody ML, Price RB. Targeting neurodevelopmental mechanisms in emotional disorders through intervention. In: Sala SD, ed. Encyclopedia of Behavioral Neuroscience. 2 ed. Elsevier Science; 2021: p. 289–294. [Google Scholar ]

119. Masten CL, Telzer EH, Eisenberger NI. An fMRI investigation of attributing negative social treatment to racial discrimination. J Cogn Neurosci. 2011;23(5):1042–1051. [DOI ] [PubMed] [Google Scholar ]

120. Brosschot JF, Gerin W, Thayer JF. The perseverative cognition hypothesis: a review of worry, prolonged stress-related physiological activation, and health. J Psychosom Res. 2006;60(2):113–124. [DOI ] [PubMed] [Google Scholar ]

121. Coogan P, Schon K, Li S, Cozier Y, Bethea T, Rosenberg L. Experiences of racism and subjective cognitive function in African American women. Alzheimer's & Dementia: Diagnosis,

Assessment & Disease Monitoring. 2020;12(1):e12067. [DOI ] [PMC free article] [PubMed] [ Google Scholar ]

122. Levy DJ, Heissel JA, Richeson JA, Adam EK. Psychological and biological responses to race-based social stress as pathways to disparities in educational outcomes. American Psychologist. 2016;71(6):455. [DOI ] [PubMed] [Google Scholar ]

123. Brown TH. Trauma-related sleep disturbance in youth. Curr Opin Psychol. 2020;34:128–132. [DOI ] [PubMed] [Google Scholar ]

124. Williams DR, Mohammed SA. Discrimination and racial disparities in health: evidence and needed research. J Behav Med. 2009;32(1):20–47. [DOI ] [PMC free article] [PubMed] [ Google Scholar ]

125. Silk JS, Davis S, McMakin DL, Dahl RE, Forbes EE. Why do anxious children become depressed teenagers? The role of social evaluative threat and reward processing. Psychol Med. 2012;42(10):2095–2107. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

126. Teicher MH, Samson JA, Anderson CM, Ohashi K. The effects of childhood maltreatment on brain structure, function and connectivity. Nat Rev Neurosci. 2016;17(10):652–666. [DOI ] [PubMed] [Google Scholar ]

127. Tomoda A, Polcari A, Anderson CM, Teicher MH. Reduced visual cortex gray matter volume and thickness in young adults who witnessed domestic violence during childhood. PloS one. 2012;7(12):e52528. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

128. Choi J, Jeong B, Polcari A, Rohan ML, Teicher MH. Reduced fractional anisotropy in the visual limbic pathway of young adults witnessing domestic violence in childhood. Neuroimage. 2012;59(2):1071–1079. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

129. Bronfenbrenner U. Ecological Systems Theory. In: Vasta R (ed), *Six Theories of Child Development: Revised Formulations and Current Issues*. Jessica Kingsley Publishers; 1992: p. 187–249. [Google Scholar ]

130. Clark R, Benkert RA, Flack JM. Large arterial elasticity varies as a function of gender and racism-related vigilance in Black youth. Journal of Adolescent Health. 2006;39(4):562–569. [ DOI ] [PubMed] [Google Scholar ]

131. Joseph NT, Peterson LM, Gordon H, Kamarck TW. The double burden of racial discrimination in daily-life moments: increases in negative emotions and depletion of

psychosocial resources among emerging adult African Americans. Cultural Diversity and Ethnic Minority Psychology. 2021;27(2):234. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

132. Rosen D, Price RB, Silk JS. An integrative review of the vigilance-avoidance model in pediatric anxiety disorders: are we looking in the wrong place? J Anxiety Disord. 2019;64:79–89. [DOI ] [PubMed] [Google Scholar ]

133. Pérez-Edgar K, MacNeill LA, Fu X. Navigating through the experienced environment: insights from mobile eye-tracking. Curr Dir Psychol Sci. 2020;29(3):286–292. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

134. Morris ME, Aguilera A. Mobile, social, and wearable computing and the evolution of psychological practice. Professional Psychology: Research and Practice. 2012;43(6):622. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

135. Silk JS. Context and dynamics: the new frontier for developmental research on emotion regulation. Dev Psychol. 2019;55(9):2009. [DOI ] [PubMed] [Google Scholar ]

136. Weierich MR, Treat TA, Hollingworth A. Theories and measurement of visual attentional processing in anxiety. Cognition and Emotion. 2008;22(6):985–1018. [Google Scholar ]

137. Harrell JP, Hall S, Taliaferro J. Physiological responses to racism and discrimination: an assessment of the evidence. Am J Public Health. 2003;93(2):243–248. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

138. Cicchetti D, Rogosch FA. A developmental psychopathology perspective on adolescence. J Consult Clin Psychol. 2002;70(1):6. [DOI ] [PubMed] [Google Scholar ]

139. Jones SC, Anderson RE, Gaskin-Wasson AL, Sawyer BA, Applewhite K, Metzger IW. From “crib to coffin”: navigating coping from racism-related stress throughout the lifespan of Black Americans. American Journal of Orthopsychiatry. 2020;90(2):267. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

140. Neblett EW, Jr, Sosoo EE, Willis HA, Bernard DL, Bae J, Billingsley JT. Racism, racial resilience, and African American youth development: person-centered analysis as a tool to promote equity and justice. Adv Child Dev Behav. 2016;51:43–79. [DOI ] [PubMed] [Google Scholar ]

141. Molenaar PC, Campbell CG. The new person-specific paradigm in psychology. Curr Dir Psychol Sci. 2009;18(2):112–117. [Google Scholar ]

142. Carnethon MR, Kershaw KN, Kandula NR. Disparities research, disparities researchers, and health equity. JAMA. 2020;323(3):211–212. [DOI ] [PubMed] [Google Scholar ]

143. Graham JR, West LM, Roemer L. The experience of racism and anxiety symptoms in an African-American sample: moderating effects of trait mindfulness. Mindfulness (N Y). 2013;4(4):332–341. [Google Scholar ]

144. Day–Vines NL, Cluxton–Keller F, Agorsor C, Gubara S. Strategies for broaching the subjects of race, ethnicity, and culture. Journal of Counseling & Development. 2021;99(3):348–357. [ Google Scholar ]

145. Pieterse AL. Attending to racial trauma in clinical supervision: enhancing client and supervisee outcomes. Clin Superv. 2018;37(1):204–220. [Google Scholar ]

146. Jones SC, Anderson RE, Metzger IW. “Standing in the gap”: the continued importance of culturally competent therapeutic interventions for Black youth. Evidence-Based Practice in Child and Adolescent Mental Health. 2020;5(3):327–339. [Google Scholar ]

147. Neblett EW, Jr, Sosoo EE, WilliS HA, Bernard DL, Bae J. Cognitive behavioral models, measures, and treatments for depressive disorders in African Americans. 2018.

148. Bryant-Davis T. The cultural context of trauma recovery: considering the posttraumatic stress disorder practice guideline and intersectionality. Psychotherapy. 2019;56(3):400. [DOI ] [PubMed] [Google Scholar ]

149. Anderson RE, McKenny M, Mitchell A, Koku L, Stevenson HC. EMBRacing racial stress and trauma: preliminary feasibility and coping responses of a racial socialization intervention. Journal of Black Psychology. 2018;44(1):25–46. [Google Scholar ]

150. Anderson RE, McKenny MC, Stevenson HC. EMBR Ace: developing a racial socialization intervention to reduce racial stress and enhance racial coping among Black parents and adolescents. Fam Process. 2019;58(1):53–67. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

151. Anderson RE, Metzger I, Applewhite K, et al. Hands up, now what?: Black Families’ reactions to racial socialization interventions. J Youth Dev. 2020;15(5):93–109. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

152. Anderson RE, Heard-Garris N, DeLapp RC. Future directions for vaccinating children against the American endemic: treating racism as a virus. Journal of Clinical Child & Adolescent Psychology. 2022;51:127–142. [DOI ] [PubMed] [Google Scholar ]

153. Kteily NS, Hodson G, Dhont K, Ho AK. Predisposed to prejudice but responsive to intergroup contact? Testing the unique benefits of intergroup contact across different types of individual differences. Group Process Intergroup Relat. 2019;22(1):3–25. [Google Scholar ]

154. Paluck EL, Green SA, Green DP. The contact hypothesis re-evaluated. Behavioural Public Policy. 2019;3(2):129–158. [Google Scholar ]

155. Benner AD, Graham S. The antecedents and consequences of racial/ethnic discrimination during adolescence: does the source of discrimination matter? Dev Psychol. 2013;49(8):1602. [ DOI ] [PubMed] [Google Scholar ]

# Racism as trauma: A pediatric mental health perspective

February 15, 2024 The REACH Institute

Anti-racism, Assessment & screening, Culturally responsive, Suicide, Trauma

There is a growing suicide crisis among Black youth. A 2018 study revealed that Black children aged five to 12 are twice as likely to die by suicide as white children. More recent research has shown that suicide rates among Black children and adolescents are rising dramatically, even as overall youth suicidality is declining.

How can clinicians better help Black pediatric patients who are at risk?

That's the question Brittainy Erby, MD, found herself asking. She knew the alarming statistics but found little practical guidance, especially since Black youth are seldom included in research studies. "As a child and adolescent psychiatrist, I didn't know what it meant for me as a provider. What could I do?"

Dr. Erby set out to find an answer.

"My journey began with learning about the history of racism where I work," explains Dr. Erby. She approached her research as a clinician, seeking to better understand the racial traumas her Black patients were experiencing.

## Racism as Trauma: Mental Health Implications

The negative impact of Adverse Childhood Experiences or ACEs on children's development and long-term mental health is well documented. Even one ACE increases a person's risk of depression. An individual who experiences seven ACEs is 51 times more likely to end their life.

However, the impact of racial discrimination as an Adverse Childhood Experience, and its relationship to other ACEs, is only recently beginning to receive attention and research. Dr. Erby reveals that, due to systemic racism, "Black children may be born into systems where they could have three or more ACEs starting at birth."

Racial traumas only continue from there. In a survey of youth of color from the AAKOMA Project, 40% of respondents reported experiencing racial trauma in the past year. In addition, 18% of survey respondents had attempted suicide, with rates for Black youth significantly higher than any other racial group.

Children and young people with multiple ACEs often struggle with emotion regulation, anger, and executive functioning. Because of systemic racism and ongoing bias, rather than receiving treatment for their trauma and mental health conditions, Black children are often labeled as "problems." For example, as early as preschool,

children of color are disciplined at twice the rate of white children. In elementary and high school, Black students are three times as likely to be expelled and four times as likely to face multiple suspensions.

This bias can lead to misdiagnosis of mental health conditions, particularly if physicians are not aware of the impacts of racial trauma. Dr. Erby has seen Black children diagnosed with bipolar disorder, multiple personality disorders, and schizophrenia when, in reality, they were dealing with complex trauma. This type of misdiagnosis only creates further harm and delays effective treatment.

However, Dr. Erby reveals that getting to a better diagnosis and treatment does not have to be complex.

## How Clinicians Can Better Support Black Patients

While realizing the enormity of the impact of racial trauma can feel overwhelming, Dr. Erby explains, "You don't have to quit your practice and go change the world to make a difference. Having the language to ask kids questions in your office and letting them speak could save a Black child's life."

Based on the research she has conducted, Dr. Erby makes the following recommendations for clinicians seeking to better support their Black patients.

### *Get comfortable talking to patients of color about racism*

Talking about racism is not necessarily comfortable for many clinicians. But to treat mental health conditions in patients of color, it's increasingly important. Simply being aware of where Black patients are coming from and allowing space for them to speak can be incredibly powerful. This is especially important for Black male children and adolescents, who have the highest suicide rates.

"Do not be afraid to ask details," explains Dr. Erby. "Ask when symptoms started and why and how. Kids will quickly become guarded and closed up if they can feel your anxiety. So prioritize being curious."

### *Use appropriate screening tools*

Not all children and adolescents will have the words to describe racial trauma. They may be hesitant to respond when asked directly. That's where assessment tools can help bridge the gap and provide a common language for clinicians and patients.

Dr. Erby uses the Everyday Discrimination Scale with her patients. It provides nine simple questions that can help young people articulate their experiences of discrimination, which they may not even recognize as trauma. When Black patients share their experiences of racism, Dr. Erby ensures they feel validated, acknowledges that they have likely been devalued when speaking about this topic previously, and helps them recognize these experiences as trauma.

### *Create an inclusive environment*

The office environment can also affect patients' willingness to share openly. Dr. Erby recommends reviewing everything in the office: posters on the walls, pamphlets and books in the waiting room, and photos on desks to make sure Black people and other people of color are represented in these materials.

Dr. Erby also recommends that clinicians take the time to explore their own internal biases. "It's easy to get defensive and want to say, 'I'm not racist.' But we all have biases that go so much deeper than our conscious mindset."

To better understand patients' exposures to systemic racism, Dr. Erby advises clinicians to be aware of the history of their local geography and statistics about the local school system, juvenile system, incarceration rates, and socioeconomic conditions. As Dr. Erby shares, these are all "factors that could be affecting a Black child coming into your office."

## RESOURCES

- Dr. Brittainy Erby has developed a unique, impactful, and practical lecture, *"Racism as Trauma: What do I do about it?*" The 60-minute session guides clinicians through key steps to improve care for patients of color struggling with racial trauma. To learn more about how to bring this lecture to your practice, please contact Dr. Erby at erbylectureseries@gmail.com.
- For clinicians and patients alike, Dr. Erby recommends *The Unapologetic Guide to Black Mental Health* and its companion, *The Unapologetic Workbook for Black Mental Health*.

- For pediatric patients, clinicians can recommend the *Self Love Workbook for Teen and Tween Boys* and *Girls Like Me Can Do Anything*.
- If you're looking for reading material for younger patients in your office, consider: *Don't Touch My Hair!*, *Brown Boy Joy*, and *Little Dreamers: Visionary Women Around the World*.
- In addition to the Everyday Discrimination Scale, Dr. Erby recommends two other screening tools. The UNREST questionnaire can prompt patients to share their experiences with alienation, social resistance, pushback received for not acting white, and everyday discrimination. The Trauma Symptoms of Discrimination Scale can help providers and patients connect experiences of discrimination to trauma effects.

## Categories

ADHD
Anti-racism
Anxiety
Assessment & screening
Autism
Child mental health
Coding
Cognitive behavioral therapy
College transition
Culturally responsive
Depression
Eating disorders
Foster care
Grief
High-risk children & youth
LGBTQIA
Medication
Parents
Patient communication
Pediatric primary care
School refusal
Sleep disorders
Suicide
Trauma
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# The Enduring Effects of Childhood Poverty

**By Indivar Dutta-Gupta**

*This is the first in a series of commentaries from CLASP experts that explore dimensions of poverty ahead of the U.S. Census Bureau's annual release of poverty and income statistics from the previous year. On September 12, we'll get a snapshot of the economic hardship children and families experienced in 2022. Ahead of the release, CLASP experts will offer key insights on the long-term effects of child poverty, promising policy solutions for ending child poverty, links between poverty and mental health, why it's important to have a more accurate measurement of poverty, and what trends we expect to see in this year's poverty data.*

As I noted in my recent testimony (https://www.clasp.org/publications/testimony/comments/25-years-of-progress-for-children/) to Congress on the history of bipartisan support behind the child tax credit, poverty is bad for children. Children experience poverty through hardships like hunger and inadequate nutrition (https://www.nokidhungry.org/who-we-are/hunger-facts), insufficient access to health care (https://pubmed.ncbi.nlm.nih.gov/29323941/), unstable housing and homelessness (https://www.irp.wisc.edu/resource/unaffordable-america-poverty-housing-and-eviction/), and the toxic stress experienced by their parents (https://inequality.stanford.edu/sites/default/files/PathwaysWinter11_Evans.pdf), whose struggle to survive without adequate supports hampers their ability to consistently care for and nurture their children. The impacts of childhood poverty are immediate and dire: impaired cognitive and emotional development (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5765853/), behavioral challenges, and a lack of school readiness (https://www.ffyf.org/major-study-shows-poverty-directly-linked-to-lack-of-school-readiness/).

But we must also consider the long-term consequences of childhood poverty. How will our society pay the price if policymakers fail to end it? Multiple studies show that children who grow up in poverty are more likely to experience poverty and health challenges as

adults. They are also less likely to finish high school or college, limiting their earnings and employment opportunities. Nearly all the research relies upon a Panel Study of Income Dynamics (PSID (https://psidonline.isr.umich.edu/)), a longitudinal survey that started tracking different cohorts of children over multiple decades when it launched in 1968. Here are the facts:

**The longer children live in poverty, the more likely they will experience poverty as adults**

Researchers at the National Center for Children in Poverty (https://www.nccp.org/publication/childhood-and-intergenerational-poverty/) analyzed PSID data from children born between the 1970s and 1990s and found that 35 percent of children experienced poverty at some point from birth to age 15. However, time spent in poverty varies significantly by race: nearly one-quarter of Black children—and just 3 percent of white children–spent more than three-quarters of their childhood in poverty.

The length of time spent in poverty translates into a greater likelihood of remaining in poverty as an adult, the researchers found. Children who spent 8 to 14 years in poverty were 5 times (45.3 percent) as likely to be in poverty at age 35 compared to children who spent less than 7 years in poverty, just 8.1 percent of whom were in poverty at 35.

**Childhood poverty is associated with reduced educational attainment and economic prospects**

A 2015 Urban Institute study (https://www.urban.org/research/publication/child-poverty-and-adult-success) found that only 77.9 percent of children who experienced poverty completed high school, compared to 92.7 percent of children who never experienced poverty. The study also confirms that the longer children spend in poverty, the less likely they are to achieve key milestones such as high school and college completion and to be consistently employed in their 20s. (In the next post, I'll discuss empirical studies that demonstrate a causal link between income supports and children's educational outcomes.)

The costs of doing nothing about childhood poverty reverberate from the individual child and her family to neighborhoods and communities and, finally, to the macroeconomy. A

2018 study (https://academic.oup.com/swr/article-abstract/42/2/73/4956930?redirectedFrom=fulltext&login=false) estimates that child poverty costs the U.S. economy just over $1 trillion per year, or 5.4 percent of GDP. These costs come in the form of lost economic productivity and spending related to crime, health care, child welfare, and homelessness. Researchers estimate (https://nap.nationalacademies.org/catalog/25246/a-roadmap-to-reducing-child-poverty) that for every dollar spent on reducing child poverty, the United States would gain back $7 in economic and social benefits.

**Childhood poverty leads to worse mental and physical health in adulthood**

Several studies illustrate how time spent in poverty during childhood results in adverse health outcomes in adulthood. One landmark study (https://pubmed.ncbi.nlm.nih.gov/20331669/) examined PSID data that tracked children until age 37 and found that those who experienced poverty in early childhood were twice as likely to report poor overall health and higher levels of psychological distress. They also had higher body mass index and were nearly 50 percent more likely to be overweight compared to adults who never experienced childhood poverty. Other research shows that childhood poverty is associated with higher rates of cardiovascular disease and diabetes (https://www.sciencedirect.com/science/article/abs/pii/S0378512211000466) as well as deficits in memory, chronic psychological distress, and feelings of helplessness (https://www.pnas.org/doi/10.1073/pnas.1604756114).

The evidence is crystal clear: childhood poverty has long-lasting, devastating consequences, severely limiting human and national potential by holding back individuals and communities, in turn dragging down our economic strength and living standards. In our next post, I will explore the evidence behind policy solutions with a demonstrated track record of success that can end the injustice of child poverty for good.

>> Read next: How to End Child Poverty for Good (https://www.clasp.org/blog/how-to-end-child-poverty-for-good/)

Census Poverty Report


# Indivar Dutta-Gupta

FORMER PRESIDENT & EXECUTIVE DIRECTOR

ABOUT INDIVAR DUTTA-GUPTA →

# Toxic stress and children's outcomes

## African American children growing up poor are at greater risk of disrupted physiological functioning and depressed academic achievement

Report • By Leila Morsy and Richard Rothstein • May 1, 2019

# Executive summary

"Stress" is a commonplace term for hormonal changes that occur in response to frightening or threatening events or conditions. When severe, these changes are termed "toxic" stress and can impede children's behavior, cognitive capacity, and emotional and physical health.

Frightening or threatening situations are more sustained and are experienced more frequently by African American and socially and economically disadvantaged children, who also have less access to protective resources that can mitigate their stress to tolerable levels. This report describes the relative frequency of toxic stress by race and social class, and shows how it depresses children's outcomes and contributes to the "achievement gap." We conclude by suggesting policy and practice recommendations that can reduce the cognitive, behavioral, and health harm that toxic stress provokes.

OPPORTUNITY INSTITUTE

This report was produced in collaboration with the **Opportunity Institute**

### Key findings

- **Social class and childhood stress.** Beginning in infancy, lower social class children are more likely to have strong, frequent, or prolonged exposure to major traumatic events, the frightening or threatening conditions that induce a stress response.
- **Income and childhood stress.** The lowest-income children are more likely to be exposed to frightening or threatening experiences than other children.
- **Race and childhood stress.** Black children are more likely than white children to be exposed to frightening or threatening experiences.
- **Childhood stress and depressed outcomes.** Independent of other characteristics, children exposed to more frightening and threatening events are more likely to suffer from academic problems, behavioral problems, and health problems.

These attributes present challenges to children's school and life trajectories.

### Policy recommendations

Ultimately, larger social change is needed to address the economic and social conditions at the root of children's toxic stress. But given that these larger social problems will not be remediated easily or quickly, policymakers must find other ways to improve current outcomes for children who are at high risk for toxic stress. We suggest the following interventions in policy and practice:

- **Provide supports for parents.** To promote protective parenting—which can mitigate children's toxic stress—we recommend implementation of support programs such as home visits and/or therapy services by community health workers, nurses, and other health specialists. These programs can offset the damaging effects of exposure to frightening or threatening conditions by building the capacity of caregivers to provide children with safe, stable, and nurturing relationships that help to develop children's adaptive and positive coping skills.
- **Train school staff to support children.** To prepare trauma-informed staff and improve how preschools and schools support children exposed to frightening or threatening experiences, adults in these settings should receive training to help them understand how such experiences affect students' learning and behavior.
- **Address racially disparate policies and practices in schools.** Schools should be especially careful to eliminate in-school experiences that can be so stressful that they themselves can generate a toxic stress response. Racially discriminatory discipline policies—indeed, racially disparate treatment of any kind, even if unintentional—can induce stress in children.
- **Engage health care professionals in screening and treatment.** Health care professionals can contribute to preventing and treating the harmful effects of frightening or threatening experiences. All children should be routinely screened for such experiences. Health care professionals should be trained to understand how frightening or threatening experiences impact children's cognitive, behavioral, and physical health outcomes, and screen and treat children for any resulting complications.

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# Introduction

Since the Coleman Report's release in 1966, education policymakers have grappled with the fact that, on average, African American children's academic and behavioral outcomes are depressed relative to those of white children (Coleman et al. 1966). Because African American children disproportionately come from low-income families, it is generally understood that the disadvantaged social and economic conditions from which many of these children come to school predict these depressed outcomes.

Seeking to improve outcomes for these children, education reform efforts have focused mostly on how higher-quality teaching can overcome the force of social and economic challenges; however, these efforts have failed to make a meaningful dent in the black–white achievement gap. Many policymakers continue to be perplexed that background characteristics should be so powerful, so resistant to offset by better schooling. Their puzzlement, however, results from a failure to understand the pathways by which socioeconomic disadvantage translates into worse performance and from a failure to devote sufficient attention to addressing these pathways directly. Some attention has been paid to differences in

parenting styles, early childhood literacy experiences, health conditions like lead poisoning or asthma, and some other background characteristics, each of which prevents disadvantaged children from taking full advantage of what even the best schools have to offer (Rothstein 2004; Morsy and Rothstein 2015a, 2015b, 2016). But much remains unexplained or insufficiently understood.

## Toxic stress and whole child policy

One of the plausibly powerful factors that blocks better performance for disadvantaged children is toxic stress response. The research literature is rich with discussions of how toxic stress response in children predicts depressed outcomes across a range of areas, including academic performance, behavior, and health.[1] And yet educators have only recently begun to pay attention to the relationship between toxic stress and how children fare in school, and to consider interventions that could possibly diminish its power.

In this report, we draw upon research in medicine, public health, epidemiology, economics, sociology, and psychology to show that across educational, behavioral, and health outcomes, children exposed to more frightening and threatening events are at a greater risk of the damaging effects of toxic stress.

We then offer recommendations for interventions that can help mitigate the effects of frightening and threatening events on children—reducing the likelihood they will develop toxic stress and suffer depressed outcomes.

## Methodological notes

This report does not attempt to isolate the effect of toxic stress on children's outcomes. The factors affecting disadvantaged children—including toxic stress, risk factors for toxic stress, and consequences of toxic stress—overlap and are often interdependent. There are no available databases by which the relative importance of toxic stress as a cause of lowered cognitive and behavioral outcomes can be assessed. But informed professionals, whose work we present in this report, judge that it is an important cause for a significant share of disadvantaged children.

Furthermore, this research reports population averages. Not all children exposed to frightening and threatening events will suffer from depressed outcomes. Some will achieve at rates that are higher than typically observed. Such achievement is not impossible for children with high exposure to frightening or threatening events, but it is less likely.

# What is toxic stress?

"Stress" is a natural response to frightening or threatening events or conditions. These can be of greater or lesser severity and the resulting stress can lead to changes in behavior, emotional health, and cognitive capacity. We refer to the stress induced by infrequent events or conditions of lesser severity as "tolerable stress." Stress can also be made tolerable when severe conditions are experienced in the presence of various emotional supports ("protective factors") upon which otherwise secure children can rely. Tolerable stress can contribute to better performance if individuals react by heightening their focus

on the fright or threat without distraction. But the stress can become toxic when the events or conditions precipitating it are severely frightening or threatening—especially when they are sustained or frequently repeated—and when protective factors are insufficient to mitigate the stress to tolerable levels. Then, toxic stress can produce not heightened focus but the opposite result, a decrease in performance levels.[2]

# How threatening experiences stimulate stress

A normal response to a frightening or threatening situation is the production of adrenaline, cortisol, and related hormones by the amygdala, hypothalamus, and adrenal and pituitary glands. When released, these hormones can affect almost every tissue and organ in the body (Dhabhar 2009, 216; HHP 2018). They send the brain a signal to attack the threat or escape from it. This "fight or flight" response is an essential survival mechanism in the face of a frightening or threatening situation. The stress hormones increase the body's heart rate, blood pressure, and breathing. They dilate the blood vessels and the bronchioles in the lungs, so that more oxygen reaches the brain, muscles, and vital organs. This sharpens a person's senses, including sight and hearing. Until the danger passes, cortisol keeps a person on high alert, limiting access to the parts of the brain responsible for memory and deliberative decision-making. Instead, a person's attention is placed on responding aggressively to the danger or escaping from it. After the threat is over, the body's physiological and behavioral functions can return to normal.

In these ways, the physiological and behavioral response is protective in the face of infrequent and tolerably stressful situations. But when frightening or threatening situations occur too frequently, stress becomes chronic and disrupts the brain's and body's responses. The body can over- or underproduce necessary hormones, and the body's physiology can fail to return to normal. This is a toxic stress response (Shonkoff et al. 2012, 236).

Examples of events that can produce toxic stress—because they are severe, frequent, or sustained—are psychological, physical, and sexual abuse; having a parent or close family member be incarcerated; witnessing domestic violence; physical or emotional neglect; family financial hardship; homelessness; exposure to neighborhood violence; discrimination; parental divorce or separation; placement in foster care or kinship care; property loss or damage from a fire or burglary; or having a family member become seriously ill or injured, be hospitalized, or die.[3]

Toxic stress and its associated hormone disruption can stunt brain growth and diminish brain activity in the prefrontal cortex, a region that controls executive function, learning, memory, attention, anxiety, and emotional regulation (Shonkoff et al. 2012, 236; Kim et al. 2013). It can elevate blood pressure for a sustained and unhealthy period and disrupt the metabolic system, and it can compromise the immune system, increasing vulnerability to infection and inflammation (Evans and Kim 2013, 44).

# Protective factors

Exposure to frightening or threatening events or conditions does not necessarily result in toxic stress. Children's susceptibility to toxic stress can be reduced by protective neighborhood, family, or school conditions, as these can help children develop effective self-regulation, i.e., the ability to respond

constructively to emotions and to manage behavior in response to frightening or threatening events.[4] Conversely, *negative* neighborhood, family, or school conditions can diminish protective factors and compound toxic stress.

## Neighborhood

**Living in a neighborhood that residents experience as orderly can be protective.** Living in a neighborhood that children and their parents are more likely to experience as disorderly—with characteristics such as excessive litter, vandalism, deteriorated and overcrowded housing, graffiti, noise, public drug and alcohol use, and conflict with neighbors in close quarters—can exacerbate children's toxic stress response to frightening or threatening events and impede parents' ability to protect children from that response. Living in a neighborhood that residents experience as more orderly can be protective (Evans 2004, 86, citing Evans 2001; Kleinhans and Bolt 2014, 420). Noise, litter, graffiti, conflict with neighbors, or any of these factors, when isolated or occasional, are unlikely to be frightening or dangerous but, when compounded, they can exacerbate a feeling of disorder and lack of control over one's environment.

In neighborhoods that are perceived as orderly, it is also more likely that parents have safe spaces to congregate, improving their sense of social connection (Shonkoff 2012, 17305). By supporting residents' overall sense of collective efficacy, such neighborhoods can enable parents to help their children cope with frightening or threatening conditions (Sampson, Raudenbush, and Earls 1997, 924; CWW 2013; Evans and Kim 2013). Such neighborhoods improve parents' sense of well-being, supporting their ability to be warm and responsive toward their children and thus helping the children to regulate their stress responses. As Robert Sampson has demonstrated, collective perceptions of neighborhood disorder are self-fulfilling prophecies, predicting future neighborhood poverty and segregation levels. Therefore, perceptions of neighborhood disorder impact not only residents' present lived experience, but by perpetuating racial and economic segregation, also influence the trajectory of their neighborhood, and thus influence the residents' ability to manage threatening or dangerous experiences (Sampson 2009, 24).

**High concentrations of parental incarceration in a neighborhood can not only diminish the protective capacity of affected families, it can also erode the overall protective capacity of the neighborhood.** Parental incarceration, more concentrated in segregated, low-income African American neighborhoods, contributes to the disruption of normal family support systems (Kramer and Hogue 2009, 182; Morsy and Rothstein 2016).[5] Incarceration often means the loss of an income for a family, and the ensuing economic instability can be disruptive for children and their parents.

This is a problem of both race and felony status: In terms of employment, the consequences of a criminal record are greater for black workers than for white workers. White job candidates who report a criminal conviction on an employment application get called back for interviews more frequently than demographically similar African American job candidates *without* a conviction. White prospective employees are favored even more in comparisons with black prospective employees when *all* applicants have criminal convictions (Pager 2003).

When a parent is incarcerated, the remaining parent may have to work longer hours to make up for the loss of income while also having to maintain primary responsibility for the care of the family and the household. The strain of normal daily pressures can be exacerbated by having an incarcerated family member. Partners and children of the incarcerated are more likely to suffer from mental health problems: For example, children of incarcerated fathers are 51 percent more likely to suffer from anxiety, 43 percent more likely to suffer from depression, and 72 percent more likely to suffer from post-traumatic stress disorder. And because of the emotional toll of having a spouse or partner incarcerated, a parent may be less able to give his or her child the positive attention and supervision that is supportive of healthy mental, behavioral, and physical development (Morsy and Rothstein 2016).

In segregated neighborhoods, where the incarceration of young black men is concentrated, the negative effects of imprisonment—deteriorated mental health and increased poverty, homelessness, and housing mobility—are multiplied and can damage the social fabric of a community, thus reducing the chances that the community can prevent children's stress from becoming toxic (Sampson and Loeffler 2010; Von Hoffman 2015).

## Family

When children have a network of stable, responsive relationships and caregivers with the financial, psychological, and social resources to nurture and protect them, they are more likely to cope successfully with frightening or threatening events. Such resources facilitate the return to normal of a child's stress hormones (Shonkoff et al. 2012, 235). Above, in the "Neighborhood" section, we discussed some of the factors that influence protective capacity in both families and neighborhoods. Below we discuss additional factors that predict whether families will have the capacity to act as protective buffers against children's toxic stress.

**Family household stability is a protective factor.** Living in an uncrowded home, or having fewer life transitions like moving homes or having family members move away from home, can protect children against developing a toxic stress response.[6] When children experience transitions, or have to cope with poor living conditions, they must find ways to adapt in order to mitigate their stress response. The effect of such events and conditions are cumulative, and when children experience fewer of them, they can more easily make such adjustments and decrease their risk of a toxic stress response.

**Parental emotional stability is a protective factor.** Emotional stability of parents can also protect children from toxic stress in response to frightening or threatening childhood experiences. Parents who are less stressed themselves are more likely to be able to listen, to problem-solve, to give and receive affection, and to provide children with cognitive stimulation, such as by reading, asking questions, encouraging discussion, playing games indoors and out, or doing arts and crafts projects with their children (Gershoff et al. 2007, 87, 95: Table 5). Such practices constitute the warm and responsive parenting that can provide a buffer against toxic stress. Unpredictable and inconsistent schedules can be distressing for children and can exacerbate a vulnerability to toxic stress, as can physical punishment (Gershoff 2016; Odgers and Jaffee 2013). Parents who are not stressed themselves are less likely to use corporal punishment to control their children's behavior or as a reactive response to misbehavior. They are also more likely to establish predictable and consistent schedules, including rules and routines around children's TV watching, meals, and bedtimes (Gershoff et al. 2007, 89–90: Figures 2 and 3).

**Family economic security can also be protective.** Economic strain can lead to material hardship, including food insecurity, residential instability, and inadequacy of medical care, all of which can be associated with increased stress for parents as well as for children (Wadsworth et al. 2008; Gershoff et al. 2007, 87, 95: Table 5).

**Stable parental employment can be a protective factor.** Parents who are regularly employed are more likely to have strong and supportive social networks and less likely to experience worry and strain (Lindsay 2010; Paul and Moser 2009; Roelfs et al. 2011, 841). As a result, they are likely better able to parent their children in ways that promote self-regulation and adaptive coping behaviors. Such parenting is characterized by being consistent, predictable, and nurturing of children's self-confidence and self-worth (Odgers and Jaffee 2013, 37–38).

**Parental experiences of racial discrimination can diminish their protective capacity.** Frequent and systematic racial discrimination, even when subtle or difficult to prove, has a damaging effect on psychological well-being. While systematic discrimination or verbal attacks are obvious and common, even more commonplace is chronic, everyday discriminatory treatment (frequently termed "micro-aggression") that takes the form of frequently unintentional, subtle behavioral or verbal exchanges. Racial discrimination exacerbates psychological distress that results from adverse life events, job difficulties, and financial strain. Psychological distress makes it more difficult for parents to have a high-quality and nurturing relationship with their child, thereby decreasing their ability to protect their child from developing a toxic stress response to frightening or threatening childhood experiences (Murry et al. 2001, 921).

### School

A school's climate can contribute to protection against toxic stress. Children are better able to develop the skill of self-regulation in schools and classrooms that are emotionally supportive of and responsive to all students, and where there are positive teacher–student relationships, with teachers maximizing students' feelings of autonomy, influence, competence, and social connectedness (Wang 2009, 242; Kaplan, Gheen, and Midgley 2002, 203–204; Solomon et al. 2000). Intentional schoolwide strategies to create a positive school climate and nurture social-emotional learning can provide children with a favorable environment for the self-regulation of stress hormones.

## Racial and social class differences in the prevalence of toxic stress

Popular discourse frequently conflates lower social class status with low income. This is sociologically naïve. For children, lower social class status is the result of many interacting conditions—not only low family income, but inadequate household wealth, low parental educational levels, low parental occupational status, the intergenerational persistence of these conditions, and membership in a minority group suffering systematic discrimination. Nonetheless, most data sources do not report the full range of these conditions, and sometimes report family income alone.

Beginning in infancy, lower social class children are more likely to have strong, frequent, or prolonged exposure to major traumatic events, the frightening or threatening conditions that induce a stress response (Shonkoff et al. 2012, 240, 242; Halfon et al. 2017, S70–S78).

**Table 1** shows that the lowest-income children are more likely to be exposed to frightening or threatening experiences than other children. A study of children from families with incomes below $20,000 (in 2003, 2004, or 2005, when families were surveyed) found that such children were 18 percent more likely than children from higher-income families to have been exposed to a frightening or threatening experience; 15 percent more likely to have been exposed to two frightening or threatening experiences; and 74 percent more likely to have been exposed to three or more frightening or threatening experiences.

Table 1 also shows that black children were 45 percent more likely than white children to have been exposed to one frightening or threatening experience; 29 percent more likely to have been exposed to two frightening or threatening experiences; and 21 percent more likely to have been exposed to three or more such experiences.[7] This incongruity in part reflects the intersection between race and income: Since children from low-income families are more likely to experience frightening or threatening events, and since African American families fall disproportionately lower on the income distribution than white families,[8] it is more likely that black children will experience such events (Gould 2019; Wilson and Rodgers 2016).

TABLE 1

## Low-income and African American children are more likely to have stressful childhoods

Share of kindergartners exposed to frightening or threatening childhood experiences, by family income and by race

| Number of frightening or threatening experiences: | 0 | 1 | 2 | ≥ 3 |
|---|---|---|---|---|
| By family income | | | | |
| ≥ $20,000 | 50% | 26% | 15% | 10% |
| < $20,000 | 36% | 30% | 17% | 17% |
| % more/less likely | -28% | 18% | 15% | 74% |
| By race | | | | |
| White | 52% | 22% | 14% | 12% |
| Black | 36% | 32% | 18% | 14% |
| % more/less likely | -31% | 45% | 29% | 21% |

**Notes:** Data are based on a study sample of 1,007 children who were born between 1998 and 2000 and were age 5 at the time these data were collected (2003–2005).

**Source:** Manuel E. Jimenez et al., "**Adverse Experiences in Early Childhood and Kindergarten Outcomes**," *Pediatrics* 137, no. 2 (2016), 1–10, https://doi.org/10.1542/peds.2015-1839, **Supplemental Table 6**

# Outcomes for children exposed to chronically stressful conditions

Children exposed to frequent or sustained frightening or threatening events that are likely to induce toxic stress have more depressed academic, behavioral, and health outcomes than other children.

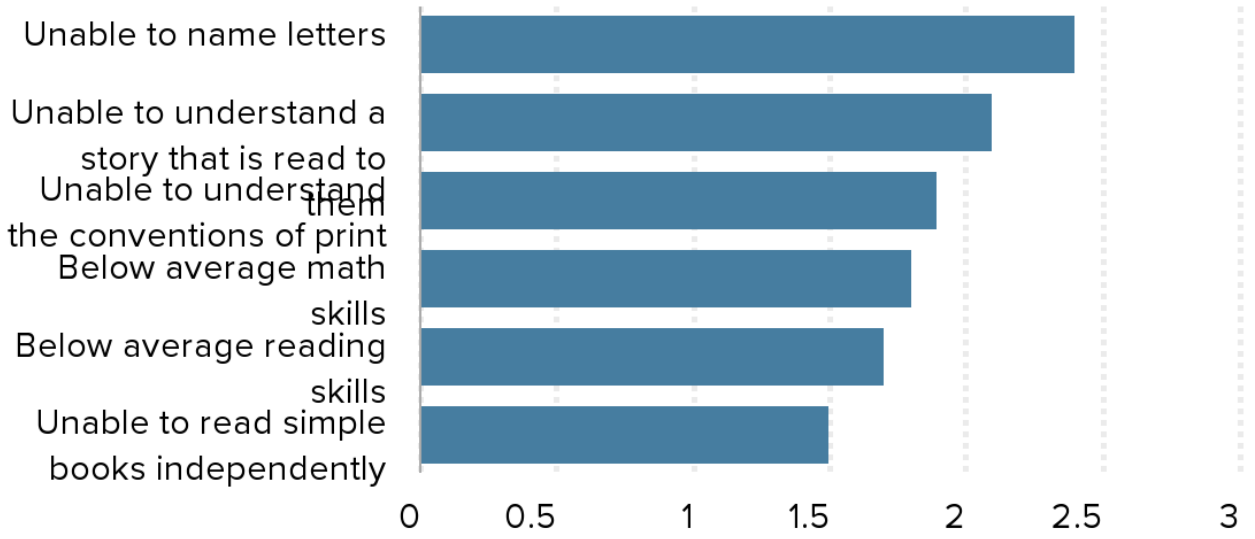
## Association of stress with children's cognitive outcomes

**Figure A** summarizes research comparing the academic outcomes of children exposed to three or more frightening or threatening life experiences with the academic outcomes of children not exposed to such experiences.

FIGURE A

## Children with more stressful life experiences have a greater likelihood of suffering from academic problems

Ratio of the share of kindergartners with three or more frightening or threatening childhood experiences to the share of kindergartners with no such childhood experiences who have the condition




**Notes:** Data are based on a study sample of 1,007 children who were born between 1998 and 2000 and were age 5 at the time these data were collected (2003–2005).

**Source:** Manuel E. Jimenez et al., "**Adverse Experiences in Early Childhood and Kindergarten Outcomes**," *Pediatrics* 137, no. 2 (2016), 1–10, https://doi.org/10.1542/peds.2015-1839, Tables 3 and 4

The share of children in their last month of kindergarten who could not independently read a simple book was nearly 50 percent greater for those who had been exposed to three or more frightening or threatening life experiences than for those who had not been exposed to frightening or threatening life experiences but were otherwise similar. The share of children who had below average reading and math skills was more than 70 percent and nearly 80 percent greater, respectively, for those who had been exposed to frightening or threatening experiences than for those who were otherwise similar but who had not been exposed to any frightening or threatening experiences. Nearly 90 percent more did not understand basic conventions of print. More than twice as many did not understand a story that was read to them, and nearly 2.4 times as many were unable to name the letters of the alphabet (Jimenez et al. 2016, 5).[9]

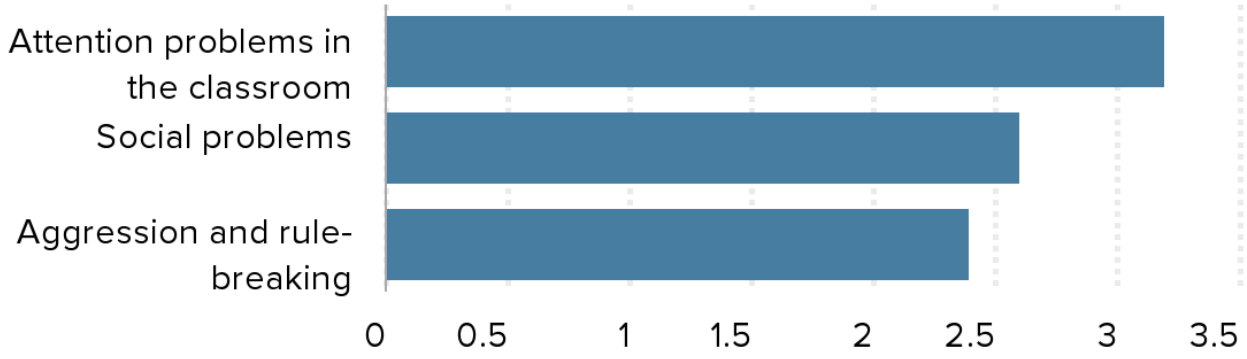
# Association of stress with children's behavioral outcomes

**Figure B** summarizes research comparing the behavioral outcomes of children exposed to frightening or threatening life experiences with the behavioral outcomes of children not exposed to such experiences.

FIGURE B

## Children with more stressful life experiences have a greater likelihood of suffering from behavioral problems

Ratio of the share of kindergartners with three or more frightening or threatening childhood experiences to the share of children with no such childhood experiences who have the condition




**Notes:** Data are based on a study sample of 1,007 children who were born between 1998 and 2000 and were age 5 at the time these data were collected (2003–2005).

**Source:** Manuel E. Jimenez et al., "**Adverse Experiences in Early Childhood and Kindergarten Outcomes**," *Pediatrics* 137, no. 2 (2016), 1–10, https://doi.org/10.1542/peds.2015-1839, Table 5

The share of children in their last month of kindergarten who had social problems (such as acting younger than is appropriate for their age, being clingy, having difficulty getting along with peers, and preferring to play with younger children) was over 150 percent greater for children who had been exposed to frightening or threatening experiences than for those who were otherwise similar but with no

such experiences (Jimenez et al. 2016, 6: Table 5).[10] The share of children who displayed attention problems in the classroom was over 200 percent greater for those who had been exposed to frightening or threatening life experiences than for those who were otherwise similar but with no such experiences (Jimenez et al. 2016, 6).[11] The share of children who were aggressive and broke rules at school was nearly 140 percent greater for those who had been exposed to frightening or threatening life experiences than for those who were otherwise similar but with no such experiences (Jimenez et al. 2016, 6).

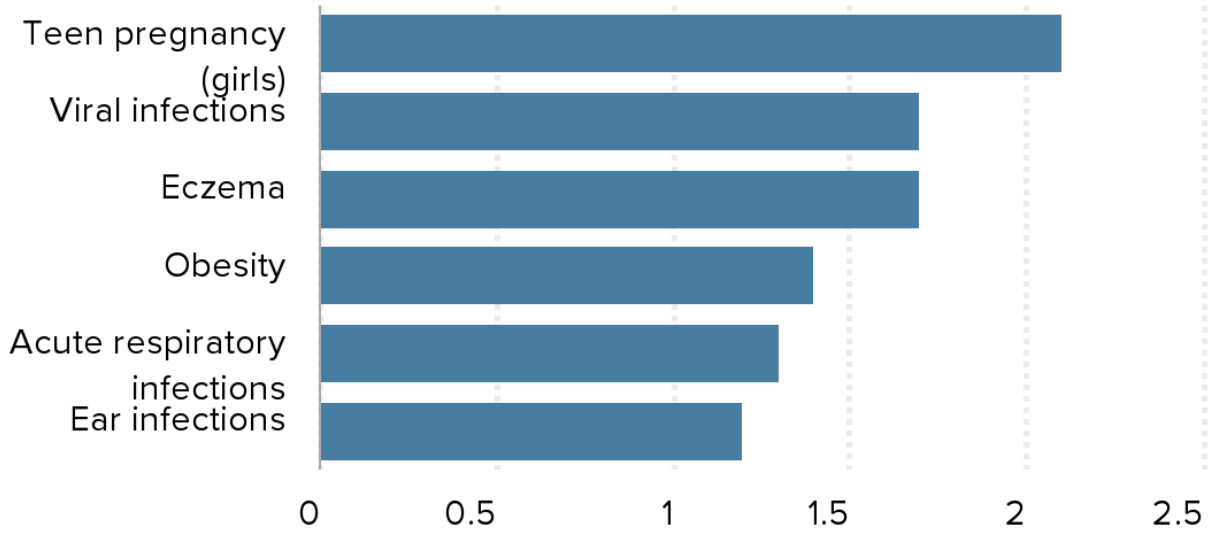
# Association of stress with children's health outcomes

**Figure C** compares specific health vulnerabilities of children exposed to frightening or threatening experiences with specific health conditions of children with no such experiences.

FIGURE C

## Children with more stressful life experiences have a greater likelihood of suffering from health problems

Ratio of the share of children with three or more frightening or threatening childhood experiences to the share of children with no such childhood experiences who have the condition




**Notes:** Different rows in the figure compare children with different numbers of experiences with children with no experiences.

**Sources:** Karlén et al. 2015, Table 2; Burke et al. 2011, 411; Hillis et al. 2004, 323.

The share of children who suffered from ear infections and acute respiratory infections was greater by roughly 20 and 30 percent, respectively, for children who had been exposed to frightening or threatening experiences than for otherwise similar children who had had no such experiences. The share suffering from eczema was 67 percent greater, and the share suffering from viral infections was 73 percent greater.[12] The share of children suffering from obesity was close to 45 percent greater for children who had been exposed to frightening or threatening experiences than for otherwise similar children with no such childhood experiences.[13] The share of teenage girls who became pregnant was more than twice as great for those who had had frightening or threatening experiences than for those who had not and were otherwise similar.[14]

Boys with more pronounced physiological indications of prolonged stress were more likely to develop asthma.[15]

# Plausible causes of disproportionate toxic stress among African American children

A frightening or threatening experience can lead directly to worse outcomes for children. For example, frequent moves and unstable housing can result directly in excessive absences that cause achievement to fall. But—as shown above—in addition to these direct effects, a toxic stress response because of frightening or threatening conditions or events is independently likely to lead to worse outcomes.

Toxic stress may not be the only or even the most powerful reason that achievement declines because of frightening or threatening events. Other factors may contribute to depressed outcomes. Racial discrimination and poverty increase the likelihood that lower social class children will experience such adverse conditions. Residential housing segregation exacerbates the likelihood that children will be exposed to some forms of racial discrimination, poverty, and unstable housing. As far as we know, current research is unable to isolate the independent effects of racial discrimination, poverty, unstable housing, or residential segregation, on toxic stress. But the research findings cited in the previous section of the report suggest that each may be a contributing factor.

Below we examine the potential pathways by which discrimination and housing segregation may lead to toxic stress response in children.

## Discrimination

As attention to police violence has increased over the last few years—in response to incidents in Baltimore, Baton Rouge, Ferguson, and St. Paul (among many others)—there is now a wider spotlight on what African American communities have long known: Interaction between police and residents in African American neighborhoods of concentrated disadvantage can be frequently contentious. Discriminatory criminal justice practices affect bystanding children. Indeed, African American children are more likely to be exposed to police violence, racial profiling by law enforcement officers, and unwarranted attention by police to their caregivers, even if the children themselves are not the victims of these police practices. Such exposure increases the likelihood of children suffering from toxic stress (Boyd, Ellison, and Horn 2016).

Discriminatory practices are not limited to the criminal justice system, but occur across all contexts of life, including schooling. To understand whether nonwhite students are treated differently from their white peers because of their race, researchers must rule out other factors, not merely observe racial differences in treatment. A large body of evidence supports the conclusion that, compared with otherwise similar white peers and for similar infractions, black students are suspended more frequently, for longer periods of time, and receive greater punishment (Nance 2015, 1068; Skiba et al. 2011). An African American student from a low-income family is 10 percent more likely to be suspended than a white student from the same school and grade level for a similar infraction. At 16 percent, the difference in the rate of suspension is even greater between similar black and white students who are not eligible for free or reduced-price lunch (Gordon 2018). Discipline of black children is more frequently complemented by the use of metal detectors, random searches, and/or student referral to law enforcement, none of which are supportive of a safe and protective learning environment (Nance 2015, 1068).

Schools with a higher proportion of African American students tend to criminalize student misbehavior. They have higher rates of suspensions and expulsions, while concomitantly having a lower rate of students enrolled in services covered by the Individuals with Disabilities Education Act and Section 504 of the 1973 Rehabilitation Act. These laws codify certain behaviors as symptoms of medical conditions that interfere with student learning, and require access to services that provide support to students with such symptoms (Ramey 2015, 189, 196). When students who need these services are not enrolled in them, the students are more likely to express symptoms of medical conditions that can mistakenly be viewed as criminal misbehavior by school staff. Failure to receive appropriate services may increase African American children's risk of suffering from toxic stress.

## Housing segregation

Many neighborhoods of concentrated poverty are disproportionately African American (Rothstein 2017). No other racial or ethnic group in the United States has lived in low-income, racially segregated neighborhoods over multiple generations at such a rate (Sharkey 2013).[16] Residential racial segregation, the result of a history of deliberate federal, state, and local policies and practices, tends to dilute factors that can protect children against developing a toxic stress response (Rothstein 2017).

In low-income African American segregated neighborhoods, it is more difficult to access health care, and even more difficult to access high-quality health care (Hahn 2017, 3; Morsy and Rothstein 2015a). It is harder to get around—public transportation is not as accessible or reliable, increasing social isolation and restricting access to employment opportunities beyond the immediate area. These factors are associated with parenting that results in less adult protective behavior (Hahn 2017).

In racially segregated black neighborhoods, men tend to experience high rates of incarceration, which is damaging to the mental and physical health of those incarcerated, their children and other family members, and their neighbors (Morsy and Rothstein 2016; Kramer and Hogue 2009, 182).

Segregation concentrates poverty (and, conversely, wealth, in white neighborhoods) by controlling who has access to resources. It restricts access to basic human needs. Communities tend to adapt to poverty by adopting behaviors that are socially dysfunctional. Joblessness, welfare dependency, substance abuse,

single parenthood, and violence are concentrated in low-income segregated neighborhoods. Social dysfunction increases levels of strain in all adults, including parents (Massey 2004, 17). Concomitantly, parents in low-income segregated neighborhoods have fewer social and financial resources to create buffers against difficult surrounding conditions. Because parents are more likely to be under strain themselves, they are less likely to be able to parent in ways that support their child's self-regulation, safeguarding the child against toxic stress.

# Policy recommendations

Clearly, the most effective way to reduce the greater likelihood of toxic stress in children from racially segregated low-income communities is to eliminate the conditions—discrimination, poverty, and socioeconomic isolation—that support social dysfunction, neighborhood violence, unstable housing, economic insecurity, and excessive rates of incarceration, each of which can stimulate a toxic stress response; in combination, these conditions are even more likely to stimulate such a response. Short of that, social work, educational practice, and health policy can attempt to strengthen the protective factors that can prevent frightening or threatening events from provoking toxic stress in a child.

## Recommendation: Promote protective parenting

Even in chaotic, low-income environments, parents and close adults can help to protect babies and children from developing a toxic stress response by being responsive, nurturing, supportive, and protective (Hillis et al. 2010, 20; CWW 2013, 21; Osher et al. 2018, 17). Support programs such as home visits and/or therapy services by community health workers, nurses, and other health specialists can offset the damaging effects of exposure to frightening or threatening conditions by building the capacity of caregivers to provide children with safe, stable, and nurturing relationships that help to develop children's adaptive and positive coping skills (Garner 2013). Examples of such programs are described below.

### The ChildFIRST initiative: In-home interventions for at-risk families

The ChildFIRST initiative is a program that seems to have succeeded in decreasing the damaging impact of challenging environmental conditions on children through supporting strong child–parent relationships. The program identifies at-risk families and aims to improve the outcomes of children in these families with personalized, in-home, early childhood interventions. Parents and children receive home visits from mental health clinicians who provide them with resources and support to promote a responsive and nurturing relationship between parent and child. Strong parent–child relationships can help to decrease children's learning and behavioral problems, mitigate emotional disturbance in children, and reduce the incidence of abuse and neglect.

The program has shown encouraging results. One evaluation found that the share of children with language delays was smaller by 68 percent for children who received ChildFIRST services than for a demographically similar group of children who received no such services. The share of children who were overactive or defiant, who acted aggressively toward their peers, or who had other behavioral problems was smaller by 57 percent for children who received the ChildFIRST services. The share of

mothers who reported clinical levels of parenting stress was smaller by 52 percent for mothers who received ChildFIRST services (Lowell et al. 2011, 193). This intervention seems to positively impact how a child fares in school by promoting protective parenting that helps children develop self-regulation.

### Child–parent psychotherapy services

Another promising type of publicly provided support is child–parent psychotherapy in which parents and children jointly meet with a clinical psychologist to nurture a strong emotional bond between parent and child. This type of therapy, designed to address children's exposure to traumatic events, helps parents support a child's emotional regulation by responding to their child's stress signals. Sessions can take place at the health care provider's work site or at the child's home. They aim to promote feelings of safety and trust, improve parent and child self-regulation, and support developmentally appropriate goals and activities (Lieberman and Van Horn 2009, 439; Lieberman, Ippen, and Van Horn 2006, 914–915; Renschler et al. 2013, 120; CWW 2013, 10–11).

### The Nurse Family Partnership: Nurturing the infant–maternal bond

The Nurse Family Partnership (NFP) is a program in which registered nurses visit women before and after childbirth, help coordinate physician and hospital visits, and provide guidance on healthy behavior during pregnancy. Nurses continue their visits for two years after delivery, helping mothers understand the infant–maternal bond, read baby and toddler communication signals, and engage in activities that promote babies' and toddlers' healthy development. The nurses also teach mothers self-care strategies, how to plan subsequent pregnancies, and how to seek employment effectively.

Home visits by nurses trained in community medicine or child and maternal health improve parent–child interactions by helping parents provide more sensitive and responsive care (Olds et al. 2002, 493). Visits help decrease children's exposure to child maltreatment, a risk factor for developing a toxic stress response (Eckenrode et al. 2017). By improving children's environment with better maternal health—including fewer subsequent pregnancies, and greater intervals between births—home visits create conditions that protect against children's toxic stress that can result from their exposure to frightening or threatening experiences.

## Recommendation: Prepare trauma-informed school staff

While teachers cannot fix what has been caused by discrimination, poverty, and segregation, there are school-based approaches that can offset some of the effects of toxic stress on children's academic achievement, behavior, and health.

To improve how preschools and schools support children exposed to frightening or threatening experiences, adults in these settings should receive training to help them understand how such experiences affect students' learning and behavior. Because students might act in counterproductive ways in the classroom as a result of exposure to frightening or threatening experiences, adults should be trained to respond appropriately and to support students' self-regulation skills and social and emotional learning. For example, when a child is behaving in a confrontational way, or has withdrawn, adults can

deescalate unproductive behavior by emotionally connecting with the child and removing the child from the overwhelming context before redirecting the child toward schoolwork. Staff should also be trained in how to communicate with caregivers and children who have experienced frightening or threatening situations by, for instance, providing them with confidential ways to communicate with school staff. Adults in schools should support all students (not just those who have experienced frightening or threatening situations) in developing strong relationships with adults and other students. This can include building supportive teams around students of concern.

Such protective approaches should be integrated into the curriculum, daily academic and nonacademic activities, and how adults relate to children (Cole et al. 2013, 18–19; Blodgett and Dorado 2016, 22). A focus on children's social-emotional health can improve school climate and create school and classroom conditions propitious for reducing children's risk of poor social and behavioral outcomes (Blodgett and Dorado 2016, 17; Adelman and Taylor 2006).

To mitigate racially discriminatory practices in schools that can contribute to toxic stress in children, educators should understand the characteristics, prevalence, and effects of racially biased school disciplinary practices. Teachers and administrators should collect and publicly report on school disciplinary data, including demographic information about who is removed from classrooms and from schools, and for how long and on what basis. Reflecting on these data and aggregating them at the district and state levels can help educators challenge bias in schools. To contribute to better learning conditions for children and improve their academic, social, and behavioral outcomes, school staff should be trained to offset school- and classroom-based racial discrimination. Training educators to offset racial discrimination in schools can contribute to better school conditions for children, improving their academic, social, and behavioral outcomes.

To reduce the number of students—especially African American students—who are unjustly removed from schools, and to reduce the incidence of other intentional and unintentional racially discriminatory school discipline practices, civil rights agencies should employ a disparate impact standard. By this standard, they would consider practices that result in race-based intentional or unintentional adverse impact on students, recognizing that school policies and practices may be unlawful if their effects are racially biased, even in the absence of discriminatory intent. Federal policy should create incentives for educators, schools, districts, and states to develop or improve behavior management approaches that mitigate racial bias and focus on keeping children in classrooms and schools (Losen 2011).

Two programs that show promise are described below. Careful replication of such programs with ongoing evaluation is warranted. To have the greatest impact on offsetting the effects of children's toxic stress response to frightening or threatening events and conditions, educators should adopt such approaches in schools of concentrated disadvantage.

## The Chicago School Readiness Project

In the Chicago School Readiness Project, preschool teachers received training in how to support students' self-regulation, including encouraging positive behavior and deescalating conflictual behavior. Educators received the help of a mental health consultant in and out of the classroom to improve the classroom's emotional climate and children's social-emotional skills, to lower children's level of conflict with their peers, and to minimize teacher stress (Raver et al. 2011, 365).

As educators addressed the symptoms of toxic stress and provided an environment that was protective, children in the program were able to sit quietly for longer periods of time, follow directions more attentively, and have better impulse control. By improving students' self-regulation, children in such environments gained skills in vocabulary, letter naming, and math (Ursache, Blair, and Raver 2012, 126; Raver et al. 2011).

### Healthy Environments and Response to Trauma in Schools (San Francisco and Oakland)

The University of California, San Francisco, developed an initiative called Healthy Environments and Response to Trauma in Schools, which operates in partnership with the San Francisco and Oakland school districts. The initiative designs and implements interventions in schools for children who have experienced frightening or threatening events; provides psychotherapy for these children; uses workshops and professional development to build the capacity of parents and employees to help students; and helps develop and implement trauma-sensitive district-level policies, such as universal behavior referral forms, so that schools and districts are able to collect student behavior data and use it to develop prevention strategies. These include having predictable classroom and school routines, establishing school health or wellness centers, and incorporating regular calming practices for students and staff (UCSF 2018a; OUSD 2014).

The program seems to have led to a decrease in serious school disciplinary events, including a 43 percent decrease in events involving physical aggression. Students in participating schools were more engaged in their academic work, with a 27 percent increase in students spending time on academic work and a 36 percent increase in how much time students spent in the classroom. Student attendance increased by 34 percent. Children displayed fewer symptoms of toxic stress: they were better able to function in daily life, had a stronger capacity to identify and modulate their emotions, were better able to relate to others and develop healthy relationships, and were less likely to display symptoms of dissociation, in which children emotionally and mentally detached themselves from their present experiences and reality (Dorado et al. 2016, 171–172; UCSF 2018b).

## Recommendation: Develop supportive health policy

### Routine screening for frightening or threatening experiences

Health care professionals can contribute to preventing and treating the deleterious effects of frightening or threatening experiences. All children should be routinely screened for such experiences. Health care professionals should be trained to understand how frightening or threatening experiences impact children's cognitive, behavioral, and physical health outcomes, and screen and treat children for any resulting complications. To that end, a standardized risk profile for children who have been exposed to frightening or threatening experiences should be developed. This can help pediatric health professionals make more accurate diagnoses and provide clearer treatment options (Harris et al. 2017).

High-quality initiatives in this area exist and warrant careful expansion or replication. Two of these initiatives are described below.

**The National Child Traumatic Stress Network.** Using collaborative groups, liaison teams, and information sharing, the National Child Traumatic Stress Network supports partnering clinics and hospitals to develop and implement approaches to treating children who have experienced frightening or threatening events. The network collects data across partnering clinics and hospitals to conduct research and disseminate information about evidence-based practices, such as cognitive behavioral therapy, trauma assessments, and interventions that develop children's self-regulation (Van der Kolk 2011, A25; NCTSN 2018a, 2018b).

**The Center for Youth Wellness**, in partnership with the Bayview Child Health Center in San Francisco, is a pediatric care center that applies research on how exposure to frightening or threatening experiences impacts children. Children who are screened and found to have been exposed to frightening or threatening experiences are treated with health, mental health, and behavioral interventions. These treatments include child–parent psychotherapy, individual psychiatric care, and biofeedback, which is a way for children and caregivers to identify what the symptoms of a toxic stress response feel like so that they can learn to offset them (Harris et al. 2017; CYW 2018).

## School-based mental health services

High-quality school-based health centers offering mental health services are another protective initiative to support children at risk of developing a toxic stress response. Such centers can be staffed by mental health professionals, including counselors, psychologists, and nurses. School-based mental health center staff can offer psychological support in the form of psychological crisis intervention teams (mental health professionals who act together to help a child cope with a psychiatric emergency), counseling, peer-to-peer modeling of effective coping strategies, and parent education and support. Some programs operate outside of the classroom—in a clinic on school grounds, for instance—while other programs are part of the class curricula and are integrated into in-class teaching. Students can access mental health services to treat psychological issues, including depression, anxiety, anger, conflicts, and family problems.

Evaluations of high-quality centers provide convincing evidence of their effectiveness (Kataoka et al 2012; Rones and Hoagwood 2000). Adolescents in schools with a mental health center are up to 10 times more likely to initiate a mental health visit than otherwise similar students with no such in-school resource (AAP 2004, 1841; Kaplan et al. 1998, 29). School-based mental health centers are especially important for children in disadvantaged schools who tend to need such services more than students from higher-income families, and concomitantly have more limited access to professional mental health support than their higher-income peers (Bains and Diallo 2016, 15).

School-based mental health services are related to improvement in students' grades (Suldo et al. 2014). Students who use school-based mental health services tend to start out with a lower grade point average than those who never access the services. After students begin using the services, their GPAs increase steadily over time (Walker et al. 2010, 255).

## Medical–legal partnerships

Another model to offset the causes and consequences of pediatric toxic stress is medical–legal partnerships in which physicians and lawyers collaborate to provide underserved children with clinical pediatric services and legal advocacy. In these partnerships, medical health practitioners are trained to

identify issues that can be addressed by legal aid attorneys.

Medical–legal partnerships can help families mitigate the consequences of frightening or threatening experiences or prevent them altogether. For instance, to address learning disabilities, in some cases perhaps a result of toxic stress, medical–legal partnerships can make it easier for families to request a school evaluation or access to special education services for their child.

To stabilize families' housing, medical–legal partnerships can help families access housing benefits, such as subsidies or access to housing mobility programs, that they would otherwise be denied or unable to claim. To address poor housing quality and protect tenants from lease agreement violations, medical–legal teams can help families escrow rent—paying their rent to an escrow account with the local court instead of to the landlord—when housing quality violates the landlord's health and safety obligations. This can help motivate a landlord, legally and financially, to undertake required repairs and maintenance, or adhere to the terms of a lease agreement (Klein et al. 2013; Henize et al. 2015). When families are evicted or threatened with eviction, such teams can provide legal assistance when those evictions violate tenant rights, they can help families access temporary housing, and they can connect families with services that address the mental and emotional challenges associated with evictions. It is notable that poor, black, single mothers are most likely to be evicted, among all groups of tenants. In fact, even after accounting for other factors, being black and having children are, on their own, risk factors for eviction (Desmond et al. 2013; Desmond 2015, 1).

Finally, medical–legal teams can help identify and address problems with denial or delay of other public benefits (in addition to housing benefits) to which families might be entitled, including difficulties obtaining medical services and access to Medicaid benefits for children.

Two models, described below, offer successful examples of how such partnerships work.

**The Peninsula Family Advocacy Program (FAP).** At FAP, located in Palo Alto, California, the staff include an attorney, a project coordinator, and a medical director. FAP partners with local law firms to offer pro bono services for cases in which legal aid workers do not have sufficient expertise to help the people involved (Weintraub et al. 2010).

**The Health and Legal Partnership (HeLP).** HeLP is based at Cincinnati Children's Hospital. HeLP's model is similar to FAP's; they have one full-time attorney, one half-time attorney, and one full-time paralegal on site. To enable better identification of problems that need medical and legal advocacy solutions, residents at the clinic where HeLP is based learn from legal advocates and community partners about the complex issues that low-income children face (Klein et al. 2013, 1066–1067).

# Conclusion

In any classroom, in any school, in any neighborhood of concentrated disadvantage, it is likely that a disproportionately high number of students suffer from the effects of toxic stress. It is more demanding for an educator to teach a single child with such symptoms, and when children suffering from the effects of toxic stress are concentrated in one classroom, or in one school, the effect is compounded, making it more likely that the achievement of all children in that classroom or school will be depressed.

As health care professionals have started to turn their attention to this important problem, so should educators and education policymakers. Short of changing the conditions in which low-income children live, high-quality support for parents and parents-to-be should be accessible. Programs to offset the effects of toxic stress should be deployed in schools of concentrated disadvantage, including programs to effectively support educators. Policymakers should improve public awareness of this insidious morbidity.

# About the authors

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# Endnotes

1. Toxic stress in children can also cause physiological disruptions that lead to depressed adult health outcomes later in life. These include hypertension, cardiovascular disease, viral hepatitis, liver cancer, and chronic obstructive pulmonary disease (Shonkoff 2012). However, adult outcomes as a result of childhood toxic stress are beyond the scope of this report, and we do not address them here.

2. Research in this area sometimes describes the frightening or threatening events that can often result in toxic stress as "adverse childhood experiences" (ACEs). However, for the purpose of this report we prefer "frightening or threatening experiences." While "ACEs" are well understood by many professionals in the field as a defined set of experiences (e.g., see the ACE module questionnaire at CDC 2016), the term ACE is not sufficiently descriptive for policymakers. Many experiences of a healthy childhood can be "adverse," whether it is losing a soccer match or having a disagreement with a sibling or friend. Excessive concern with experiences that are simply "adverse" runs the danger of medicalization of such normal, character-building experiences. There is no clean line that can

distinguish such normal experiences from those that can lead to toxic stress. Because children differ in many unobservable ways, what is frightening to some children may be simply challenging to others, even when the children have similar social and economic circumstances. So, while a term like "frightening or threatening" runs the risk of underestimating the possibility of toxic stress response, "adverse childhood experience" runs the risk of overestimating it. Inasmuch as concern with toxic stress has only recently become widespread among medical professionals, and has barely penetrated educational practice, we hope that this concern will grow prudently and gradually and be restricted, in the beginning, to the more clear-cut cases.

3. For psychological, physical, and sexual abuse, see Mersky et al. 2009, 81; Coulton et al. 2007, 1134; Saul et al. 2014, 260; and Jimenez et al. 2016, 2. For having a family member incarcerated, see Morsy and Rothstein 2016; Jimenez et al. 2016, 2; and Slopen et al. 2016, 48, 50: Table 1. For witnessing domestic violence, see Jimenez et al. 2016, 2; and Slopen et al. 2016, 48, 50: Table 1. For neglect, see Mersky et al. 2009; Coulton et al. 2007, 1134; Saul et al. 2014, 260; and Jimenez et al. 2016, 2. For financial hardship, see Slopen et al. 2016, 48, 50: Table 1. For exposure to neighborhood violence, see Slopen et al. 2016, 48, 50: Table 1; and Evans and Kim 2013. For discrimination, see Slopen et al. 2016, 48, 50: Table 1. For parental divorce or separation, see Slopen et al. 2016, 48, 50: Table 1. For placement in foster care or kinship care, see Zlotnick, Tam, and Soman 2012. For property wrecked or damaged because of a fire or burglary, see Attar, Guerra, and Tolan 1994, 395: Table 3. For having a family member become seriously ill or injured, be hospitalized, or die, see Attar, Guerra, and Tolan 1994, 395: Table 3.

4. Age may also be a factor in whether frightening or threatening events precipitate a toxic stress response. This is because, at certain developmental stages of childhood, the brain is more sensitive to changes in external environmental conditions, such as frightening or threatening experiences. See Immordino-Yang, Darling-Hammond, and Krone 2018.

5. Although more whites than blacks are incarcerated (in absolute numbers, not as a share of their respective racial populations), incarcerated whites do not originate from single neighborhoods to the extent that incarcerated blacks do, in part because white poverty is not as concentrated as black poverty—whites experiencing poverty tend to be more dispersed throughout the white population (see "Consequences for Communities" in NRC 2014, beginning on page 283). By age 14, approximately 25 percent of African American children will have had a parent, usually a father, incarcerated for some period of time. The comparable share for white children is 4 percent (see Morsy and Rothstein 2016).

6. For life transitions, see Attar, Guerra, and Tolan 1994, 395: Table 3. For home crowding, see Evans 2004, 86.

7. These data come from a study with a sample size of over 1,000 children and their families (Jimenez et al. 2016). Another study with a larger sample (close to 85,000 children) finds similar results. It concludes that black children were more likely to have been exposed to frightening or threatening childhood experiences than white children. Black children were 27 percent more likely to have been exposed to one frightening or threatening experience than white children, and were 51 percent more likely to have been exposed to two or more frightening or threatening experiences. They were one-third less likely than white children to have been exposed to no such childhood experiences (Slopen et al. 2016, Table 1, on page 50). In addition to the list of frightening or threatening childhood experiences included in the Jimenez et al. study (physical abuse, sexual abuse, psychological abuse, neglect, living with someone with substance abuse problems or mental illness, seeing a caregiver treated violently, or having a parent incarcerated), the Slopen et al. study also includes children's exposure to neighborhood violence, racial discrimination, financial hardship, and parental divorce or separation.

8. In 2005, the last year for which study data were collected, 12 percent of white families had incomes below $20,000, compared with 29 percent of black families (U.S. Census Bureau CPS-ASEC 2006). See also Wilson and Rogers 2016.

**9.** The study data do not allow us to determine whether the poorer outcomes resulted from exposure to frightening or threatening experiences, or from other conditions connected with low socioeconomic status. However, in this study, comparisons were made across children who were similar in age, gender, race, maternal education, parent relationship status, and household income—so there is a suggestion of causality. Children who had been exposed to three or more frightening or threatening experiences were compared with children who had had no frightening or threatening life experiences (Jimenez et al. 2016, 5).

**10.** See note 8, above.

**11.** Related to attention problems, another study found that children who had been exposed to three, or four or more, frightening or threatening experiences, respectively, have 1.8 and 2.7 times the odds of being diagnosed with attention deficit hyperactivity disorder (ADHD) by age 9 than children who had been exposed to no such experiences. Children in this study were similar in mother's race, education, marital status, number of children, prenatal substance use, age at her child's birth, and whether the focal child was the mother's first birth. The children were of the same gender and of similar birth weight. The study also controlled for family income, the number of other children and adults living in the home, and whether the focal child's grandmother was living in the household. Children who had been exposed to three frightening or threatening experiences and children who had had four or more such experiences were separately compared with children who had had no such experiences (Hunt, Slack, and Berger 2017, 398, and Table 2 on pages 397–398).

**12.** For ear infections, acute respiratory infections, eczema, and viral infections, see Karlén et al. 2015, e1454: Table 2. Children in this study were Swedish, and of similar age (10 years) and birth weight. They had been exposed to three or more frightening or threatening experiences. They were compared with similar children who had no frightening or threatening experiences (Karlén et al. 2015, e1454).

**13.** For obesity, see Burke et al. 2011, 411. Children in this study were under 21 years old and low-income, and similar in age, gender, and ethnicity. They had been exposed to four or more frightening or threatening experiences. They were compared with children of the same gender and similar in age and ethnicity who had had no frightening or threatening experiences. The measure of obesity was taken from a two-year retrospective review of children's medical charts (Burke et al. 2011, 411).

**14.** For teen pregnancy, see Hillis et al. 2004, 323: Table 4. This study compared girls who had been exposed to three or more frightening or threatening experiences with girls of the same race, age, and education level who had had no frightening or threatening experiences. Pregnancies were considered "teenage" if they occurred between the ages of 11 and 19 (Hillis et al. 2004, 323).

**15.** See Bahreinian et al. 2013, 146. Researchers measured stress-related physiological dysregulation, or "weathering," using a set of biomarkers: fasting glucose, total cholesterol, high-density lipoprotein cholesterol, dehydroepiandrosterone sulfate (a naturally occurring steroid), cortisol, systolic and diastolic blood pressure, and waist-to-hip ratio. Cumulatively, these biomarkers indicate a person's lifelong level of exposure to stress-inducing conditions, and the aggregate measure is called the "allostatic load." Generally, people with higher allostatic loads have experienced more stressful events and conditions throughout their lives than those with lower allostatic loads. The study compared boys who had high allostatic scores (scoring in the highest quartile for three or more stress-related biomarkers) with boys who had low allostatic scores (scoring in the highest quartile for two or fewer stress-related biomarkers). The study reports that after accounting for the usual predictors of asthma—including boys' age and ethnicity, whether boys are allergically hypersensitive or allergic, and whether their parents have or have had asthma—boys with high biomarkers of stress are four times as likely to have asthma as their counterparts with low biomarkers of stress (Bahreinian et al. 2013, 144).

**16.** There are neighborhoods of concentrated disadvantage that are primarily Hispanic. However, on average, Hispanic Americans have greater social mobility than African Americans. Hispanic Americans suffer from contemporary discrimination, and yet the consequences of historic discrimination against African Americans—

including slavery and legally ratified race-based segregation, compounded with contemporary discrimination—has resulted in extremely low social mobility for African Americans, and high levels of neighborhood deterioration and poverty concentration.

# References


Adelman, Howard S., and Linda Taylor. 2006. "**Mental Health in Schools and Public Health**." *Public Health Reports* 121, no. 3: 294–298.

American Academy of Pediatrics (AAP). 2004. "**Policy Statement: School-Based Mental Health Services**." *Pediatrics* 113, no. 6: 1839–1845.

Attar, Beth K., Nancy G. Guerra, and Patrick H. Tolan. 1994. "**Neighborhood Disadvantage, Stressful Life Events and Adjustments in Urban Elementary-School Children**." *Journal of Clinical Child Psychology* 23, no. 4: 391–400.

Bahreinian, Salma, Geoff D.C. Ball, Timothy K. Vander Leek, Ian Colman, Brian J. McNeil, Allan B. Becker, and Anita L. Kozyrskyj. 2013. "**Allostatic Load Biomarkers and Asthma in Adolescents**." *American Journal of Respiratory and Critical Care Medicine* 187, no. 2: 144–152. **https://doi.org/10.1164/rccm.201201-0025OC.**

Bains, Ranbir Mangat, and Ana F. Diallo. 2016. "**Mental Health Services in School-Based Health Centers: Systematic Review**." *Journal of School Nursing* 32, no. 1: 8–19.

Blodgett, Christopher, and Joyce Dorado. 2016. "**A Selected Review of Trauma-Informed School Practice and Alignment with Educational Practice**." Unpublished manuscript.

Boyd, Rhea W., Angela M. Ellison, and Ivor B. Horn. 2016. "**Police, Equity, and Child Health**." *Pediatrics* 137, no. 3: e20152711, 2.

Burke, Nadine J., Julia L. Hellman, Brandon G. Scott, Carl F. Weems, and Victor G. Carrion. 2011. "**The Impact of Adverse Childhood Experiences on an Urban Pediatric Population**." *Child Abuse & Neglect* 35, no. 6: 408–413.

Center for Youth Wellness (CYW). 2018. "**Advancing Clinical Practice: Applying Universal ACEs Screening in the Pediatric Clinic**" (CYW website homepage). October 2018.

Centers for Disease Control (CDC). 2016. "**About Behavioral Risk Factor Surveillance System ACE Data**" (web page). Last reviewed April 1, 2016.

Child Welfare Watch (CWW). 2013. ***Baby Steps: Poverty, Chronic Stress, and New York's Youngest Children***. *Child Welfare Watch* 23 (Fall).

Cole, Susan F., Anne Eisner, Michael Gregory, and Joel Ristuccia. 2013. ***Helping Traumatized Children Learn, vol. 2: Creating and Advocating for Trauma-Sensitive Schools***. Cambridge, Mass.: Trauma and Learning Policy Initiative.

Coleman, James Samuel, Ernest Q. Campbell, Carol J. Hobson, James McPartland, Alexander M. Mood, Frederic D. Weinfeld, and Robert L. York. 1966. ***Equality of Educational Opportunity***. Washington, D.C.: U.S. Dept. of Health, Education, and Welfare, Office of Education.

Coulton, Claudia J., David S. Crampton, Molly Irwin, James C. Spilsbury, and Jill E. Korbin. 2007. "**How Neighborhoods Influence Child Maltreatment: A Review of the Literature and Alternative Pathways**." *Child Abuse & Neglect* 31, no. 11: 1117–1142.

Desmond, Matthew. 2015. ***Unaffordable America: Poverty, Housing, and Eviction***. Institute for Research on Poverty, University of Wisconsin–Madison: *Fast Focus*, no. 22: 1–6.

Desmond, Matthew, Weihua An, Richelle Winkler, and Thomas Ferriss. 2013. "**Evicting Children**." *Social Forces* 92, no. 1: 303–327.

Dhabhar, Firdaus S. 2009. "A Hassle a Day May Keep the Pathogens Away: The Fight-or-Flight Stress Response and the Augmentation of Immune Function." *Integrative and Comparative Biology* 49, no. 3: 215–236.

Dorado, Joyce S., Miriam Martinez, Laura E. McArthur, and Talia Leibovitz. 2016. "**Healthy Environments and Response to Trauma in Schools (HEARTS): A Whole-School, Multi-Level, Prevention and Intervention Program for Creating Trauma-Informed, Safe and Supportive Schools**." *School Mental Health* 8, no. 1: 163–176.

Eckenrode, John, Mary I. Campa, Pamela A. Morris, Charles R. Henderson Jr., Kerry E. Bolger, Harriet Kitzman, and David L. Olds. 2017. "**The Prevention of Child Maltreatment Through the Nurse Family Partnership Program: Mediating Effects in a Long-Term Follow-Up Study**." *Child Maltreatment* 22, no. 2: 92–99.

Evans, Gary W. 2001. "Environmental Stress and Health." In *Handbook of Health Psychology*, edited by A. Baum, T. Revenson, and J.E. Singer, 365–385. Mahwah, N.J.: Erlbaum.

Evans, Gary W. 2004. "The Environment of Childhood Poverty." *American Psychologist* 59, no. 2: 77–92.

Evans, Gary W., and Pilyoung Kim. 2013. "**Childhood Poverty, Chronic Stress, Self-Regulation, and Coping**." *Child Development Perspectives* 7, no. 1: 43–48.

Garner, Andrew. 2013. "**Home Visiting and the Biology of Toxic Stress: Opportunities to Address Early Childhood Adversity**." *Pediatrics* 132, Supplement 2: S65–S73.

Gershoff, Elizabeth T. 2016. "**Should Parents' Physical Punishment of Children Be Considered a Source of Toxic Stress That Affects Brain Development?**" *Family Relations* 65, no. 1: 151–162.

Gershoff, Elizabeth T., C. Cybele Raver, J. Lawrence Aber, and Mary Clare Lennon. 2007. "**Income Is Not Enough: Incorporating Material Hardship into Models of Income Associations with Parenting and Child Development**." *Child Development* 78, no. 1: 70–95.

Gordon, Nora. 2018. ***Disproportionality in Student Discipline: Connecting Policy to Research***. Brookings Institution, January 2018.

Gould, Elise. 2019. ***State of Working America Wages 2018.*** Economic Policy Institute, February 2019.

Hahn, Robert A. 2017. "**Racial and Ethnic Residential Segregation as a Root Social Determinant of Public Health and Health Inequity: A Persistent Public Health Challenge in the United States**." *Poverty and Race Research Action Council* 26, no. 2: 3–4, 10–12.

Halfon, Neal, Kandyce Larson, John Son, Michael Lu, and Christina Bethell. 2017. "**Income Inequality and the Differential Effect of Adverse Childhood Experiences in U.S. Children**." *Academic Pediatrics* 17, no. 7: S70–S78.

Harris, Nadine Burke, Sara Silvério Marques, Sara Oh, Monica Bucci, and Mark Cloutier. 2017. "**Prevent, Screen, Heal: Collective Action to Fight the Toxic Effects of Early Life Adversity**." *Academic Pediatrics* 17, no. 7 Supplement: S14–S15.

Harvard Health Publishing (HHP). 2018. "**Understanding the Stress Response: Chronic Activation of This Survival Mechanism Impairs Health**" (online article). Harvard Health Publishing website. Article last updated May 1, 2018.

Henize, Adrienne W., Andrew F. Beck, Melissa D. Klein, Monica Adams, and Robert S. Kahn. 2015. "**A Road Map to Address the Social Determinants of Health Through Community Collaboration**." *Pediatrics* 136, no. 4: e993–e1001.

Hillis, Susan D., Robert F. Anda, Shanta R. Dube, Vincent J. Felitti, Polly A. Marchbanks, Maurizio Macaluso, and James S. Marks. 2010. "**The Protective Effect of Family Strengths in Childhood Against Adolescent Pregnancy and Its Long-Term Psychosocial Consequences**." *Permanente Journal* 14, no. 3: 18–27. **https://doi.org/10.7812/TPP/10-028**.

Hillis, Susan D., Robert F. Anda, Shanta R. Dube, Vincent J. Felitti, Polly A. Marchbanks, and James S. Marks. 2004. "**The Association Between Adverse Childhood Experiences and Adolescent Pregnancy, Long-Term Psychosocial Consequences, and Fetal Death**." *Pediatrics* 113, no. 2: 320–327.

Hunt, Tenah K.A., Kristen S. Slack, and Lawrence M. Berger. 2017. "**Adverse Childhood Experiences and Behavioral Problems in Middle Childhood**." *Child Abuse & Neglect* 67: 391–402. **http://dx.doi.org/10.1016/j.chiabu.2016.11.005**.

Immordino-Yang, Mary Helen, Linda Darling-Hammond, and Christina Krone. 2018. ***The Brain Basis for Integrated Social, Emotional, and Academic Development: How Emotions and Social Relationships Drive Learning***. Aspen Institute, National Commission on Social, Emotional, and Academic Learning, September 2018.

Jimenez, Manuel E., Wade Roy, Yong Lin, Lesley M. Morrow, and Nancy E. Reichman. 2016. "**Adverse Experiences in Early Childhood and Kindergarten Outcomes**." *Pediatrics* 137, no. 2: 1–10. **https://doi.org/10.1542/peds.2015-1839**.

Kaplan, Avi, Margaret Gheen, and Carol Midgley. 2002. "**Classroom Goal Structure and Student Disruptive Behaviour**." *British Journal of Educational Psychology* 72, no. 2: 191–211.

Kaplan, David W., B. Ned Calonge, Bruce P. Guernsey, and Maureen B. Hanrahan. 1998. "**Managed Care and School-Based Health Centers: Use of Health Services**." *Archives of Pediatrics & Adolescent Medicine* 152, no. 1: 25–33.

Karlén, Jerker, Johnny Ludvigsson, Max Hedmark, Åshild Faresjö, Elvar Theodorsson, and Tomas Faresjö. 2015. "**Early Psychosocial Exposures, Hair Cortisol Levels, and Disease Risk**." *Pediatrics* 135, no. 6: e1450–e1457.

Kataoka, Sheryl, Audra K. Langley, Marleen Wong, Shilpa Baweja, and Bradley D. Stein. 2012. "**Responding to Students with Posttraumatic Stress Disorder in Schools**." *Child and Adolescent Psychiatric Clinics of North America* 21, no. 1: 119–133.

Kim, Pilyoung, Gary W. Evans, Michael Angstadt, S. Shaun Ho, Chandra S. Sripada, James E. Swain, Israel Liberzon, and K. Luan Phan. 2013. "**Effects of Childhood Poverty and Chronic Stress on Emotion Regulatory Brain Function in Adulthood**." *Proceedings of the National Academy of Sciences of the United States of America* 110, no. 46: 18442–19447.

Klein, Melissa D., Andrew F. Beck, Adrienne W. Henize, Donita S. Parrish, Elaine E. Fink, and Robert S. Kahn. 2013. "**Doctors and Lawyers Collaborating to HeLP Children—Outcomes from a Successful Partnership Between Professions**." *Journal of Health Care for the Poor and Underserved* 24, no. 3: 1063–1073.

Kleinhans, Reinout, and Gideon Bolt. 2014. "**More Than Just Fear: On the Intricate Interplay Between Perceived Neighborhood Disorder, Collective Efficacy, and Action**." *Journal of Urban Affairs* 36, no. 3: 420–446.

Kramer, Michael R., and Carol R. Hogue. 2009. "**Is Segregation Bad for Your Health?**" *Epidemiologic Reviews* 31, no. 1: 178–194.

Lieberman, Alicia F., Chandra Ghosh Ippen, and Patricia Van Horn. 2006. "**Child–Parent Psychotherapy: 6-Month Follow-Up of a Randomized Controlled Trial**." *Journal of the American Academy of Child & Adolescent Psychiatry* 45, no. 8: 913–918.

Lieberman, Alicia F., and Patricia Van Horn. 2009. "Child–Parent Psychotherapy: A Developmental Approach to Mental Health Treatment in Infancy and Early Childhood." In *Handbook of Infant Mental Health, 3rd edition*, edited by Charles H. Zeanah, 439–449. New York: Guilford Press.

Lindsay, Colin. 2010. "**In a Lonely Place? Social Networks, Job Seeking and the Experience of Long-Term Unemployment**." *Social Policy and Society* 9, no. 1: 25–37. **https://doi.org/10.1017/S1474746409990170**.

Losen, Daniel J. 2011. ***Discipline Policies, Successful Schools, and Racial Justice***. National Education Policy Center, October 2011.

Lowell, Darcy I., Alice S. Carter, Leandra Godoy, Belinda Paulicin, Margaret J. Briggs-Gowan. 2011. "**A Randomized Controlled Trial of Child FIRST: A Comprehensive Home-Based Intervention Translating Research into Early Childhood Practice**." *Child Development* 82, no. 1: 193–208.

Massey, Douglas S. 2004. "**Segregation and Stratification: A Biosocial Perspective**." *Du Bois Review: Social Science Research on Race* 1, no. 1: 7–25. **https://doi.org/10.1017/S1742058X04040032**.

Mersky, Joshua P., Lawrence M. Berger, Arthur J. Reynolds, and Andrea N. Gromoske. 2009. "**Risk Factors for Child and Adolescent Maltreatment: A Longitudinal Investigation of a Cohort of Inner-City Youth**." *Child Maltreatment* 14, no. 1: 73–88.

Morsy, Leila, and Richard Rothstein. 2015a. ***Five Social Disadvantages That Depress Student Performance: Why Schools Alone Can't Close Achievement Gaps***. Economic Policy Institute, June 2015.

Morsy, Leila, and Richard Rothstein. 2015b. ***Parents' Non-Standard Work Schedules Make Adequate Childrearing Difficult: Reforming Labor Market Practices Can Improve Children's Cognitive and Behavioral Outcomes***. Economic Policy Institute Issue Brief no. 400, August 2015.

Morsy, Leila, and Richard Rothstein. 2016. ***Mass Incarceration and Children's Outcomes: Criminal Justice Policy Is Education Policy***. Economic Policy Institute, December 2016.

Murry, Velma McBride, P. Adama Brown, Gene H. Brody, Carolyn E. Cutrona, Ronald L. Simons. 2001. "**Racial Discrimination as a Moderator of the Links Among Stress, Maternal Psychological Functioning, and Family Relationships**." *Journal of Marriage and Family* 63, no. 4: 915–926.

Nance, Jason P. 2015. "**Over-Disciplining Students, Racial Bias, and the School-to-Prison Pipeline**." *University of Richmond Law Review* 50: 1063–1074.

National Child Traumatic Stress Network (NCTSN). 2018a. "**Interventions**" (series of fact sheets). NCTSN website, October 2018.

National Child Traumatic Stress Network (NCTSN). 2018b. "**Trauma-Informed Care**" (collection of online resources). NCTSN website, October 2018.

National Research Council (NRC). 2014. *The Growth of Incarceration in the United States: Exploring Causes and Consequences*. Washington, D.C.: National Academies Press. **https://doi.org/10.17226/18613**.

Oakland Unified School District (OUSD). 2014. "**Transforming Culture and Climate in Oakland Schools: School Security Officer Professional Development**" (slide presentation).

Odgers, Candice L., and Sara R. Jaffee. 2013. "**Routine Versus Catastrophic Influences on the Developing Child**." *Annual Review of Public Health* 34: 29-48.

Olds, David L., JoAnn Robinson, Ruth O'Brien, Dennis W. Luckey, Lisa M. Pettitt, Charles R. Henderson Jr., Rosanna K. Ng, Karen L. Sheff, Jon Korfmacher, Susan Hiatt, Ayelet Talmi. 2002. "**Home Visiting by Paraprofessionals and by Nurses: A Randomized, Controlled Trial**." *Pediatrics* 110, no. 3: 486–496.

Osher, David, Pamela Cantor, Juliette Berg, Lily Steyer, and Todd Rose. 2018. "**Drivers of Human Development: How Relationships and Context Shape Learning and Development**" (online article). *Applied Developmental Science*.

Pager, Devah. 2003. "**The Mark of a Criminal Record**." *American Journal of Sociology* 108, no. 5: 937–975.

Paul, Karsten I., and Klaus Moser. 2009. "**Unemployment Impairs Mental Health: Meta-analyses**." *Journal of Vocational Behavior* 74, no. 3: 264–282.

Ramey, David M. 2015. "**The Social Structure of Criminalized and Medicalized School Discipline**." *Sociology of Education* 88, no. 3: 181–201.

Raver, C. Cybele, Stephanie M. Jones, Christine Li-Grining, Fuhua Zhai, Kristen Bub, Emily Pressler. 2011. "**CSRP's Impact on Low-Income Preschoolers' Preacademic Skills: Self-Regulation as a Mediating Mechanism**." *Child Development* 82, no. 1: 362–378.

Renschler, Todd S., Alicia F. Lieberman, Miriam Hernandez Dimmler, and Nadine Burke Harris. 2013. "**Trauma-Focused Child–Parent Psychotherapy in a Community Pediatric Clinic: A Cross-Disciplinary Collaboration**." In *Attachment-Based Clinical Work with Children and Adolescents*, edited by Joanna Ellen Bettmann and Donna Demetri Friedman, 115–139. New York: Springer.

Roelfs, David J., Eran Shor, Karina W. Davidson, and Joseph E. Schwartz. 2011. "**Losing Life and Livelihood: A Systematic Review and Meta-analysis of Unemployment and All-Cause Mortality**." *Social Science & Medicine* 72, no. 6: 840–854.

Rones, Michelle, and Kimberly Hoagwood. 2000. "**School-Based Mental Health Services: A Research Review**." *Clinical Child and Family Psychology Review* 3, no. 4: 223–241. **https://doi.org/10.1023/A:1026425104386**.

Rothstein, Richard. 2004. *Class and Schools: Using Social, Economic, and Educational Reform to Close the Black–White Achievement Gap*. New York: Teachers College Press.

Rothstein, Richard. 2017. *The Color of Law: How Our Government Segregated America*. New York: W.W. Norton.

Sampson, Robert J. 2009. "**Disparity and Diversity in the Contemporary City: Social (Dis)order Revisited**." *British Journal of Sociology* 60, no. 1: 1–31.

Sampson, Robert J., and Charles Loeffler. 2010. "**Punishment's Place: The Local Concentration of Mass Incarceration**." *Daedalus 139*, no. 3: 20–31.

Sampson, Robert J., Stephen W. Raudenbush, and Felton Earls. 1997. "**Neighborhoods and Violent Crime: A Multilevel Study of Collective Efficacy**." *Science* 277, no. 5328: 918–924.

Saul, Janet, Linda A. Valle, James A. Mercy, Shairi Turner, Rachel Kaufmann, and Tanja Popovic. 2014. "**CDC Grand Rounds: Creating a Healthier Future Through Prevention of Child Maltreatment**." *Morbidity and Mortality Weekly Report* 63, no. 12: 260–263.

Sharkey, Patrick. 2013. *Stuck in Place: Urban Neighborhoods and the End of Progress Toward Racial Equality*. Chicago: Univ. of Chicago Press.

Shonkoff, Jack P. 2012. "**Leveraging the Biology of Adversity to Address the Roots of Disparities in Health and Development**." *Proceedings of the National Academy of Sciences* 109, Supplement 2: 17302–17307.

Shonkoff, Jack P.; Andrew S. Garner; the Committee on Psychosocial Aspects of Child and Family Health, Committee on Early Childhood, Adoption, and Dependent Care, and Section on Developmental and Behavioral Pediatrics; Benjamin S. Siegel; Mary I. Dobbins; Marian F. Earls; Andrew S. Garner; Laura McGuinn; John Pascoe; and David L. Wood. 2012. "The Lifelong Effects of Early Childhood Adversity and Toxic Stress." *Pediatrics* 129, no. 1: 232–246. **https://doi.org/10.1542/peds.2011-2663**.

Skiba, Russell J., Robert H. Horner, Choong-Geun Chung, M. Karega Rausch, Seth L. May, and Tary Tobin. 2011. "**Race Is Not Neutral: A National Investigation of African American and Latino Disproportionality in School Discipline**." *School Psychology Review* 40, no 1: 85–107.

Slopen, Natalie, Jack P. Shonkoff, Michelle A. Albert, Hirokazu Yoshikawa, Aryana Jacobs, Rebecca Stoltz, and David R. Williams. 2016. "**Racial Disparities in Child Adversity in the U.S.: Interactions with Family Immigration History and Income**." *American Journal of Preventive Medicine* 50, no. 1: 47–56.

Solomon, Daniel, Victor Battistich, Marilyn Watson, Eric Schaps, and Catherine Lewis. 2000. "**A Six-District Study of Educational Change: Direct and Mediated Effects of the Child Development Project**." *Social Psychology of Education* 4, no. 1: 3–51.

Suldo, Shannon M., Matthew J. Gormley, George J. DuPaul, and Dawn Anderson-Butcher. 2014. "**The Impact of School Mental Health on Student and School-Level Academic Outcomes: Current Status of the Research and Future Directions**." *School Mental Health* 6, no. 2: 84–98.

University of California, San Francisco (UCSF). 2018a. "**UCSF HEARTS Program Overview**" (web page). UCSF HEARTS website, October 2018.

University of California, San Francisco (UCSF). 2018b. "**UCSF HEARTS Program Outcomes**" (web page). UCSF HEARTS website, October 2018.

Ursache, Alexandra, Clancy Blair, and C. Cybele Raver. 2012. "**The Promotion of Self-Regulation as a Means of Enhancing School Readiness and Early Achievement in Children at Risk for School Failure**." *Child Development Perspectives* 6, no. 2: 122–128.

U.S. Census Bureau, Current Population Survey Annual Social and Economic Supplement microdata (U.S. Census Bureau CPS-ASEC). 2006. **Family Income in 2005** [data tables]. Accessed March 2019.

Van der Kolk, Bessel A. 2011. "**Post-Traumatic Childhood**." *New York Times*, May 10, 2011.

Von Hoffman, Emily. 2015. "**How Incarceration Infects a Community**." *Atlantic*, March 6, 2015.

Wadsworth, Martha E., Tali Raviv, Christine Reinhard, Brian Wolff, Catherine DeCarlo Santiago, and Lindsey Einhorn. 2008. "**An Indirect Effects Model of the Association Between Poverty and Child Functioning: The Role of Children's Poverty-Related Stress**." *Journal of Loss and Trauma* 13: 156–185.

Walker, Sarah Cusworth, Suzanne E.U. Kerns, Aaron R. Lyon, Eric J. Bruns, and T.J. Cosgrove. 2010. "**Impact of School-Based Health Center Use on Academic Outcomes**." *Journal of Adolescent Health* 46, no. 3: 251–257.

Wang, Ming-Te. 2009. "**School Climate Support for Behavioral and Psychological Adjustment: Testing the Mediating Effect of Social Competence**." *School Psychology Quarterly* 24, no. 4: 240–251.

Weintraub, Dana, Melissa A. Rodgers, Luba Botcheva, Anna Loeb, Rachael Knight, Karina Ortega, Brooke Heymach, Megan Sandel, and Lynne Huffman. 2010. "**Pilot Study of Medical–Legal Partnership to Address Social and Legal Needs of Patients**." *Journal of Health Care for the Poor and Underserved* 21, no. 2: 157–168.

Wilson, Valerie, and William M. Rodgers III. 2016. ***Black–White Wage Gaps Expand with Rising Wage Inequality***. Economic Policy Institute, September 2016.

Zlotnick, Cheryl, Tammy W. Tam, and Laurie A. Soman. 2012. "**Life Course Outcomes on Mental and Physical Health: The Impact of Foster Care on Adulthood**." *American Journal of Public Health* 102, no. 3: 534–540.


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# Trauma and US Minority Children and Youth

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## Abstract

### Purpose of Review

This paper reviews the literature on the prevalence, risk factors, and effects of traumatic experiences on the mental health outcomes of minority youth in the USA.

### Recent Findings

The USA has an increasing number of children and youth from minority backgrounds. Research reveals that traumatic experiences disproportionately affect minority youth. These experiences include historical/generational trauma, immigration and acculturation stressors, natural and manmade disasters, experiences of discrimination, family violence, and community violence. The COVID-19 pandemic has also disproportionately affected minority youth resulting in illness and hospitalizations. Despite the higher incidence of trauma exposure, minority youth are less likely to access medical and mental health

care. These disparities are resulting in increasing rates of depression, anxiety, post-traumatic stress, substance use disorders, and suicide in minority youth.

## Summary

Recognizing and understanding the impact of trauma is critical to the healthy development and successful functioning of minority youth, and to the success of our nation.

**Keywords:** Minority, Race, Children, Trauma, Disparities, Mental health

## Introduction

The USA has undergone a major increase of non-European populations over the past 50 years. This has been both a result of demographic changes (aging of the non-Hispanic White/European origin populations); greater growth of African American, Latinx, Asian origin, and American Indian populations; and significant immigration from Latin America, Southeast and East Asia, the Middle East, and Africa. As of 2020, the majority of children and youth in the USA are from these minority, non-European backgrounds (this will be the case for the overall population by 2045) [1]. These populations face higher rates of psychosocial disparities such as poverty, lack of education, barriers to health and mental health services, and exposure to multiple stressors such as discrimination, racism, community violence exposure, and immigration and acculturation stresses. These composite stressors are resulting in increasing rates of mental health morbidity, such as depression, suicidality, stress-related disorders, school disciplinary actions, incarceration, and placement in state custody. At the same time, the children's mental health service system in the USA is a largely fragmented system geared to middle class Caucasian norms of family independence and self-sufficiency. In spite of some efforts, this system lacks the necessary skills and capacity to address the special cultural and psychosocial needs of growing minority populations [1–3].

To date, there has been no review of the literature examining the outcomes of multiple adverse experiences faced by minority youth including the development of trauma- and stressor-related disorders. The purpose of this review is to outline the literature in this important area and to inform service providers and policy makers in their efforts to address the needs of children and youth from minority and Black, Indigenous, and People of Color (BIPOC) backgrounds. We review overall studies around traumatization, historical trauma, and studies associated with specific types of traumatic experiences commonly experienced by minority children and youth: immigration trauma, community violence, child abuse/family violence, terrorism, disasters, and more recently the COVID-19 pandemic.

## Overall Prevalence and Risk Factors

The overall impression from the available literature is that the prevalence of traumatization and trauma-related disorders among youth from minority or BIPOC backgrounds is substantial and possibly higher than that found among those from White or European background populations. There are no epidemiological studies of the overall prevalence of post-traumatic stress disorder (PTSD) among minority or BIPOC children and youth. Alegria et al. [4], studying a nationally representative US sample of non-Latino White, Latino, Asian, African American, and Afro-Caribbean adults, demonstrated that Asians have lower prevalence rates of probable lifetime PTSD, whereas African Americans have higher rates as compared with non-Latino Whites, adjusting for type and number of exposures to traumatic events, and for sociodemographic and clinical factors. Roberts et al. [5], analyzing data from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), found that the lifetime prevalence of PTSD in adults was the highest among Blacks (8.7%), followed by Whites (7.4%), Hispanics (7.0%), and the lowest among Asians (4.0%), with differences in risk varying by type of traumatic event.

Studies among children are fewer so far but suggestive of similar results. Elkins et al. [6••] used data from the National Comorbidity Survey-Adolescent Supplement (NCS-A), a nationally representative adolescent sample ($N = 10{,}123$) to examine the impact of race/ethnicity on the association between adverse childhood experiences (ACEs) and PTSD in the USA. They found that race/ethnicity moderates the association between ACEs and PTSD. Although higher ACE scores increased the probability of lifetime PTSD across non-Hispanic White, Black, and Hispanic adolescents, non-Hispanic White adolescents presented with a much higher probability of lifetime PTSD compared to their Hispanic and Black peers.

Studies involving minority children and youth have primarily focused on risk factors associated with traumatization. Assari [7] analyzed data from 4696 non-Hispanic White and non-Hispanic Black children ages 8 to 11 years old who were participants in the Adolescent Brain Cognitive Development (ABCD) study. The primary outcome was the exposure to 1 or 2 + childhood traumas, measured by the Kiddie Schedule for Affective Disorders and Schizophrenia (K-SADS) semi-structured interview, and the independent variables were parental educational attainment and family income. He found that race/ethnicity showed statistically significant interactions with parental education and family income on exposure to childhood trauma, indicating weaker protective effects of parental education and family income on reducing exposure to trauma for non-Hispanic Black compared to non-Hispanic White children. Larson et al. [8] reviewed empirical studies between 2003 and 2013 of US pediatric populations and of US school behavioral health centers. Some studies suggested higher psychopathology and lower academic performance among minority children experiencing trauma. Andrews et al. [9]

investigated ethnic differences in trauma-related mental health symptoms among adolescents, and the mediating and moderating effects of poly-victimization (PV) using data from the first wave of the National Survey of Adolescents-Replication (NSA-R) study. Non-Hispanic Black and Hispanic adolescents reported higher levels of PV and trauma-related mental health symptoms (symptoms of posttraumatic stress and depression) compared to non-Hispanic Whites, though the effect sizes were small ($\gamma \leq 0.07$). PV fully accounted for the differences in mental health symptoms between non-Hispanic Black and non-Hispanic White adolescents, and partially accounted for the differences between Hispanic and non-Hispanic White adolescents. Milan et al. [10] in a prospective study of 1242 diverse adolescents examining risk factors for onset of PTSD versus risk factors for symptom development found that racial/ethnic differences were evident in both the likelihood for exposure to violence and the likelihood of PTSD. Recent violence was more common among African American youth (57%) compared to adolescents who identified as Latino (43%), White (33%), or other racial/ethnic groups (33%). In contrast, among those who experienced violence, African American adolescents had lower rates of PTSD (2%) than Latino (5%) and White (8%) adolescents. Oransky and Hahn [11] examined the role of poor caregiver-youth agreement regarding youths' exposures to potentially traumatic events as a risk factor for PTSD and mood symptoms. The predominantly female sample was racially/ethnically diverse (86.8% female, 13.2% male, 32.5% African American, 54.4% Latino/a, 2.6% Caucasian, 0.9% Asian American, and 8.8% other race/ethnicity). They found that overall caregiver-youth discrepancies regarding youths' histories of exposures to potentially traumatic events and caregiver PTSD symptoms were significantly associated with youths' self-reported symptoms and functional impairment. Espinoza and Wright [12••] reviewed eight papers for a special issue on cyberbullying among marginalized youth, including ethnic minority youth, and they concluded that cyberbullying was a growing risk factor for traumatization, in spite of the "digital divide," but that physical bullying was still more prevalent and some factors were protective, such as friendship support among Latinos.

Various studies focused on the role of substance use as a risk factor associated with traumatization among minority youth. Chasser [13] examined the role of age, gender, and minority status in a sample of diverse youth in treatment for substance use disorders. She found that substance dependent youth with comorbid PTSD were significantly more likely to be female and Latino. Park et al. [14] examined risk factors among college students that prospectively predicted exposure to potentially traumatic events (PTE) over a 2-month period. They found that subsequent PTE exposure was predicted by higher previous PTEs and binge drinking and was somewhat higher in ethnic minority students. Sartor et al. [15] examined the relationship between childhood trauma and alcohol use initiation in Black and White adolescent girls. They found that childhood trauma was more prevalent (29.0 vs. 17.5%) and alcohol use initiation less prevalent (37.7 vs. 54.4%) in Black vs. White girls but found no evidence for differences in risk conferred by trauma. Results indicate that low socioeconomic status (SES) and neighborhood factors (such as safety, community cohesion, and physical appearance of the neighborhood) contribute to the associations of childhood trauma and race with alcohol use initiation,

though race is still a significant risk independent factor. Porche et al. [16] used data from the Collaborative Psychiatric Epidemiology Surveys, a nationally representative probability sample of African Americans, Afro-Caribbeans, Asians, Latinos, and non-Latino White young adults ages 21–29. They found that childhood substance and conduct disorders mediated the relation between trauma and school dropout, with the likelihood of dropout decreased for Asians, and increased for African Americans and Latinos, compared to non-Latino Whites as a function of psychiatric disorders and trauma.

## Historical Trauma

Historical trauma refers to the cumulative experiences of emotional and psychological wounding in an individual. Intergenerational trauma is historical trauma that spans multiple generations and affects communities and their descendants. In examining current traumatic stressors, it is essential to review how historical and intergenerational mass trauma currently contributes to the vulnerabilities and unique needs of US minority youth. This can be identified in all American BIPOC populations.

Native Americans have experienced genocide and forced assimilation since the infancy of the USA. Native Americans report the greatest average number and variety of ACEs and the highest rates of physical abuse, sexual abuse, parental substance abuse, and witnessing violence than persons from any other racial/ethnic group [17]. Among US youth between ages 15 and 24, American Indians or Alaska Natives have the highest suicide [18]. Despite confounding factors such as income, social support, and access and utilization of mental health services both preceding and during the COVID-19 pandemic, historical trauma is known to be a major predictor of psychological stress among Native Americans [19].

African Americans have experienced slavery and still continue to experience racial discrimination. The historical context of enslaved Black mothers being separated from their infants and being forced to breastfeed their owners' children is a contributing factor for present day Black women's decision to not breastfeed their babies [20]. This remains a significant finding even after controlling for demographic and social support risk [21]. Structural racism (a system in which public policies and institutional practices reinforce racial inequities) and historical marginalization are among several reasons that African American children are overrepresented by 2–3 times in the foster care system [22] and are more likely to have been exposed to a greater number of trauma types and community violence than White children [23]. Black mothers not only worry about the racial inequality and unfair treatment of their children, but especially fear that their sons will be killed doing everyday activities such as driving through a neighborhood or wearing a hoodie simply because they are Black [24]. These fears are likely based on both historical trauma and the recent violence against Black men that has received significant media attention. The historical marginalization of African Americans contributes to health inequities, such as lack of safe transportation among injured Black pedestrians leading to higher hospitalization

rates compared to injured White pedestrians [25]. History of being subjected to unethical clinical studies, such as the Tuskegee study, has contributed to the African American youth's mistrust of the government and the healthcare system which results in low influenza vaccination rates [26], COVID-19 vaccination hesitancy [27], and higher susceptibility to dying from COVID-19 than other racial groups [28].

Asian-American minorities have experienced various types of mass traumas, such as colonialization of Philippines by the USA from 1880s through 1940s, the ban on immigration of people from China in late 1880s, restrictions on Chinese from testifying in an American court of law in 1850s, the internment of persons of Japanese ancestry in 1940s, the influx of Vietnamese refugees after the Vietnam war in 1970s and 1980s, and surge of individuals who came to the USA as "mail-order brides" or through adoption. The term "Asian-American" is both inclusive and exclusive in that heterogeneous groups of people are classified together as "Asian American" without attention to their distinct cultures and ethnicities, while people from certain countries in Asia (such as India, Pakistan, and Bangladesh) are often not included in the Asian American group based on physical characteristics. While some minorities have struggled with the stereotype of being disadvantaged and oppressed, Asian-Americans have the unique burden of being labeled a "model minority." This burden, with other cultural factors, contributes to the underutilization of mental health services among Asian-Americans even after controlling for the perception of needing psychiatric treatment [29, 30]. Since the onset of the COVID-19 pandemic, 71% Asian-American youth perceived health-related Sinophobia [31]. Asian-American youth and college students have reported experiencing more xenophobia and COVID-19-related discrimination compared to non-Hispanic White youth [32]. A survey of Asian-Americans that included both adults and children ages 12 and older showed that 46% of them could not find a place to get tested for COVID-19 and 70% avoided leaving their home to go to public places due to fear of race-based hostility [33].

Latinos have experienced intergenerational mass trauma going back to the conquest of indigenous civilizations by Europeans, and more recently fleeing political, sexual, and gang violence and economic disruptions in their countries of origin before immigration to the USA. Immigration itself is experienced as traumatic by many Latinx youth in the USA [34]. For unaccompanied migrant youth, it is further complicated by separation from their caregivers [35] which interferes with their healthy identity formation [36••]. The Office of Inspector General Report from 2019 expressed concerns about the living conditions of detained youth including serious overcrowding, prolonged detention, and poor physical and unhygienic conditions [37, 38]. Tynes et al. [39••] found that Latinx youth who viewed viral videos of undocumented immigrants of their own ethnicity detained in cages experienced increased depressive symptoms. Documented Latinx children still remain vulnerable due to economic disadvantage. For example, among hired child farmworkers in the USA, Latinx children were found to be at high risk for exploitation [40] and more likely to experience work injuries and heat-related illness [41].

## Specific Traumatic Stressors

### Immigration Trauma

There has been strong consensus for some time that children and youth entering the USA as refugees and migrants were at elevated risk for adverse mental health outcomes as a result of traumatic exposures during their journey and entry.

Potochnick and Perreira [42] examined data from the Latino Adolescent Migration, Health, and Adaptation (LAMHA) study, which surveyed 281 first-generation Latino immigrant youth, ages 12–19. Among first-generation Latino adolescents, they found nearly 7% were symptomatic for depression and 29% were symptomatic for anxiety. Females were slightly more likely to have symptoms of depression but less likely to have symptoms of anxiety. Using logistic regression, they found that migration stressors increased the risk of both depressive symptoms and anxiety, while time in the USA and support from family and teachers reduced their risk. Compared to documented adolescents, undocumented adolescents were at greater risk of anxiety, and children in mixed-status families were at greater risk of anxiety and depressive symptoms. Clary et al. [43] examined the association of pre, during, and post immigration trauma experiences and mental health outcomes in a sample of immigrant Central American youth. They studied a convenience sample ($n = 104$) of Latino youth aged 12–17 years old in the USA for 3 or fewer years. Two-thirds of youth experienced at least one traumatic event, 44% experienced an event once, and 23% experienced two or more traumatic events during migration. Trauma experienced at different migration stages was associated with anxiety, PTSD, and depression. Berger Cardoso [44] reported a study with a convenience sample of Central American immigrant children and youth suggesting roughly 60% of unaccompanied migrant youth met the criteria for PTSD, 30% a depressive disorder, and 30% reported suicidal ideation in the past year. Despite these findings, Loria and Caughy [45], examining ACEs among first, second, and third generation migrant Latino children, found that Latino migrant children had a lower prevalence of 2 or more ACEs (13%; $n = 801$) compared with nonimmigrant Latino children (40%; $n = 772$), with prevalence of exposure to ACEs the highest among third- or higher-generation nonimmigrant children and the lowest among second-generation migrant children.

Some studies have focused on the impact of maternal traumatization related to immigration on their offspring. For example, East et al. [46] studied the impact of maternal traumatization on offspring in 198 Somali immigrant mothers who experienced significant trauma while spending an average of 7 years in refugee camps. There was no direct association between trauma experienced by the mother and their children's well-being, but mothers' posttraumatic stress and depressive symptoms significantly mediated

the effects of mothers' past torture on their children's adjustment, a pattern indicative of intergenerational traumatization.

More recently, the crisis of unaccompanied minors along the USA-Mexico border has been a major focus of work on immigration trauma. Berger Cardoso et al. [47] outlined how from 2013 to 2016 the USA placed over 123,000 unaccompanied migrant youth—predominantly from Central America—with a parent or other adult sponsor residing in the USA. Following placement, local communities are tasked with integrating migrant youth, many of whom experience pre- and in-transit migration traumas, family separation, limited/interrupted schooling, and unauthorized legal status, placing them at heightened risk for psychological distress, academic disengagement, maltreatment, and human trafficking. However, fewer than 10% of young people receive formal post-release services. Their paper addresses the paucity of research on the experiences of the 90% of children and youth without access to post-release services and their service needs and proposes research to identify structural challenges to the provision of services and to inform best practices in support of unaccompanied youth. Other conceptual papers [48–51] have also focused on the ethical, developmental, and potential clinical adverse outcomes from unaccompanied child immigration, how US government policies have aggravated these adverse outcomes, approaches to services provision, and the need for more research and services outreach to this vulnerable population.

## Community Violence

The current literature shows that BIPOC/minority children in the USA are more likely to be exposed to greater amounts of various types of violence over their lifetimes compared to non-Hispanic Whites [52]. These types of violence reported by youths are also called polyvictimization. These traumatic events could be from community violence, exposure to crime, police violence/abuse, school shootings, and natural disasters. A recent review article has identified several pathways linking natural disasters and violence against children worldwide [53].

Community violence has disproportionately affected minority communities. Black youths are at higher risks of being exposed to higher amounts of adverse childhood experiences as well as physically harmful forms of violence [54]. Racial and ethnic differences in exposure to violence appear to broaden across adolescence, and neighborhood/familial environment play a part in triggers that give rise to the disparities in violence exposure [55••]. Minority youths are not only likely to witness more violence but they are also more likely to face more barriers to care and receive low-quality care [56]. One recent study examining the treatment modalities used in community mental health settings to treat youths exposed to violence found that Black children are more likely to receive non-evidence-based treatments [57].

Increased community violence also means more exposure to police and the trauma that comes from police violence. Black girls are found to experience up to 4.3 times the injury from law enforcement compared to White girls in an analysis of California ER visits and hospitalizations [58]. Recent police killings of unarmed Black Americans are found to have a negative impact on mental health among Black Americans [59]. Viewing distressing news, such as police killings, affecting members of one's own racial or ethnic group is associated with higher levels of depressive and PTSD symptoms [39••]. Subjective religiosity, measured by self-reported importance of religion in life and importance of prayer in stressful situations, is a protective factor in depressive symptoms from police abuse of Black Americans [60].

Yet another violent event that is widely publicized in the USA is school mass shootings. By its nature, school shootings occur where most victims are children and adolescents. Decreased sense of safety and increased absenteeism were found in students who attended a school in close proximity to a school that had a mass shooting [61]. Black youths who are concerned about violence at their school were more likely to have depressive symptoms [62]. While current literature outlines the importance of knowing risk and protective factors for better outcomes of the survivors [63], there is a lack of published data on how or if school shootings affect minority youths differently than White youths.

## Child Abuse and Family Violence

Children of ethnic and racial minorities are exposed to higher rates of violence and experience a greater number of adverse childhood events compared to White children. Furthermore, minority populations are overrepresented in child protective services compared to their presence in the population [64]. Multicultural, Native American, and African American children are all more likely than White children to be removed from their home by Child Protective Services [64]. Several studies highlight the increased adversity experienced by children of color, the decreased opportunities they are afforded, and how this impacts them as adults [65–68].

Research shows that exposure to violence and other adverse events in childhood causes downstream consequences that last well into adulthood [67–77]. For example, children who are exposed to more violence often experience higher rates of poverty, physical and mental health issues, and have higher rates of incarceration as adults [65, 69, 72, 73]. Furthermore, the types of stressors and adverse childhood events differ across races [67]. Overall, White children reportedly experience the least amount of violence and adverse events [67]. African American children experience the most adverse events, including a parent death, a parent serving time in jail, exposure to domestic violence, and witnessing violence in the neighborhood [67]. Powers et al. studying a sample of highly traumatized minority youth, found that children who experience child abuse are more likely to develop psychotic disorders and depressive disorders, and if they developed PTSD from exposure to family violence the risk of

developing a psychotic disorder further increases [74••]. Interestingly, several papers highlight that minority children, mainly African American and Latino children, are less likely to develop PTSD if exposed to multiple episodes of family violence [75]. Some researchers believe this is due to inherent resilience within those cultures, though under-identification of PTSD in these populations could be a factor [75]. Though family violence is prevalent in most if not all cultures, some cultural groups may have greater societal acceptance [76].

## Natural Disasters and Trauma

The number of children who are affected by natural disasters can be expected to rise as the frequency of natural disasters is expected to increase due to climate changes. Mental health impact of these disasters have in children is reflected in post-traumatic stress symptoms as well as depression and anxiety. Overall, there is a lack of understanding if cultural differences and social support impact children after a natural disaster. A review by Cerna-Turoff et al. [53] found no consistent association between violence against children and natural disasters which underscores need for further research on how natural disasters affect human populations.

Recent survey of Puerto Rican youths after Hurricane Maria revealed significant prevalence of disaster-related stressors and high levels of PTSD and depression symptoms [78]. Hurricane Katrina was another natural disaster that disproportionately affected minority/BIPOC children. One study by Lai et al. [78] examined the relationship between the post-traumatic stress symptoms among youth and social support after natural disasters. They followed patients from 3–7 months after Hurricane Katrina until 25–27 months after the event and determined that post-traumatic stress symptoms undermine social support. Those who had higher symptoms of post-traumatic stress were less likely to seek supportive relationships and/or perceive less support is available. Utilization of mental health services also appeared to be affected by hurricane Katrina. While encounters stayed the same, medication utilization for children displaced by hurricane Katrina went down, suggesting logistical obstacles in obtaining or utilizing medical services [79]. Another study viewing long-term mental health consequences of Hurricane Katrina found that exposure to hurricane-related trauma is correlated to co-occurring psychological distress 12 years after the event [80]. Lai et al. [81••], in a study of the trajectories of post-traumatic stress in youth after natural disasters, studied combined data from Hurricanes Andrew, Charley, Ike, and Katrina. They found that racial/ethnic minority youth had higher odds than non-minority youth of having a pattern of slower rate of decrease in post-traumatic stress symptoms, indicating longer lasting adverse mental health effects.

## Terrorism and Trauma

Although all children are affected to varying degrees by acts of terrorism, youths from minority groups face specific challenges. For example, post September 11, 2001, half of Arab American adults surveyed across 35 states reported depression and a quarter of them reported moderate to high anxiety [82]. Based on many studies of the impact of parental mental health on children, it is reasonable to extrapolate that Arab American youth were also likely to experience mental health problems like their adult family members. Indeed, a retrospective study by Gargano et al. [83] showed that among children exposed to the 9/11 dust cloud, those of racial minority backgrounds were more likely to be hospitalized due to 9/11-related symptoms. A study by Becker-Blease et al. [84] showed that among a national representative sample of children aged 2–17, youth who identified as Black, Hispanic, and non-White endorsed more worrying following sniper shootings and kidnappings of 2002 than did their non-Hispanic White peers.

## Impact of the COVID-19 Pandemic on Minority Children

A growing literature has addressed the demographic, social, and economic conditions that increase risk for negative outcomes for minority children in the context of the COVID-19 pandemic. These include poverty, food insecurity, detrimental living situations (e.g., homelessness, crowded living environments, and inadequate sanitation), congregate housing, front line worker exposure, pre-existing and comorbid medical and mental health problems, physical and cognitive disabilities, and disparities in access to social support and medical and mental health care. Indeed, compared to their White counterparts, Black, Hispanic, and Asian children are less likely to be tested for COVID-19 [85], even though death and hospitalization rates in general and for children have been the highest in BIPOC populations [86, 87]. Pfefferbaum, in her recent review of the children's reactions to the COVID-19 pandemic [88], pointed out that many of the psychosocial vulnerabilities overlap with racial/ethnic disparities, and further increased risk and affect access to services for racial/ethnic minority children.

One possible source of increased traumatization for BIPOC children is from reported increases in child abuse and domestic violence associated with increased economic stressors from the pandemic [89••, 90]. Farquharson and Thornton [90] also posited possible intergenerational traumatization for BIPOC children from pandemic experiences of loss and social isolation. Claypool and Moore de Peralta [91] posited how ACEs resulting from the pandemic have compounded the toxic stress resulting from pre-existing ACEs, leading to disproportionate harm to Latino children and communities, especially in their future development. Spencer et al. [92••] have one of the few population-based studies of the impact of psychosocial function in minority children resulting from the pandemic, finding a dramatic increase in depression, anxiety and social risks among urban, and racial and ethnic minority school-age children compared to before the pandemic, although mental health symptoms correlated more to pre-pandemic social risks.

## Conclusions

Investigating and understanding the impact of trauma among children of minority/BIPOC populations is critical given their growing numbers in the USA. The mental health and successful function of minority youth is vital to the success of our nation.

All the different areas covered in this review need further research. There is also a need for additional research on interventions and prevention of traumatic stress in this population, which are not covered in this paper. Perhaps the most pivotal area for further research is on the impact of cumulative traumatic stress and historical trauma on minority/BIPOC children and families, which is critical for prevention efforts. In recent years, we are more clearly focusing on indicators of the adverse impact of cumulative and historical trauma. One of these indicators is the close relationship between structural racism and cumulative psychosocial disadvantages resulting in increasing traumatic stress. There are possible neurobiological outcomes and consequences that investigators are starting to focus on. These include studies on the impact of discrimination/racism and general health, such as various recent studies examining the relationship between telomere length (a chromosomal measure of life longevity) and cumulative exposure to discrimination [93••, 94]. Another related area of study is the rising rates of suicidality in Black youth, which has been highlighted as a crisis and a research priority by the Congressional Black Caucus of the US Congress [95••, 96]. An additional finding in epidemiological and clinical studies that warrants close re-examination is the higher rate of psychosis in African Americans than other groups, which could be potentially related to chronic and traumatic stress. Research has traditionally pointed to clinician diagnostic bias as the main factor behind this finding. However, two other hypotheses are now being entertained: one of psychosis as an idiom distress related to traumatization among minority populations and the other being that these higher rates the psychosis point to the cumulative impact of traumatic stress through epigenetic processes [74••, 97, 98••].

Insofar as intervention and services research related to traumatic stress in minority populations of children, there is increasing emphasis on disparities in services utilization, and on culturally acceptable and effective services, which tend to be more multi-modal and multi-disciplinary along the lines of community systems of care philosophy. Systems of care programs have been able to demonstrate positive impacts on services disparities as well as effectiveness in addressing suicide and trauma [99, 100].

Above all, it is important that such research follow principles of cultural humility, including involvement by the minority populations being studied, as well as being informed by the lived experiences of investigators from these populations. A common motto among minority and BIPOC populations is that of “nothing about us without us,” and it would behoove investigators to honor the intent of this motto.

## Declarations

### Conflict of Interest

The authors declare no competing interests.

## Footnotes

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## References

### Papers of particular interest, published recently, have been highlighted as: •• Of major importance

1. Children's defense fund. The State of America's Children 2020. https://www.childrensdefense.org/wp-content/uploads/2020/01/The-State-Of-Americas-Children-2020.pdf .

2. Alegria M, Vallas M, Pumariega AJ. Racial and ethnic disparities in pediatric mental health. Child Adolesc Psychiatr Clin N Am. 2010;19:759–774. doi: 10.1016/j.chc.2010.07.001. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

3. Alegría M, Green J, McLaughlin K, Loder S. Disparities in child and adolescent mental health and mental health services in the U.S. A William T. Grant Foundation Inequality Paper. 2015.

4. Alegría M, Fortuna LR, Lin JY, Norris FH, Gao S, Takeuchi DT, Jackson JS, Shrout PE, Valentine A. Prevalence, risk, and correlates of posttraumatic stress disorder across ethnic and racial minority groups in the United States. Med Care. 2013;51:1114–1123. doi: 10.1097/MLR.0000000000000007. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

5. Roberts A, Gilman S, Breslau J, Berslau N, Koenin K. Race/ethnic differences in exposure to traumatic events, development of post-traumatic stress disorder, and treatment-seeking for post-traumatic stress disorder in the United States. Psychol Med. 2011;41:71–83. doi: 10.1017/S0033291710000401. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

6. ••Elkins J, Briggs H, Miller K, Kim I, Orellana R, Mowbray O. Racial/ethnic differences in the impact of adverse childhood experiences on posttraumatic stress disorder in a nationally representative sample of adolescents. Child Adolesc Soc Work J 2019:36: 449-457.10.1007/s10560-018-0585-x. **Important study examining the differential impact of adverse child experiences as risk factors for post-traumatic stress in minority children.**

7. Assari S. Family socioeconomic status and exposure to childhood trauma: racial differences. Children. 2020;7:57. doi: 10.3390/children7060057. [DOI ] [PMC free article] [PubMed] [ Google Scholar ]

8. Larson S, Chapman S, Spetz J, Brindis C. Chronic childhood trauma, mental health, academic achievement, and school-based health center mental health services. J Sch Health. 2017;87:675–686. doi: 10.1111/josh.12541. [DOI ] [PubMed] [Google Scholar ]

9. Andrews A, Jobe-Shields L, López C, Metzger I, de Arellano M, Saunders B, Kilpatrick D. Polyvictimization, income, and ethnic differences in trauma-related mental health during adolescence. Social Psychiatry and Psychiatric Epidemiology: The International Journal for Research in Social and Genetic Epidemiology and Mental Health Services. 2015;50:1223–1234. doi: 10.1002/jts.21672. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

10. Milan S, Zona K, Turcios-Cotto V. Prospective risk factors for adolescent PTSD: sources of differential exposure and differential vulnerability. J Abnorm Child Psychol. 2013;41:339–353. doi: 10.1007/s10802-012-9677-9. [DOI ] [PubMed] [Google Scholar ]

11. Oransky M, Hahn H. Caregiver and youth agreement regarding youths' trauma histories: implications for youths' functioning after exposure to trauma. J Youth Adolesc. 2013;42:1528–1542. doi: 10.1007/s10964-013-9947-z. [DOI ] [PubMed] [Google Scholar ]

12. ••Espinoza G, Wright M. cyberbullying experiences among marginalized youth: what do we know and where do we go next?. J Child Adolesc Trauma. 2018:11:1-5.10.1007/s40653-018-0207-y. **Recent study of the impact of cyberbullying on minority youth.** [DOI ] [PMC free article] [PubMed]

13. Chasser Y. Profiles of youths with PTSD and addiction. J Child Adolesc Subst Abuse. 2016;25:448–454. doi: 10.1080/1067828X.2015.1081115. [DOI ] [PMC free article]

[PubMed] [Google Scholar ]

14. Park C, Frazier P, Tennen H, Mills M, Tomich P. Prospective risk factors for subsequent exposure to potentially traumatic events. Anxiety Stress Coping. 2013;26:254–269. doi: 10.1177/2167696814544501. [DOI ] [PubMed] [Google Scholar ]

15. Sartor C, Bachrach R, Stepp S, Werner K, Hipwell A, Chung T. The relationship between childhood trauma and alcohol use initiation in Black and White adolescent girls: considering socioeconomic status and neighborhood factors. Social Psychiatry and Psychiatric Epidemiology: The International Journal for Research in Social and Genetic Epidemiology and Mental Health Services. 2018;53:21–30. doi: 10.1007/s00127-017-1461-2. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

16. Porche M, Fortuna L, Lin J, Alegria M. Childhood trauma and psychiatric disorders as correlates of school dropout in a national sample of young adults. Child Dev. 2011;82:982–998. doi: 10.1111/j.1467-8624.2010.01534.x. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

17. Richards TN, Schwartz JA, Wright E. Examining adverse childhood experiences among Native American persons in a nationally representative sample: differences among racial/ethnic groups and race/ethnicity-sex dyads. Child Abuse Negl. 2021;111:104812. doi: 10.1016/j.chiabu.2020.104812. [DOI ] [PubMed] [Google Scholar ]

18. Curtin S, Hedegaard H. Corporate Authors: National Center for Health Statistics (U.S.). Suicide rates for females and males by race and ethnicity: United States, 1999 and 2017. Division of Vital Statistics. National Center for Health Statistics (U.S.). Division of Analysis and Epidemiology. Published Date: June 2019. Series: NCHS health E-stats. https://stacks.cdc.gov/view/cdc/79168 .

19. John-Henderson NA, Ginty AT. Historical trauma and social support as predictors of psychological stress responses in American Indian adults during the COVID-19 pandemic. J Psychosom Res. 2020;139:110263. doi: 10.1016/j.jpsychores.2020.110263. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

20. Green VL, Killings NL, Clare CA. The historical, psychosocial, and cultural context of breastfeeding in the African American community. Breastfeed Med. 2021;16:116–120. doi: 10.1089/bfm.2020.0316. [DOI ] [PubMed] [Google Scholar ]

21. Johnson AM, Menke R, Handelzalts JE, Green K, Muzik M. Reimagining racial trauma as a barrier to breastfeeding versus childhood trauma and depression among African American

mothers. Breastfeed Med. 2021;16:493–500. doi: 10.1089/bfm.2020.0304. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

22. Roberts DE. Child protection as surveillance of African American families. The Journal of Social Welfare & Family Law. 2014;36:426–437. doi: 10.1080/09649069.2014.967991. [DOI ] [Google Scholar ]

23. Wamser-Nanney R, Cherry KE, Campbell C, Trombetta E. Racial differences in children's trauma symptoms following complex trauma exposure. J Interpers Violence. 2021;36:2498–2520. doi: 10.1177/0886260518760019. [DOI ] [PubMed] [Google Scholar ]

24. Dormire SL, Gary JC, Norman JM, Harvey IS. Insights into fear: a phenomenological study of Black mothers. J Adv Nurs. 2021;77:4490–4499. doi: 10.1111/jan.14963. [DOI ] [PubMed] [Google Scholar ]

25. Hamann C, Peek-Asa C, Butcher B. Racial disparities in pedestrian-related injury hospitalizations in the United States. BMC Public Health. 2020;20:1459. doi: 10.1186/s12889. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

26. Ferdinand KC, Nedunchezhian S, Reddy TK. The COVID-19 and influenza "Twindemic": barriers to influenza vaccination and potential acceptance of SARS-CoV2 vaccination in African Americans. J Natl Med Assoc. 2020;112:681–687. doi: 10.1016/j.jnma.2020.11.001. [DOI ] [PubMed] [Google Scholar ]

27. Budhwani H, Maycock T, Murrell W, Simpson T. COVID-19 vaccine sentiments among African American or Black adolescents in rural Alabama. The Journal of Adolescent Health: official publication of the Society for Adolescent Medicine. 2021;69:1041–1043. doi: 10.1016/j.jadohealth.2021.09.010. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

28. Mingo TM. When surviving Jim Crow is a preexisting condition: the impact of COVID-19 on African Americans in late adulthood and their perceptions of the medical field. Adultspan Journal. 2021;20:85–96. doi: 10.1002/adsp.12112. [DOI ] [Google Scholar ]

29. Kung WW, Wang X, Liu X, Goldmann E, Huang D. Unmet mental health care needs among Asian Americans 10¯11 years after exposure to the world trade center attack. Int J Environ Res Public Health. 2019;16:1302. doi: 10.3390/ijerph16071302. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

30. Yang KG, Rodgers CRR, Lee E, Lê CB. Disparities in mental health care utilization and perceived need among Asian Americans: 2012–2016. Psychiatr Serv. 2020;71:21–27. doi:

10.1176/appi.ps.201900126. [DOI ] [PubMed] [Google Scholar ]

31. Cheah CSL, Wang C, Ren H, Zong X, Cho HS, Xue X. COVID-19 racism and mental health in Chinese American families. Pediatrics. 2020;146:e2020021816. doi: 10.1542/peds.2020-021816. [DOI ] [PubMed] [Google Scholar ]

32. Stinson EA, Sullivan RM, Peteet BJ, Tapert SF, Baker FC, Breslin FJ, Dick AS, Gonzalez MR, Guillaume M, Marshall AT, McCabe CJ, Pelham WE, 3rd, Van Rinsveld AM, Sheth CS, Haft SL, Zhou Q. An outbreak of xenophobia: perceived discrimination and anxiety in Chinese American college students before and during the COVID-19 pandemic. Int J Psychol. 2021;56:522–531. doi: 10.1002/ijop.12740. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

33. Quach T, Đoàn LN, Liou J, Ponce NA. A rapid assessment of the impact of COVID-19 on Asian Americans: cross-sectional survey study. JMIR Public Health Surveill. 2021;7:e23976. doi: 10.2196/23976. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

34. de Arellano MA, Andrews AR, 3rd, Reid-Quiñones K, Vasquez D, Silcott Doherty L, Danielson CK, Rheingold A. Immigration trauma among Hispanic youth: missed by trauma assessments and predictive of depression and PTSD symptoms. Journal of Latina/o Psychology. 2018;6:159–174. doi: 10.1037/lat0000090. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

35. NeMoyer A, Rodriguez T, Alvarez K. Psychological practice with unaccompanied immigrant minors: clinical and legal considerations. Translational Issues in Psychological Science. 2019;5:4–16. doi: 10.1037/tps0000175. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

36. ••Shadid O, Sidhu SS. The mental health effects of migrant family separation. J Am Acad Child Adolesc Psychiatry. 2021:60:1052-1055.10.1016/j.jaac.2021.02.018. **Well designed study examining traumatic impact of family separation in refugee children coming across the US Mexico border.** [DOI ] [PubMed]

37. Department of Homeland Security Management Alert - DHS needs to address dangerous overcrowding and prolonged detention of children and adults in the Rio Grande Valley (Redacted). OIG-19–51. 2019. Available at: https://www.oig.dhs.gov/sites/default/files/assets/2019-07/OIG-19-51-Jul19_.pdf .

38. Peeler KR, Hampton K, Lucero J, Ijadi-Maghsoodi R. Sleep deprivation of detained children: another reason to end child detention. Health Hum Rights. 2020;22:317–320. [PMC free article] [PubMed] [Google Scholar ]

39. ••Tynes BM, Willis HA, Stewart AM, Hamilton MW. Race-related traumatic events online and mental health among adolescents of color. J Adolesc Health 2019:65:371-377.10.1016/j.jadohealth.2019.03.006. **Recent article focusing on the impact of online exposure to race-related traumatic events on minority youth.** [DOI ] [PubMed]

40. Quandt SA, Arnold TJ, Mora DC, Sandberg JC, Daniel SS, Arcury TA. Hired Latinx child farm labor in North Carolina: the demand-support-control model applied to a vulnerable worker population. Am J Ind Med. 2019;62:1079–1090. doi: 10.1002/ajim.23039. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

41. Arcury TA, Quandt SA, Arnold TJ, Chen H, Daniel SS. Occupational injuries of latinx child farmworkers in North Carolina: associations with work safety culture. J Occup Environ Med. 2020;62:853–858. doi: 10.1097/JOM.0000000000001982. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

42. Potochnick SR, Perreira KM. Depression and anxiety among first-generation immigrant Latino youth: key correlates and implications for future research. J Nerv Ment Dis. 2010;198:470–477. doi: 10.1097/NMD.0b013e3181e4ce24. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

43. Clary S, Snead R, Dietz-Ortiz D, Rivera I, Edberg M. Immigrant trauma and mental health outcomes among Latino youth. J Immigr Minor Health. 2018;20:1053–1059. doi: 10.1007/s10903-017-0673-6. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

44. Berger Cardoso J. Trauma and substance use in unaccompanied migrant youth in Texas. National Hispanic and Latino Addiction Technology Center Network. Houston, TX. 2017.

45. Loria H, Caughy M. prevalence of adverse childhood experiences in low-income latino immigrant and nonimmigrant children. J Pediatr. 2018;192:209–215.e1. doi: 10.1016/j.jpeds.2017.09.056. [DOI ] [PubMed] [Google Scholar ]

46. East P, Gahagan S, Al-Delaimy W. The impact of refugee mothers' trauma, posttraumatic stress, and depression on their children's adjustment. J Immigr Minor Health. 2018;20:271–282. doi: 10.1007/s10903-017-0624-2. [DOI ] [PubMed] [Google Scholar ]

47. Berger Cardoso J, Brabeck K, Stinchcomb D, Heidbrink L, Price O, Gil-Garcia O, McCrea T, Zayas L. Integration of unaccompanied migrant youth in the United States: a call for research. J Ethn Migr Stud. 2019;45:273–292. doi: 10.1080/1369183X.2017.1404261. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

48. Sawyer CB, Márquez J. Senseless violence against Central American unaccompanied minors: historical background and call for help. J Psychol. 2017;151:69–75. doi: 10.1080/00223980.2016.1226743. [DOI ] [PubMed] [Google Scholar ]

49. NeMoyer A, Rodriguez T, Alvarez K. Psychological practice with unaccompanied immigrant minors: clinical and legal considerations. Transl Issues Psychol Sci. 2019;5:4–16. doi: 10.1037/tps0000175. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

50. Jones-Mason K, Behrens KY, Gribneau Bahm NI. The psychobiological consequences of child separation at the border: lessons from research on attachment and emotion regulation. Attach Hum Dev. 2021;23:1–36. doi: 10.1080/14616734.2019.1692879. [DOI ] [PubMed] [Google Scholar ]

51. Song SJ. Mental health of unaccompanied children: effects of U.S. immigration policies. BJPsych Open 2021:7:e200. 10.1192/bjo.2021.1016. [DOI ] [PMC free article] [PubMed]

52. López CM, Andrews AR, Chisolm AM, de Arellano MA, Saunders B, Kilpatrick DG. Racial/ethnic differences in trauma exposure and mental health disorders in adolescents. Cultur Divers Ethnic Minor Psychol. 2017;23:382–387. doi: 10.1037/cdp0000126. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

53. Cerna-Turoff I, Fischer HT, Mansourian H, Mayhew S. The pathways between natural disasters and violence against children: a systematic review. BMC Public Health. 2021;21:1249. doi: 10.1186/s12889-021-11252-3. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

54. Sheats KJ, Irving SM, Mercy JA, et al. Violence-related disparities experienced by Black youth and young adults: opportunities for prevention. Am J Prev Med. 2018;55:462–469. doi: 10.1016/j.amepre.2018.05.017. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

55. ••Andrews AR 3rd, López CM, Snyder A, Saunders B, G Kilpatrick D. Polyvictimization, related symptoms, and familial and neighborhood contexts as longitudinal mediators of racial/ethnic disparities in violence exposure across adolescence. J Immigr Minor Health 2019:21:679–692. 10.1007/s10903-018-0842-2. **Important study examining the impact of polyvictimization on racial/ ethnic minority youth.** [DOI ] [PMC free article] [PubMed]

56. Kia-Keating M, Barnett ML, Liu SR, Sims GM, Ruth AB. Trauma-responsive care in a pediatric setting: feasibility and acceptability of screening for adverse childhood experiences. Am J Community Psychol. 2019;64:286–297. doi: 10.1002/ajcp.12366. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

57. Urban TH, et al. Utilization of evidence-based treatment models at community-based mental health settings for young children exposed to violence. Children and Youth Services Review. 2020:116:105233. 10.1016/j.childyouth.2020.105233.

58. Farkas K, Duarte CD, Ahern J. Injuries to children and adolescents by law enforcement: an analysis of California Emergency Department Visits and Hospitalizations, 2005–2017. JAMA Pediatr. 2022;176:89–91. doi: 10.1001/jamapediatrics.2021.2939. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

59. Bor J, Venkataramani AS, Williams DR, Tsai AC. Police killings and their spillover effects on the mental health of black Americans: a population-based, quasi-experimental study. Lancet. 2018;392:302–310. doi: 10.1016/S0140-6736(18)31130-9. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

60. Jackson AN, Butler-Barnes ST, Stafford JD, Robinson H, Allen PC. “Can I Live”: Black American adolescent boys’ reports of police abuse and the role of religiosity on mental health. Int J Environ Res Public Health. 2020;17:4330. doi: 10.3390/ijerph17124330. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

61. Rasberry CN, Sheremenko G, Lesesne CA, et al. Student-reported school safety perceptions, connectedness, and absenteeism following a multiple-fatality school shooting - Broward County, Florida, February 14–21, 2018. MMWR Morb Mortal Wkly Rep. 2020;69:231–235. doi: 10.15585/mmwr.mm6909a3. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

62. Riehm KE, Mojtabai R, Adams LB, et al. Adolescents’ concerns about school violence or shootings and association with depressive, anxiety, and panic symptoms. JAMA Netw Open. 2021;4:e2132131. doi: 10.1001/jamanetworkopen.2021.32131. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

63. Cimolai V, Schmitz J, Sood AB. Effects of mass shootings on the mental health of children and adolescents [published correction appears in Curr Psychiatry Rep 2021:23:26] Curr Psychiatry Rep. 2021;23:12. doi: 10.1007/s11920-021-01222-2. [DOI ] [PubMed] [Google Scholar ]

64. Maguire-Jack K, Font SA, Dillard R. Child protective services decision-making: the role of children’s race and county factors. Am J Orthopsychiatry. 2020;90:48. doi: 10.1037/ort0000388. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

65. Dakil Suzanne R, et al. Racial and ethnic disparities in physical abuse reporting and child protective services interventions in the United States. J Natl Med Assoc. 2011;103:926–931.

doi: 10.1016/s0027-9684(15)30449-1. [DOI ] [PubMed] [Google Scholar ]

66. Fagan AA, Novak A. Adverse childhood experiences and adolescent delinquency in a high-risk sample: a comparison of white and black youth. Youth Violence Juvenile Justice. 2018;16:395–417. doi: 10.1177/1541204017735568. [DOI ] [Google Scholar ]

67. Maguire-Jack K, Lanier P, Lombardi B. Investigating racial differences in clusters of adverse childhood experiences. Am J Orthopsychiatry. 2020;90:106. doi: 10.1037/ort0000405. [DOI ] [PubMed] [Google Scholar ]

68. Manduca R, Sampson RJ. Punishing and toxic neighborhood environments independently predict the intergenerational social mobility of black and white children. Proc Natl Acad Sci. 2019;116:7772–7777. doi: 10.1073/pnas.1820464116. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

69. Adams J, Mrug S, Knight DC. Characteristics of child physical and sexual abuse as predictors of psychopathology. Child Abuse Negl. 2018;86:167–177. doi: 10.1016/j.chiabu.2018.09.019. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

70. Hailes H, Yu R, Danese A, Fazel S. Long-term outcomes of childhood sexual abuse: an umbrella review. The Lancet Psychiatry. 2019;6:830–839. doi: 10.1016/S2215-0366(19)30286-X. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

71. Klumparendt, A. Nelson J, Barenbrügge J, Ehring T. Associations between childhood maltreatment and adult depression: a mediation analysis. BMC Psychiatry 2019:19:1–11. 10.1186/s12888-019-2016-8. [DOI ] [PMC free article] [PubMed]

72. Mwachofi A, Imai S, Bell RA. Adverse childhood experiences and mental health in adulthood: Evidence from North Carolina. J Affect Disord. 2020;267:251–257. doi: 10.1016/j.jad.2020.02.021. [DOI ] [PubMed] [Google Scholar ]

73. Sigurvinsdottir, R., Bjork Asgeirrsdottir, B., Ullman, S. The impact of sexual abuse, family violence/conflict, spirituality, and religion on anger and depressed mood among adolescents. J Interpers Violence. 2021:36:NP577-NP597. 10.1177/0886260517734860. [DOI ] [PubMed]

74. ••Powers A, Fani N, Cross D, Ressler K, Bradley B. Childhood trauma, PTSD, and psychosis: findings from a highly traumatized, minority sample. Child Abuse & Neglect 2016:58:111–118. 10.1016/j.chiabu.2016.06.015. **Significant study pointing to the association between childhood trauma and psychosis in minority youth, significant given historically higher prevalence of psychosis in minority populations.** [DOI ] [PMC free article] [PubMed]

75. Costello LF, Klein S. Racial/ethnic differences in determinants of trauma symptomatology among children in the US child welfare system exposed to intimate partner violence. J Fam Violence. 2019;34:33–45. doi: 10.1007/s10896-018-9976-1. [DOI ] [Google Scholar ]

76. Sardinha LM, Najera C, Hector E. Attitudes towards domestic violence in 49 low- and middle-income countries: a gendered analysis of prevalence and country-level correlates. PLoS ONE. 2018;13:e0206101. doi: 10.1371/journal.pone.0206101. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

77. Orengo-Aguayo R, Stewart RW, de Arellano MA, Suárez-Kindy JL, Young J. Disaster exposure and mental health among Puerto Rican youths after Hurricane Maria. JAMA Netw Open. 2019;2:e192619. doi: 10.1001/jamanetworkopen.2019.2619. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

78. Lai BS, La Greca AM, Colgan CA, Herge W, Chan S, Medzhitova J, Short M, Auslander B. Sleep problems and posttraumatic stress: children exposed to a natural disaster. J Pediatr Psychol. 2020;45:1016–1026. doi: 10.1093/jpepsy/jsaa061. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

79. Quast T, Gregory S, Storch EA. Utilization of mental health services by children displaced by Hurricane Katrina. Psychiatric Services (Washington, D.C.) 2018:69:580–586. 10.1176/appi.ps.201700281. [DOI ] [PMC free article] [PubMed]

80. Raker EJ, Lowe SR, Arcaya MC, Johnson ST, Rhodes J, Waters MC. Twelve years later: the long-term mental health consequences of Hurricane Katrina. Soc Sci Med. 1982;2019(242):112610. doi: 10.1016/j.socscimed.2019.112610. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

81. ••Lai B, La Greca A, Brincks A, Colgan C, D'Amico M, Lowe S, Kelley M. Trajectories of posttraumatic stress in youths after natural disasters. JAMA Network Open 2021:4(2):e2036682.10.1001/jamanetworkopen.2020.36682. **Well-designed multiple cohort study that racial/ethnic disparities in impact of trauma from natural disasters in minority youth as result of multiple complicating stressors.** [DOI ] [PMC free article] [PubMed]

82. Amer MM, Hovey JD. Anxiety and depression in a post-September 11 sample of Arabs in the USA. Soc Psychiatry Psychiatr Epidemiol. 2012;47:409–418. doi: 10.1007/s00127-011-0341-4. [DOI ] [PubMed] [Google Scholar ]

83. Gargano LM, Locke SH, Alper HE, Brite J. Hospitalizations among World Trade Center Health Registry enrollees who were under 18 years of age on 9/11, 2001–2016. Int J Environ

Res Public Health 2021:18:7527. 10.3390/ijerph18147527. [DOI ] [PMC free article] [PubMed]

84. Becker-Blease KA, Finkelhor D, Turner H. Media exposure predicts children's reactions to crime and terrorism. J Trauma Dissociation. 2008;9:225–248. doi: 10.1080/15299730802048652. [DOI ] [PubMed] [Google Scholar ]

85. Artiga S, Hill L, Ndugga N. Racial disparities in COVID-19 impacts and vaccinations for children. Racial Disparities in COVID-19 Impacts and Vaccinations for Children | KFF. 2021.

86. Shen J, Peccorato M, Bellonci C. Impact of the COVID-19 pandemic on children, youth and families. Boston: Judge Baker Center Evidence-Based Policy Institute. 2020. https://jbcc.harvard.edu/sites/default/files/impact_of_the_covid-19_pandemic_on_children_youth_and_families.pdf .

87. Romano SD, Blackstock AJ, Taylor EV, et al. Trends in racial and ethnic disparities in COVID-19 hospitalizations, by region – United States, March – December 2020. MMWR Morb Mortal Wkly Rep. 2021;70:560–565. doi: 10.15585/mmwr.mm7015e2. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

88. Pfefferbaum B. Children's psychological reactions to the COVID-19 pandemic. Current Psychiatric Reviews. 2022. In Press. [DOI ] [PMC free article] [PubMed]

89. ••Cuartas J. Heightened risk of child maltreatment amid the COVID-19 pandemic can exacerbate mental health problems for the next generation. Psychol Trauma 2020:12:S195-S196. 10.1037/tra0000597. **Study of child maltreatment during COVID that points to higher risk in minority children due to the disparities around the COVID epidemic.** [DOI ] [PubMed]

90. Farquharson W, Thornton C. Debate: exposing the most serious infirmity – racism's impact on health in the era of COVID-19. Child Adolesc Mental Health. 2020;25:182–183. doi: 10.1111/camh.12407. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

91. Claypool N, Moore de Peralta A. The influence of adverse childhood experiences (ACEs), including the COVID-19 pandemic, and toxic stress on development and health outcomes of latinx children in the USA: a review of the literature. Int Journal on Child Malt 2021:4:257–278. 10.1007/s42448-021-00080-y. [DOI ] [PMC free article] [PubMed]

92. ••Spencer AE, Oblath R, Dayal R, et al. Changes in psychosocial functioning among urban, school-age children during the COVID-19 pandemic. Child Adolesc Psychiatry Ment Health 2021:15:73. 10.1186/s13034-021-00419-w. **Well designed study that highlights**

**racial/ethnic disparities in the traumatic impact of the COVID epidemic inner city children.** [DOI ] [PMC free article] [PubMed]

93. ••Chae D, Martz C, Yip T, Fuller-Rowell T, Matthews K, Spears E, Wang Y, Slopen N, Adler N, Lin J, Brody G, Puterman E, Epel E. Racial discrimination and telomere shortening among African Americans: the Coronary Artery Risk Development in Young Adults (CARDIA) study. Health Psychol 2020:39:209–219. 10.1037/hea0000832. **Intriguing study that, though with adults, may point to pathways of cumulative traumatic impact of racism and structural inequalities through epigenetic mechanisms.** [DOI ] [PMC free article] [PubMed]

94. Lu D, Palmer J, Rosenberg L, Shields A, Orr E, DeVivo I, Cozier Y. Perceived racism in relation to telomere length among African American women in the Black women's health study. Ann Epidemiol. 2019;36:33–39. doi: 10.1016/j.annepidem.2019.06.003. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

95. ••Sheftall Arielle H, Vakil F, Ruch DA, Boyd RC, Lindsey MA, Bridge JA. Black youth suicide: investigation of current trends and precipitating circumstances. J Am Acad Child Adolesc Psychiatry. 2021:202. 10.1016/j.jaac.2021.08.021. **Important study that points out how racial/ethnic disparities and related stressors may be demonstrating themselves through higher risk of suicide in Black youth.** [DOI ] [PMC free article] [PubMed]

96. Congressional Black Caucus. Emergency taskforce on Black youth suicide and mental health. Ring the alarm: The crisis of Black youth suicide in America. 2020.

97. Schwartz RC, Blankenship DM. Racial disparities in psychotic disorder diagnosis: a review of empirical literature. World J Psychiatr. 2014;4:133. doi: 10.5498/wjp.v4.i4.133. [DOI ] [PMC free article] [PubMed] [Google Scholar ]

98. ••Anglin DM, Ereshefsky S, Klaunig MJ, Bridgwater MA, Niendam TA, Ellman LM, DeVylder J, Thayer G, Bolden K, Musket CW, Grattan RE, Lincoln SH, Schiffman J, Lipner E, Bachman P, Corcoran CM, Mota NB, van der Ven E. From womb to neighborhood: a racial analysis of social determinants of psychosis in the United States. Am J Psychiatry 2021:178:599–610. 10.1176/appi.ajp.2020.20071091. **Intriguing analysis that may explain longstanding finding of higher prevalence of psychosis in African-Americans through the lens of cumulative traumatic impact of racism and structural inequalities and epigenetic mechanisms.** [DOI ] [PMC free article] [PubMed]

99. Stephens RL, Holden EW, Hernandez M. System-of-care practice review scores as predictors of behavioral symptomatology and functional impairment. J Child Fam Stud. 2004;13:179–191. doi: 10.1023/62-1024/04/0600-0179/0. [DOI ] [Google Scholar ]

100. U.S. Department of Health and Human Services. Substance abuse and mental health services administration center for mental health services. Child Adolescent and Family Branch. The Comprehensive Community Mental Health Services for Children with Serious Emotional Disturbances Program, Report to Congress. 2015. Publication No. PEP16-CMHI2015.

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# Not in My Back Yard: A Comparative Analysis of Crime Around Publicly Funded Drug Treatment Centers, Liquor Stores, Convenience Stores, and Corner Stores in One Mid-Atlantic City

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## Abstract

**Objective:** This research examined whether publicly funded drug treatment centers (DTCs) were associated with violent crime in excess of the violence happening around other commercial businesses.

**Method:** Violent crime data and locations of community entities were geocoded and mapped. DTCs and other retail outlets were matched based on a Neighborhood Disadvantage score at the census tract level. Street network buffers ranging from 100 to 1,400 feet were placed around each location. Negative binomial regression models were used to estimate the relationship between the count of violent crimes and the distance from each business type.

**Results:** Compared with the mean count of violent crime around drug treatment centers, the mean count of violent crime (M = 2.87) was significantly higher around liquor stores (M = 3.98; t test; $p < .01$) and corner stores (M = 3.78; t test; $p < .01$), and there was no statistically significant difference between the count around convenience stores (M = 2.65; t test; $p = .32$). In the adjusted negative binomial regression models, there was a negative and significant relationship between the count of violent crime and the distance from drug treatment centers ($\beta = -.069$, $p < .01$), liquor stores ($\beta = -.081$, $p < .01$), corner stores ($\beta = -.116$, $p < .01$), and convenience stores ($\beta = -.154$, $p < .01$).

**Conclusions:** Violent crime associated with drug treatment centers is similar to that associated with liquor stores and is less frequent than that associated with convenience stores and corner stores. 