University of Nevada, Reno

Adverse Childhood Experiences and Behavioral Health Outcomes Among Youth in Nevada

May 3, 2022

Kristen Clements-Nolle, PhD, MPH

What are ACEs?

Adverse childhood experiences (ACEs) are stressful or traumatic experiences, including abuse, neglect and a range of household dysfunction such as parental substance abuse, mental health problems, divorce, parental battery, and incarceration.[1]

- CDC/Kaiser ACE Study

Adverse Childhood Experiences International Questionnaire (ACE-IQ)

28 January 2020 | Publication

Overview

Adverse Childhood Experiences (ACE) refer to some of the most intensive and frequently occurring sources of stress that children may suffer early in life. Such experiences include multiple types of abuse; neglect; violence between parents or caregivers; other kinds of serious household dysfunction such as alcohol and substance abuse; and peer, community and collective violence.

It has been shown that considerable and prolonged stress in childhood has life-long consequences for a person's health and well-being. It can disrupt early brain development and compromise functioning of the nervous and immune systems. In addition because of the behaviours adopted by some people who have faced ACEs, such stress can lead to serious problems such as alcoholism, depression, eating disorders, unsafe sex, HIV/AIDS, heart disease, cancer, and other chronic diseases.

The ACE International Questionnaire (ACE-IQ) is intended to measure ACEs in all countries, and the association between them and risk behaviours in later life. ACE-IQ is designed for administration to people aged 18 years and older. Questions cover family dysfunction; physical, sexual and emotional abuse and neglect by parents or caregivers; peer violence; witnessing community violence, and exposure to collective violence.

PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

The Lifelong Effects of Early Childhood Adversity and Toxic Stress

Jack P. Shonkoff, 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

Pediatrics 2012;129;e232; originally published online December 26, 2011;
DOI: 10.1542/peds.2011-2663

Toxic Stress

CENTER for YOUTH WELLNESS

Toxic Stress Research

Exposure to intense, frequent, or sustained stress without the buffering care of a supportive adult, can change children's brains and bodies, including disrupting learning, behavior, immunity, growth, hormonal systems, immune systems, and even the way DNA is read and transcribed.

NERVOUS SYSTEM

Disruption to the developing brain, including changes to the hippocampus, prefrontal cortex and amygdala, may lead to an increase in risk of cognitive impairment, attention deficits, learning disabilities, hyperactivity, self-regulation, memory and attention, and anxiety.

CARDIOVASCULAR SYSTEM

Toxic stress can increase a person's risk of developing high blood pressure, elevating levels of inflammation that can damage the arteries. These conditions can lead to heart disease, stroke and other serious health issues later in life.

IMMUNE SYSTEM

Higher risk of infection and autoimmune disease may occur due to chronic inflammation and other factors, which cause changes in the body's natural immune defense responses.

ENDOCRINE SYSTEM

Toxic stress can impact growth and development. It can also lead to obesity and changes in the timing of puberty, as well as other issues.

The effect of multiple adverse childhood experiences on health: a systematic review and meta-analysis

Karen Hughes, Mark A Bellis, Katherine A Hardcastle, Dinesh Sethi, Alexander Butchart, Christopher Mikton, Lisa Jones, Michael P Dunne

Summary

Background A growing body of research identifies the harmful effects that adverse childhood experiences (ACEs; occurring during childhood or adolescence; eg, child maltreatment or exposure to domestic violence) have on health throughout life. Studies have quantified such effects for individual ACEs. However, ACEs frequently co-occur and no synthesis of findings from studies measuring the effect of multiple ACE types has been done.

Methods In this systematic review and meta-analysis, we searched five electronic databases for cross-sectional, case-control, or cohort studies published up to May 6, 2016, reporting risks of health outcomes, consisting of substance use, sexual health, mental health, weight and physical exercise, violence, and physical health status and conditions, associated with multiple ACEs. We selected articles that presented risk estimates for individuals with at least four ACEs compared with those with none for outcomes with sufficient data for meta-analysis (at least four populations). Included studies also focused on adults aged at least 18 years with a sample size of at least 100. We excluded studies based on high-risk or clinical populations. We extracted data from published reports. We calculated pooled odds ratios (ORs) using a random-effects model.

Findings Of 11 621 references identified by the search, 37 included studies provided risk estimates for 23 outcomes, with a total of 253 719 participants. Individuals with at least four ACEs were at increased risk of all health outcomes compared with individuals with no ACEs. Associations were weak or modest for physical inactivity, overweight or obesity, and diabetes (ORs of less than two); moderate for smoking, heavy alcohol use, poor self-rated health, cancer, heart disease, and respiratory disease (ORs of two to three), strong for sexual risk taking, mental ill health, and problematic alcohol use (ORs of more than three to six), and strongest for problematic drug use and interpersonal and self-directed violence (ORs of more than seven). We identified considerable heterogeneity (I^2 of >75%) between estimates for almost half of the outcomes.

Interpretation To have multiple ACEs is a major risk factor for many health conditions. The outcomes most strongly associated with multiple ACEs represent ACE risks for the next generation (eg, violence, mental illness, and substance use). To sustain improvements in public health requires a shift in focus to include prevention of ACEs, resilience building, and ACE-informed service provision. The Sustainable Development Goals provide a global platform to reduce ACEs and their life-course effect on health.

Lancet Public Health 2017; 2: e356–66

See Comment page e342

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But… what are the outcomes during adolescence

and….

what can we do to intervene early?

Nevada Youth Risk Behavior Survey (YRBS) Acknowledgements

- NV Department of Education
- NV Division of Public and Behavioral Health
- Nevada Statewide Coalition Partnership
- School district superintendents and district staff
- School administrators and teachers
- Students and their families

2019 Nevada YRBS

- **CDC funds a state-level YRBS**
  - 36 high schools
- **NV Division of Public and Behavioral Health contracts with UNR to sample all other regular public, charter, and alternative schools**
  - 99 high schools and 113 middle schools
- **Active or passive parental permission. This changed to passive permission statewide in 2021 (NV SB69)**
- **Cluster random sampling design**
- **Data are weighted at state and regional levels**

YRBS Sampling, 2019

Region	School District	# Middle Schools	# High Schools	Coalitions
1	Carson City	2	2	Partnership Carson City
2	Douglas County	2	3	Partnership of Community Resources
3	Elko County White Pine County Eureka County	10	10	Pace Coalition
4	Churchill County Humboldt County Pershing County Lander County	5	5	Churchill Community Coalition Frontier Community Coalition
5	Lyon County Mineral County Storey County	7	8	Healthy Communities Coalition
6	Nye County Lincoln County	10	7	Nye Communities Coalition
7	Washoe County	18	17	Join Together Northern Nevada
8	Clark County	63	49	Care Coalition PACT Coalition
	TOTAL	113 Schools 5,341 students	99 Schools 4,980 students	

NV State-Added ACE Module

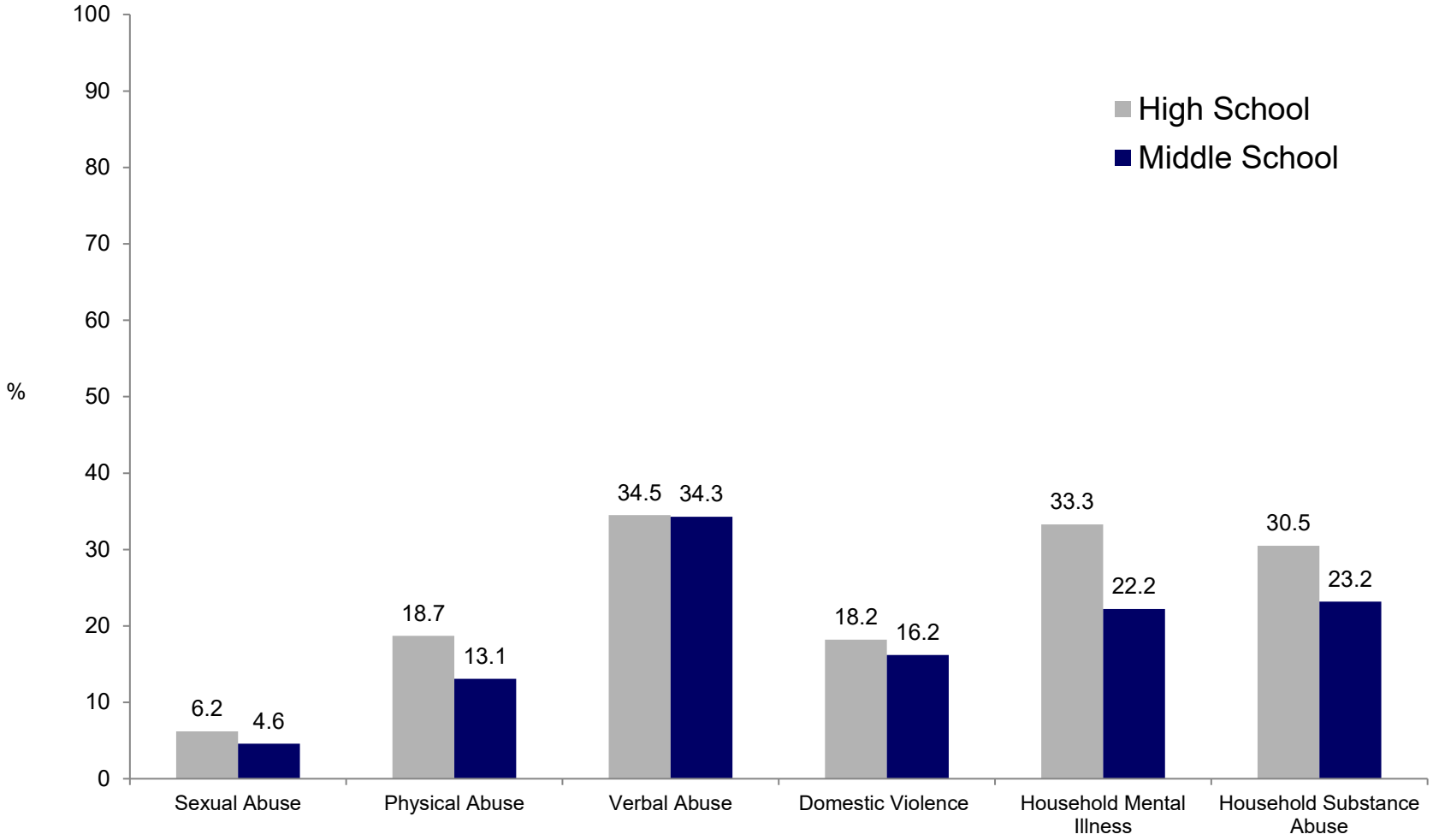
- The High School Youth Risk Behavior Survey (YRBS) included a modified ACE module in 2015, 2017, 2019, 2021*
- The Middle School YRBS included a modified ACE module in 2017, 2019, 2021*

*2021 NV YRBS ACE Modules

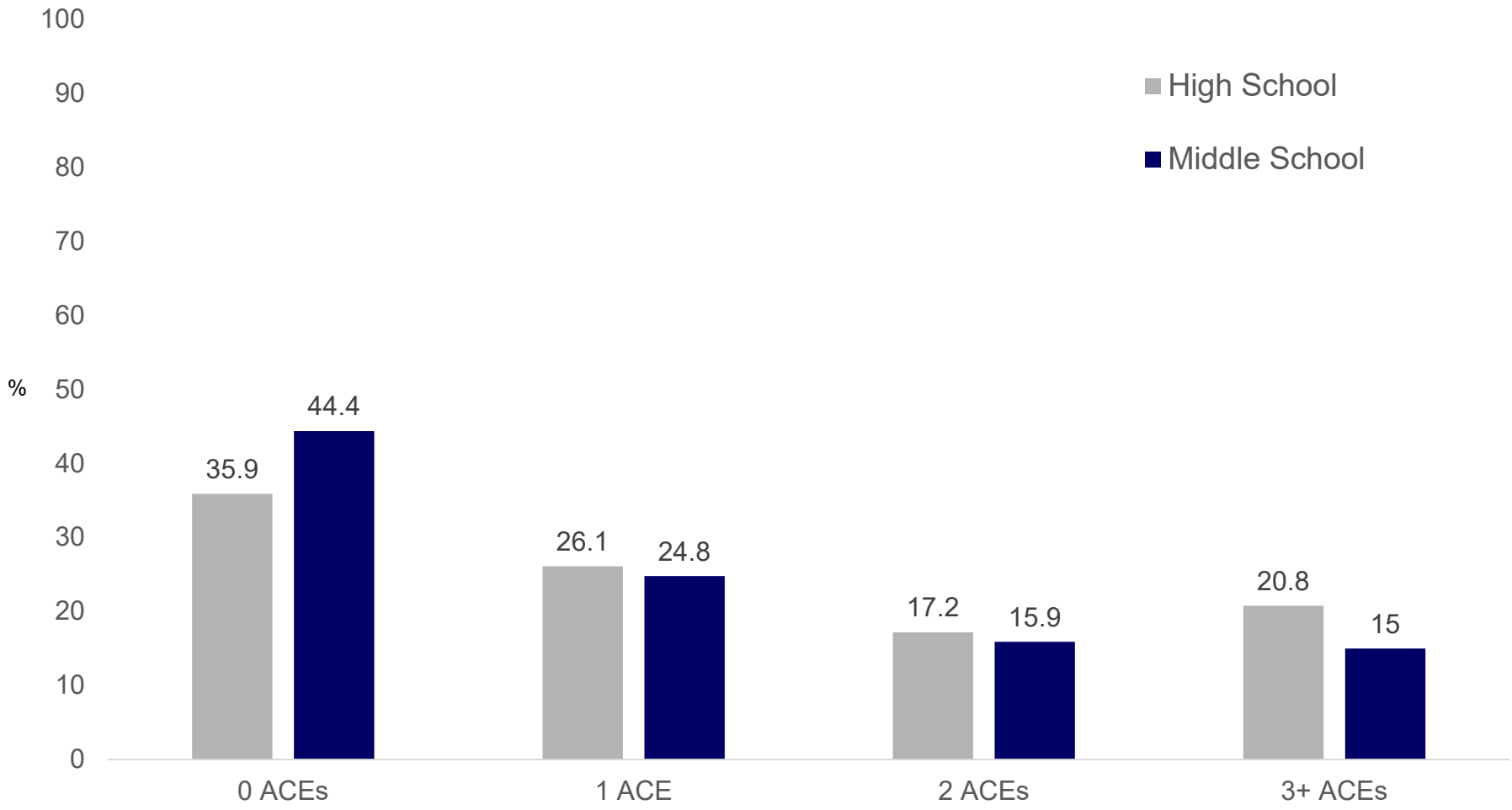
- **High School**
  - Adopted the CDC ACE module to be able to compare nationally
    - Added neighborhood violence, neglect, and parent incarceration.
    - Housing stability added could be considered an ACE.
  - Will not be able to assess changes over time prior to 2021.

- **Middle School**
  - Continued with NV ACE module to be able to compare over time
    - Added parent incarceration
    - Housing stability added and could be considered an ACE.

Adverse Childhood Experiences (ACEs), 2019 Nevada YRBS



Total Number of ACEs
2019 Nevada YRBS

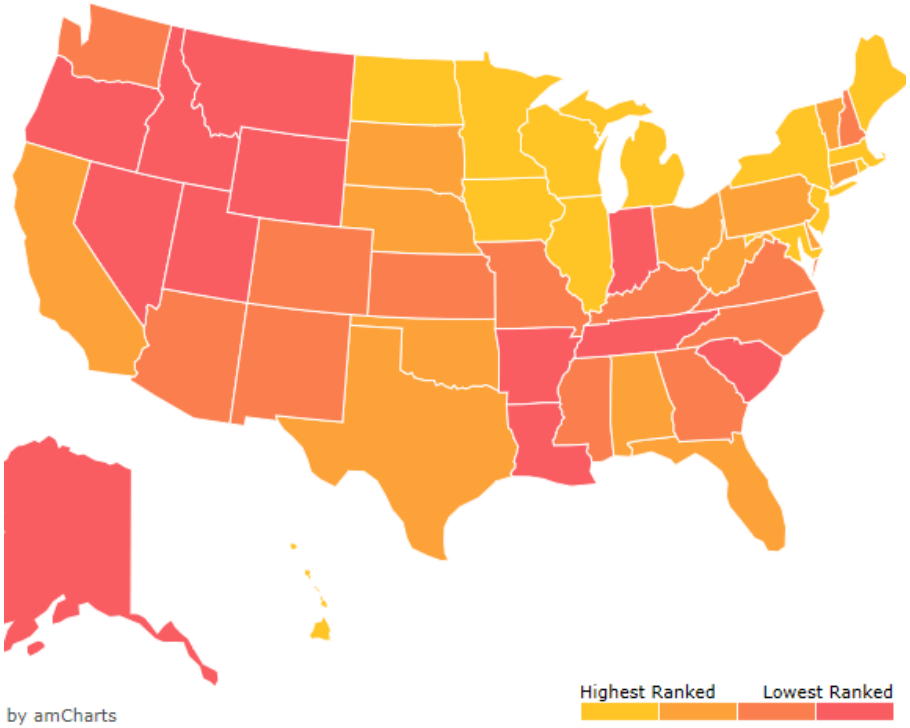


Demographic Differences in ACE Scores, 2019 YRBS

- **ACE scores were significantly higher among:**
  - Female students
  - Older students
  - Sexual and gender minority students (HS)*
  - Students living in military households
  - Students who qualified for free/reduced lunch

ACEs and Emotional Health

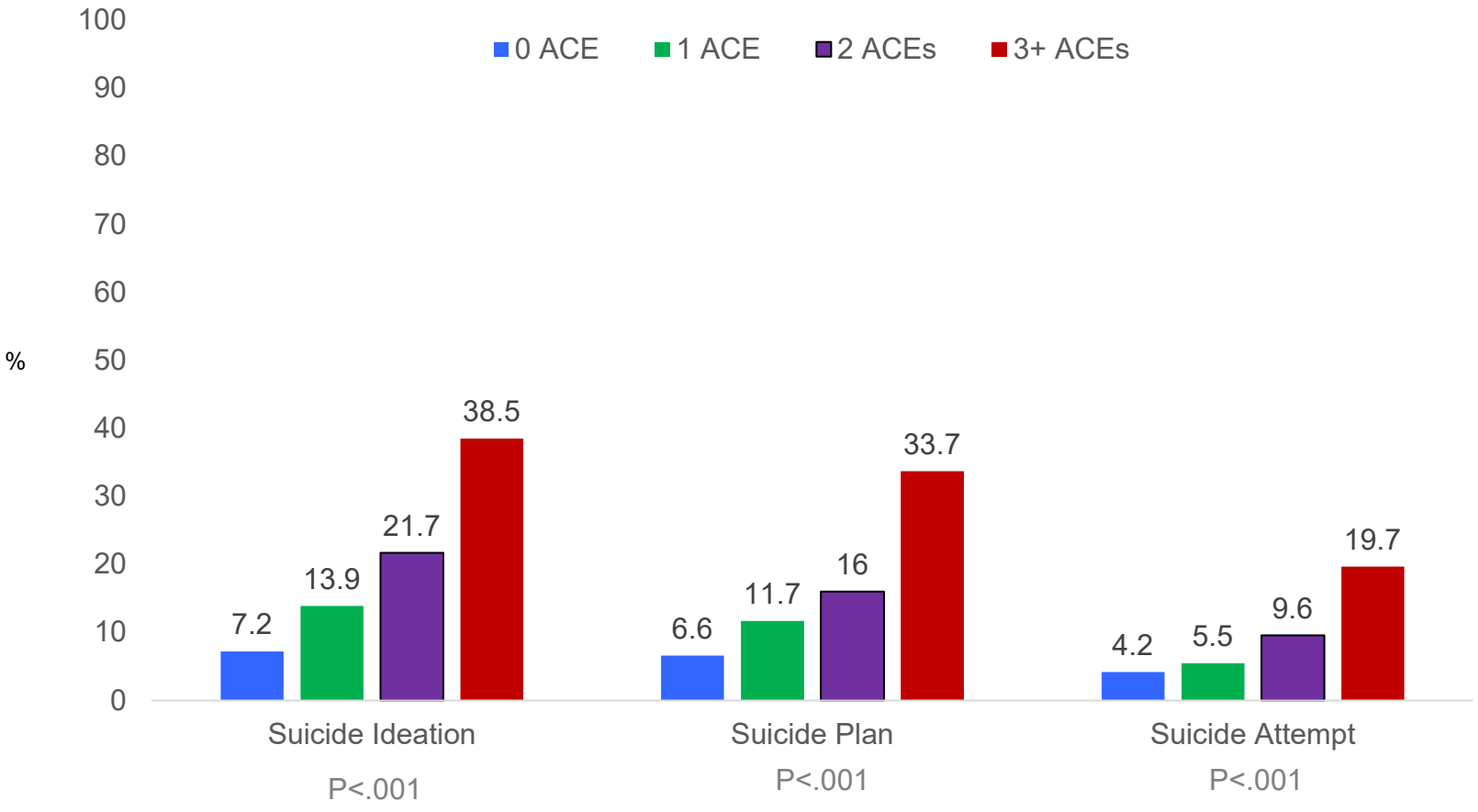
Youth Nevada Mental Health Ranking 2022



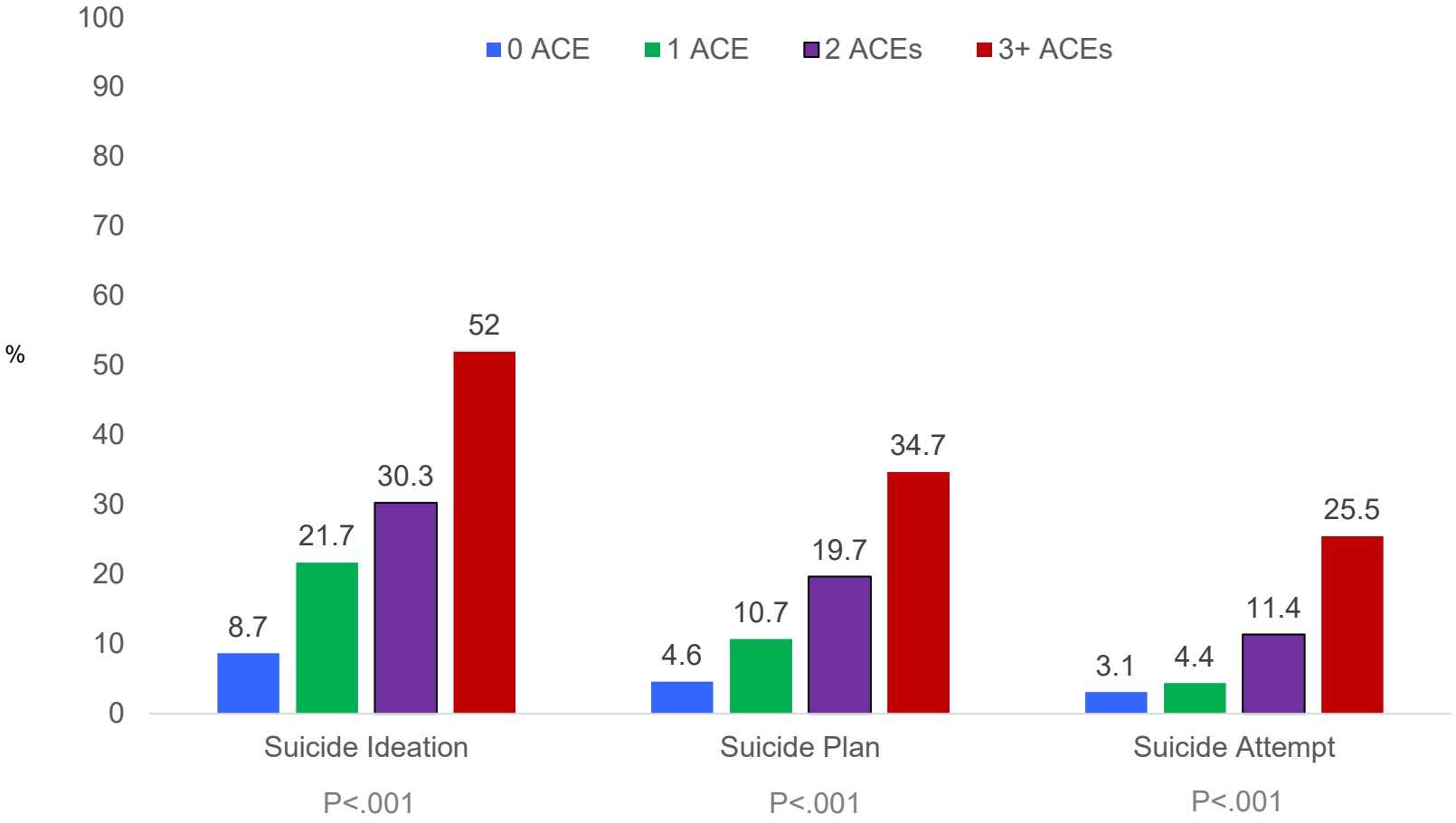
36	California
37	Nebraska
38	Montana
39	Washington
40	Tennessee
41	Texas
42	North Carolina
43	Wyoming
44	West Virginia
45	Oregon
46	Alaska
47	New Mexico
48	Arkansas
49	Arizona
50	Idaho
51	Nevada

MHA
Mental Health America

ACEs & Suicide Behaviors (past 12 months) 2019 High School YRBS



ACEs & Suicide Behaviors (past 12 months) 2019 Middle School YRBS



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Original article

Sexual Identity, Adverse Childhood Experiences, and Suicidal Behaviors

Kristen Clements-Nolle, Ph.D., M.P.H. [a,*], Taylor Lensch, M.P.H. [a], Amberlee Baxa, M.P.H. [b], Christopher Gay, M.P.H. [a], Sandra Larson, M.P.H. [b], and Wei Yang, Ph.D. [a]

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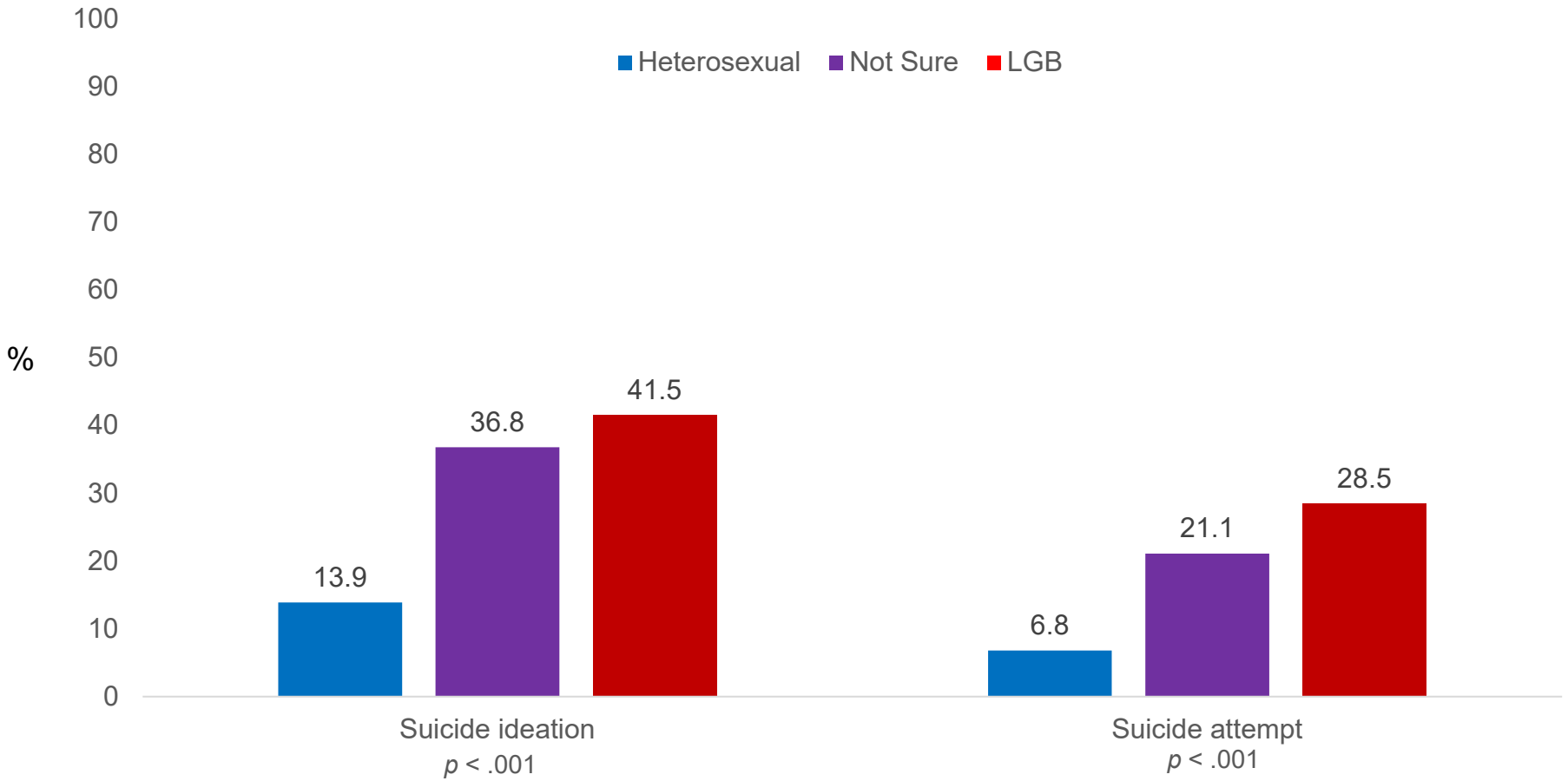
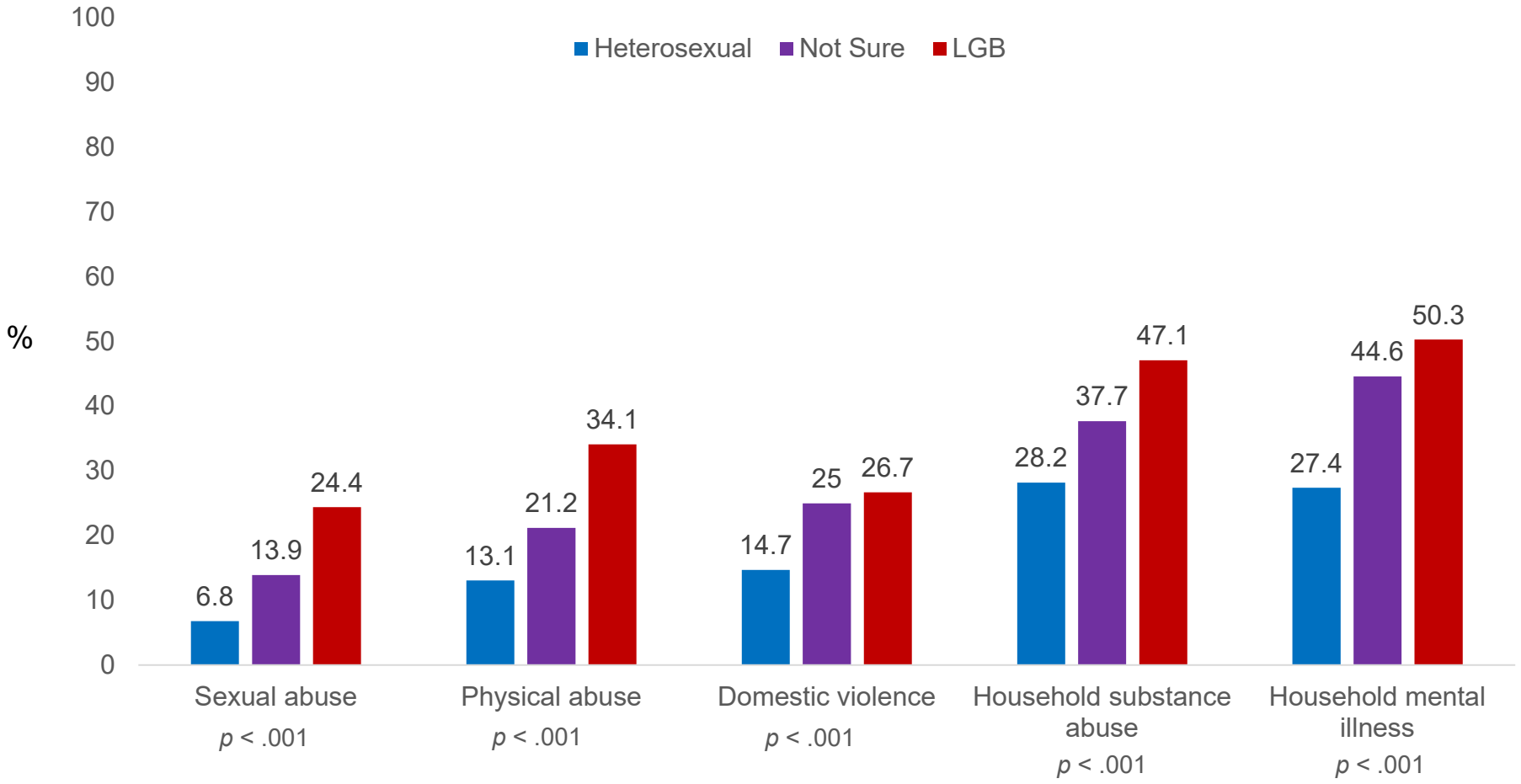
Suicide Risk by Sexual Identity, NV High School YRBS



ACEs by Sexual Identity, NV High School YRBS



Interacting Influence of ACEs and Sexual Identity: Suicide Ideation, NV High School YRBS

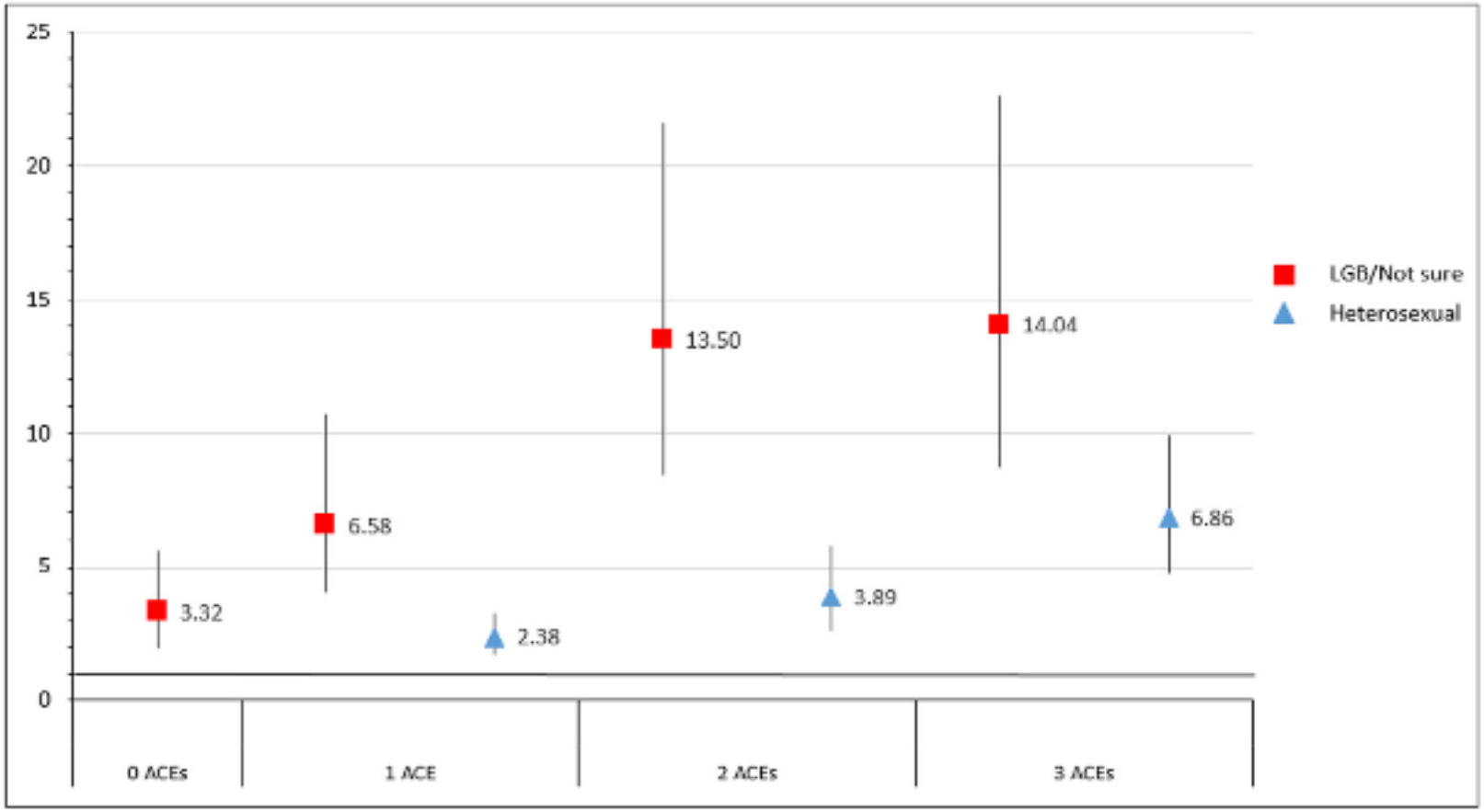
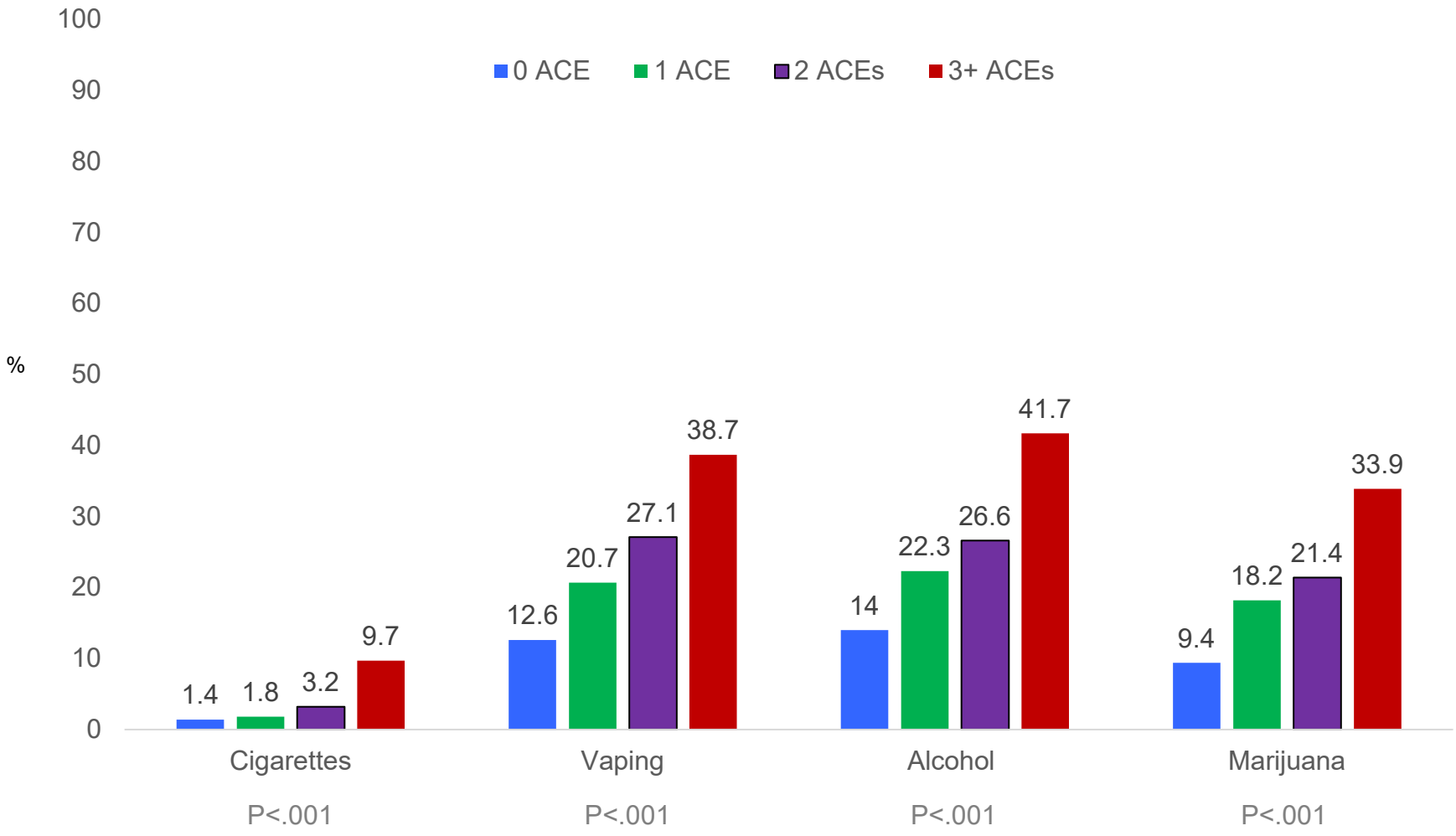


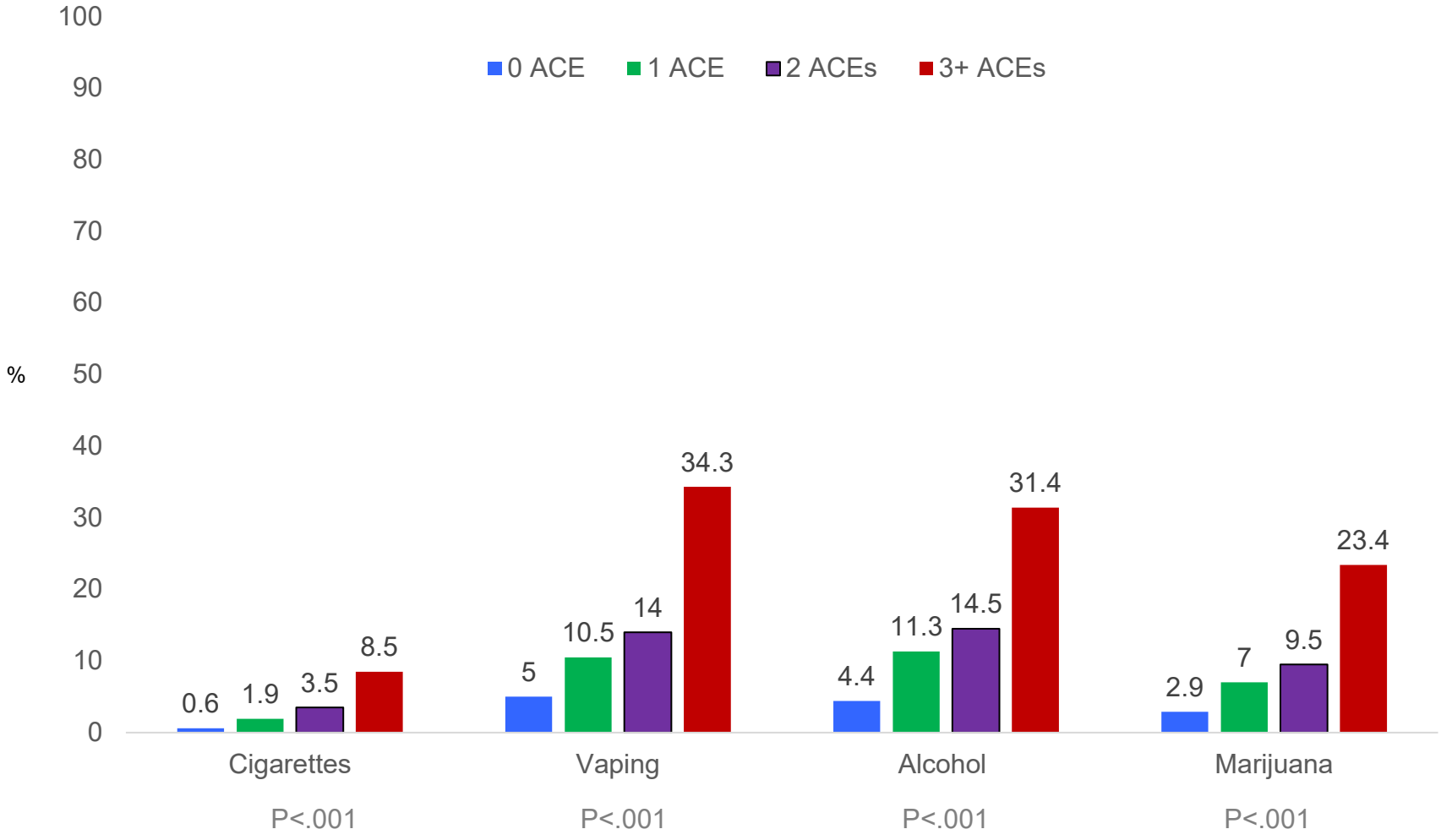
Figure 1. Interacting influence of sexual identity and ACEs on suicide ideation—2015. Heterosexual/0 ACE is the referent group. AORs and 95% CIs plotted. The model was adjusted for sex, age, race/ethnicity, county of residence, free or reduced lunch qualification, parent permission type, recent alcohol use, and recent marijuana use. No significant interaction effects between sexual identity and ACEs were observed.

ACEs and Substance Use

ACEs and Substance Use (past 30 days), 2019 High School YRBS

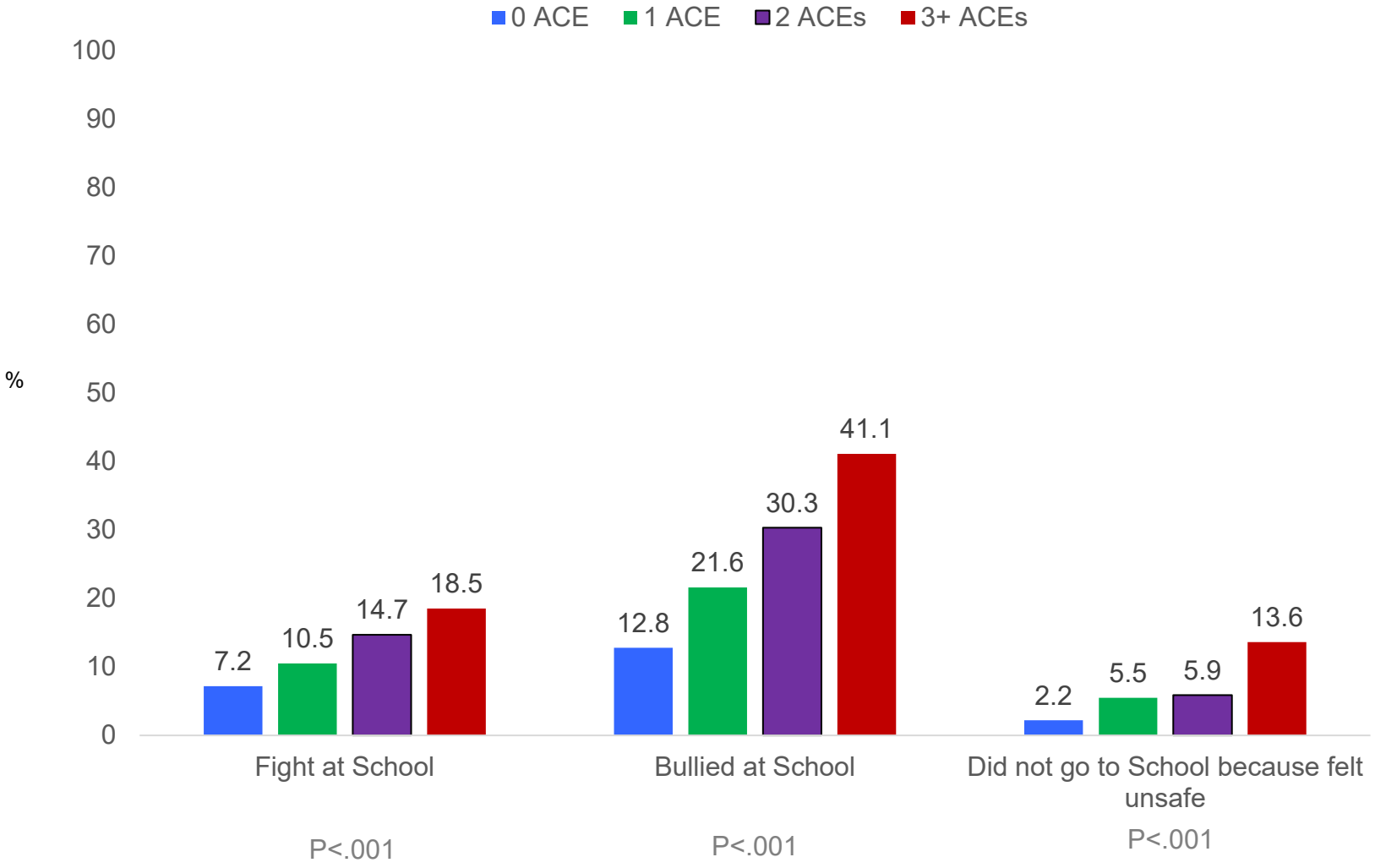


ACEs and Substance Use (past 30 days), 2019 Middle School YRBS



Bullying, Violence & Victimization

Past Year Violence and Victimization at School, 2019 NV Middle School YRBS



But Many Youth are Resilient!

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Official Selection Seattle International Film Festival 2016

CLEVELAND INTERNATIONAL FILM FESTIVAL OFFICIAL SELECTION

OFFICIAL SELECTION mspIFF 2016

"...AN ENGROSSING STUDY OF HOW ADVERSE CHILDHOOD EXPERIENCES (OR ACES) CAN BE LINKED TO DESTRUCTIVE BEHAVIOR AND MEDICAL DISEASES"

–Matt Fagerholm ROGEREBERT.COM

Childhood trauma is a strong risk factor for multiple behavioral health outcomes

Early screening and intervention, including building resiliency and youth assets may improve health outcomes across the lifespan

American Academy of Pediatrics
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Addressing Adverse Childhood Experiences and Other Types of Trauma in the Primary Care Setting

For many pediatricians, addressing exposure to traumatic events that could cause toxic stress in their patients is seen as difficult for a number of reasons, including lack of time, complexity of the topics, limited referral resources, and discomfort. At the same time, the study conducted by the Centers for Disease Control and Prevention and Kaiser Permanente on adverse childhood experiences (ACEs)[1] emphasized the effect of trauma on the developing brain and health across the life span—a natural concern for all pediatricians. Importantly, ACEs described in the study are present in every socioeconomic level and can be devastating to a child's physical, mental, and emotional health and well-being into adulthood. This document provides initial suggestions for pediatricians to consider when addressing ACEs in their practices.

Center for Youth Wellness ACEQ & User Guide

CYW ACE-Q and User Guide

The ACE-Q and User Guide have been made available to health care professionals for the purpose of information sharing. The ACE Questionnaire ("CYW ACE-Q") is free and is intended to be used solely for informational or educational purposes. The ACE Questionnaire ("CYW ACE-Q") is not a validated diagnostic tool, and is not intended to be used in the diagnosis, cure, mitigation, treatment or prevention of a disease or other condition.

Please provide the following information to gain access to the CYW ACE-Q and User Guide

* Required

Contact Information

THE COMMUNITY RESILIENCE INITIATIVE- PART 2

2. Schools. New Haven Public Schools provide a unique, nearly ideal venue through which ACEs can be addressed. CRI proposes:

a. ACEs screening for every public school student. Every child, every year, will be screened for ACEs and behavioral health problems, much like they are screened for immunization, vision, or reading, through a mix of school staff, SBHCs and private providers. The screening results will be properly reviewed, and appropriate referrals will be made to school social workers/psychologists and/or school based health clinics and/or outside agencies. If a child reports actual abuse or neglect, the principal and staff will meet with the child; if abuse is confirmed, appropriate reports and referrals will be made including to DCF, Yale Center for Children Exposed to Violence, the Post Traumatic Stress Center, and Clifford Beers Clinic.

b. ALIVE/PBIS or other robust school wide early intervention. School administrators will continue to grow the partnership with the Foundation for the Arts and Trauma through the Boost! Initiative. This partnership has spawned a program called ALIVE (Animating Learning by Integrating and Validating Experience) which focuses on early intervention and prevention by reducing chronic stress in children K-12. Currently in nine schools, Boost will ultimately be in all New Haven schools. ALIVE has proven particularly impactful in reducing behavioral disruptions in school. Barnard Environmental Magnet School has fully implemented the ALIVE program through Boost. Referrals to the office have decreased from over 700 prior to the ALIVE program coming in 2011 to under 70 in 2012, a remarkable change due to ALIVE, PBIS and other efforts at the school. In addition PBIS and de-escalation trainings will be expanded to more schools, and all school personnel will be trained in trauma and its effects in the classroom, through a mix of school staff, SBHCs and private providers. All staff and personnel will be trained in trauma-informed practices, and all discipline policies will be designed with trauma-informed care.

c. CBITS and vigorous referral system. In addition to the ALIVE program, Cognitive Behavioral Intervention for Trauma in School (CBITS) will be available for students in grades 5-12. CBITS is a school-based, group and individual intervention. It is designed to reduce symptoms of post-traumatic stress disorder (PTSD), depression, and behavioral problems, and to improve functioning, grades and attendance, peer and parent support, and coping

http://www.cityofnewhaven.com/NewsYouCanUse/readmore.asp?ID=%7bF881F228-240B-4FA5-897A-81FA34442FF1%7d

Cognitive-Behavioral Intervention for Trauma in Schools (CBITS)

A Mental Health Intervention for Schoolchildren Exposed to Violence

A Randomized Controlled Trial

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Marc N. Elliott, PhD
Arlene Fink, PhD

Context No randomized controlled studies have been conducted to date on the effectiveness of psychological interventions for children with symptoms of posttraumatic stress disorder (PTSD) that has resulted from personally witnessing or being personally exposed to violence.

Objective To evaluate the effectiveness of a collaboratively designed school-based intervention for reducing children's symptoms of PTSD and depression that has resulted from exposure to violence.

Design A randomized controlled trial conducted during the 2001-2002 academic year.

Setting and Participants Sixth-grade students at 2 large middle schools in Los Angeles who reported exposure to violence and had clinical levels of symptoms of PTSD.

Intervention Students were randomly assigned to a 10-session standardized cognitive-behavioral therapy (the Cognitive-Behavioral Intervention for Trauma in Schools) early intervention group (n=61) or to a wait-list delayed intervention comparison group (n=65) conducted by trained school mental health clinicians.

Main Outcome Measures Students were assessed before the intervention and 3 months after the intervention on measures assessing child-reported symptoms of PTSD (Child PTSD Symptom Scale; range, 0-51 points) and depression (Child Depression Inventory; range, 0-52 points), parent-reported psychosocial dysfunction (Pediatric Symptom Checklist; range, 0-70 points), and teacher-reported classroom problems using the Teacher-Child Rating Scale (acting out, shyness/anxiousness, and learning problems; range of subscales, 6-30 points).

Results Compared with the wait-list delayed intervention group (no intervention), after 3 months of intervention students who were randomly assigned to the early intervention group had significantly lower scores on symptoms of PTSD (8.9 vs 15.5, adjusted mean difference, −7.0; 95% confidence interval [CI], −10.8 to −3.2), depression (9.4 vs 12.7, adjusted mean difference, −3.4; 95% CI, −6.5 to −0.4), and psychosocial dysfunction (12.5 vs 16.5, adjusted mean difference, −6.4; 95% CI, −10.4 to −2.3). Adjusted mean differences between the 2 groups at 3 months did not show significant differences for teacher-reported classroom problems in acting out (−1.0; 95% CI, −2.5 to 0.5), shyness/anxiousness (0.1; 95% CI, −1.5 to 1.7), and learning (−1.1, 95% CI, −2.9 to 0.8). At 6 months, after both groups had received the intervention, the differences between the 2 groups were not significantly different for symptoms of PTSD and depression; showed similar ratings for psychosocial function; and teachers did not report significant differences in classroom behaviors.

Conclusion A standardized 10-session cognitive-behavioral group intervention can significantly decrease symptoms of PTSD and depression in students who are exposed to violence and can be effectively delivered on school campuses by trained school-based mental health clinicians.

JAMA. 2003;290:603-611 www.jama.com

IN THE LAST DECADE, THERE HAS BEEN heightened awareness of the extent to which children personally witness or experience violence.[1-3] Public health officials have responded by identifying violence as one of the most significant US public health issues.[4-6] Large numbers of US children experience such violence, and an even greater number may experience symptoms of distress after personally witnessing violence directed at others.[2,7-9] For many children, personally experiencing or directly witnessing multiple incidents of violence is the norm.[3,10,11] Violence affects all racial, ethnic, and socioeconomic groups, but its burden falls disproportionately on urban,[5,12] poor, and minority populations.[13,14]

Several studies have found that the majority of children exposed to violence, defined as personally witnessing or directly experiencing a violent event, display symptoms of posttraumatic stress disorder (PTSD),[15,16] and a substantial minority develop clinically significant PTSD.[17-19] However, the harmful effects of violence extend beyond symptoms of PTSD. Exposure to violence is associated with depression[20] and behav-

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Original article

Adverse Childhood Experiences and Suicidal Behaviors Among Youth: The Buffering Influence of Family Communication and School Connectedness

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Addictive Behaviors

Volume 130, July 2022, 107280

Adverse childhood experiences and past 30-day cannabis use among middle and high school students: The protective influence of families and schools

Kristen D. Clements-Nolle [a], Taylor Lensch [a], Cara S. Drake [b], Jennifer L. Pearson [b]

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https://www.unr.edu/public-health/research-activities/nevada-youth-risk-behavior-survey

Kristen Clements-Nolle: clements@unr.edu