Adverse Childhood Experiences (ACEs), Substance Use, & Suicide: Opportunities for Public Health Prevention

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CDC Injury Center Strategic Priorities

- Adverse Childhood Experiences (ACEs)
- Opioid Overdose
- Suicide
Defining ACEs and Health and Social Impacts
Adverse Childhood Experiences (ACEs)

ACEs are experiences that may be traumatic to children and youth during the first 18 years of life such as experiencing violence or other types of emotionally disturbing exposures in their homes and communities.

- Abuse
  - Physical
  - Emotional
  - Sexual
- Neglect
  - Physical
  - Emotional
- Household Challenges
  - Mental Illness
  - Incarcerated Relative
  - Mother treated violently
  - Substance Abuse
  - Divorce

ACEs not included in the traditional measure:
- Bullying
- Teen dating violence
- Peer to peer violence
- Witness violence in community or school
- Homelessness
- Death of a parent
ACEs are Common in the U.S.

1 in 6 adults experienced four or more types of ACEs.

At least 5 of the top 10 leading causes of death are associated with ACEs.

Preventing ACEs could reduce the number of adults with depression by as much as 44%.

Source: CDC Vital Signs 2019 [https://www.cdc.gov/vitalsigns/aces/index.html]
The Pair of ACEs

**Adverse Childhood Experiences**

- Maternal Depression
- Physical & Emotional Neglect
- Emotional & Sexual Abuse
- Divorce
- Substance Abuse
- Mental Illness
- Domestic Violence
- Incarceration
- Homelessness

**Adverse Community Environments**

- Poverty
- Violence
- Discrimination
- Poor Housing Quality & Affordability
- Community Disruption
- Lack of Opportunity, Economic Mobility & Social Capital

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A Lasting Impact

ADVERSE CHILDHOOD EXPERIENCES

- Traumatic Brain Injury
- Fractures
- Burns
- Depression
- Anxiety
- Suicide
- Unintended Pregnancy
- Pregnancy Complications
- Fetal death
- HIV
- STDs
- Cancer
- Diabetes
- HIV
- STDs
- Traumatic Brain Injury
- Fractures
- Burns
- Unintended Pregnancy
- Pregnancy Complications
- Fetal death
- Depression
- Anxiety
- Suicide
- Alcohol & Drug Abuse
- Unsafe Sex
- Opioid Misuse
- Cancer
- Diabetes
- HIV
- STDs
- Traumatic Brain Injury
- Fractures
- Burns
- Unintended Pregnancy
- Pregnancy Complications
- Fetal death
- Depression
- Anxiety
- Suicide

Relationship of ACE Score & Ever Having a Drug Problem

SOURCE: Dube et al. 2003 - Pediatrics

ACEs and Toxic Stress
ACEs Impact Across the Lifespan
ACEs and Connection to Substance Use and Suicide
ACEs and Substance Use From Original ACEs Study

Number of Categories of ACEs

Compared to NO ACE Exposure

<table>
<thead>
<tr>
<th>Condition</th>
<th>Adjusted Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Smoker</td>
<td>1.1, 1.5, 2.0, 2.2</td>
</tr>
<tr>
<td>Alcohol Use Disorder</td>
<td>2.0, 4.0, 4.9, 7.4</td>
</tr>
<tr>
<td>Ever Used Illicit Drugs</td>
<td>1.7, 2.9, 3.6, 4.7</td>
</tr>
<tr>
<td>Ever Injected Drugs</td>
<td>1.3, 3.8, 7.1, 10.3</td>
</tr>
</tbody>
</table>

## Misuse of Prescription Opioids and ACEs

Association between ACE exposure and opioid misuse without a prescription (Montana sample)

<table>
<thead>
<tr>
<th>ACE score (n)</th>
<th>Misuse: Without a prescription</th>
<th>OR (95% CI)</th>
<th>AOR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>Weighted % (95% CI)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 (3557)</td>
<td>34</td>
<td>0.96 (0.56, 1.35)</td>
<td>ref.</td>
</tr>
<tr>
<td>1–2 (3091)</td>
<td>90</td>
<td>3.90* (2.78, 5.03)</td>
<td>4.19** (2.51, 7.00)</td>
</tr>
<tr>
<td>3 or more (2043)</td>
<td>127</td>
<td>8.06* (6.20, 9.93)</td>
<td>9.02** (5.54, 14.66)</td>
</tr>
</tbody>
</table>

*OR odds ratio; AOR adjusted odds ratio; AOR model adjusted for age group, race/ethnicity, and sex

*p < 0.05; **p < 0.001

Association between ACE exposure and use of prescription opioids not prescribed to you or for the feeling it caused (Florida sample)

<table>
<thead>
<tr>
<th>ACE score (n)</th>
<th>Misuse: Not prescribed or for the experience/feeling</th>
<th>OR (95% CI)</th>
<th>AOR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>% (95% CI)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 (14,044)</td>
<td>173</td>
<td>1.57 1.04, 2.10)</td>
<td>Ref.</td>
</tr>
<tr>
<td>1–2 (10,121)</td>
<td>196</td>
<td>2.59 (1.79, 3.38)</td>
<td>1.67* (1.06, 2.64)</td>
</tr>
<tr>
<td>3 or more (3189)</td>
<td>112</td>
<td>4.79 (2.59, 7.00)</td>
<td>3.12** (1.74, 5.60)</td>
</tr>
</tbody>
</table>

*OR odds ratio; AOR adjusted odds ratio; AOR model adjusted for age group, race/ethnicity, and sex

*p < 0.05; **p < 0.01; ***p < 0.001

Source: Merrick et al, Adverse Childhood Experiences Increase Risk for Prescription Opioid Misuse Journal of Primary Prevention, 2020
ACEs and Suicide Attempts

Shared Protective Factors

➢ Resiliency
➢ Self-efficacy
➢ Spirituality
➢ Interpersonal skills, including social, emotional, and cognitive skills
➢ Treatment of underlying psychiatric disorders

➢ Attachment to family, school, and community
➢ Meaningful involvement in family, school, or community
➢ Safe, stable, nurturing relationships
➢ Positive behavior is recognized
➢ Norms in the family, school, and community that drug use, violence are not acceptable; help seeking is acceptable
➢ Opportunity for fulfilling extracurricular activities

Source: Adapted from Volkow et al., 2018, Prevention and Treatment of Opioid Misuse and Addiction. A Review. JAMA Psychiatry
Prevention Policy, Program, and Practice Strategies
The Power of Prevention

HEALTH CONDITIONS

Depressive Disorder: -44%
Chronic Obstructive Pulmonary Disease: -27%
Asthma: -24%
Kidney Disease: -16%
Stroke: -15%
Coronary Heart Disease: -13%
Cancer: -6%
Diabetes: -6%
Overweight/Obesity: -2%

HEALTH RISK BEHAVIORS

Current Smoking: -33%
Heavy Drinking: -24%

SOCIOECONOMIC CHALLENGES

Unemployment: -15%
Less than a High School Education: -5%
No Health Insurance: -4%

Source: CDC Vital Signs 2019
6 Strategies to Prevent ACEs
PREVENT ACEs before they happen, IDENTIFY those that have occurred, RESPOND in trauma-informed ways

- Strengthen economic supports for families
- Promote social norms that protect against violence and adversity
- Ensure a strong start for children
- Teach skills
- Connect youth to caring adults and activities
- Intervene to lessen immediate and long-term harms
Ongoing CDC Programmatic Work On ACEs

Preventing ACEs: Data to Action
- Identify, gather, and synthesize ACEs data
- Conduct innovative surveillance approaches
- Produce annual state data profiles & develop data dissemination plan

Surveillance
- Advances efforts of local health departments to address and prevent individual and community ACEs
- Includes a focus on prescription opioid misuse and illicit opioid use

Prevention Strategies
- Leverage multi-sector partnerships and resources
- Implement ACEs prevention approaches from ACEs prevention resource

Data to Action
- Assess current ACE prevention efforts, identify gaps, and develop recommendations for improvement
- Use assessments to refine the implementation of prevention strategies

Resilience Catalyst
- Advances efforts of local health departments to address and prevent individual and community ACEs
- Includes a focus on prescription opioid misuse and illicit opioid use

Current Sites
- Cambridge, Massachusetts
- Louisville, Kentucky
- Mesa County, Colorado
- Dallas, Texas
- Appalachian District, North Carolina

Essentials for Childhood
- Assuring safe, stable, nurturing relationships and environments for children
- Supplemental opioid funding

Current States
- California
- Colorado
- Kansas
- Massachusetts
- North Carolina
- Utah
- Washington
Veto Violence - ACE Online Training

Preventing Adverse Childhood Experiences

Introductory Training Modules

This training begins with two modules designed to increase awareness and understanding of ACEs and ways to prevent them. These modules are appropriate for anyone interested in learning about ACEs regardless of education level or profession.

Training for Specific Professions

Check back for additional modules for professionals working directly with and on behalf of kids and families. These modules will help you gain skills and knowledge about how you can prevent ACEs as a mental health care provider, medical provider, and more.

https://vetoviolence.cdc.gov/apps/aces-training
Helping States and Communities Take Advantage of the Best Available Evidence

https://www.cdc.gov/violenceprevention/pub/technical-packages.html
TOGETHER We Can Prevent ACEs

Developing New Partnerships and Working Across Sectors

Including:
Public Health, Government, Health Care Services, Social Services, Education, Businesses, Justice, Housing, Non-Governmental Organizations, Foundations, Media
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For more information, contact CDC
1-800-CDC-INFO (232-4636)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.