Adverse Childhood Experiences

ACE Scores—Addressing Childhood Trauma to Improve Behavioral and Physical Health
Learning Objectives

• Be able to articulate what the Adverse Childhood Experience (ACE) Study is.
• Identify the top 10 ACEs, as well as list 3-6 other possible ACEs
• Understand the cumulative impact of ACEs on long term behavioral and physical health
• Identify 3-6 possible impacts from ACE on physical health during the lifetime
• Identify 3-6 possible impacts from ACE on behavioral/mental health during lifetime
• Understand how to recognize ACEs in the populations served
• Exposure to 3-6 best practice models for addressing ACE
What is the ACE study?

- **Definition:** describes a traumatic experience in a person’s life occurring before the age of 18 that the person remembers as an adult. These traumas are categorized into 3 groups:
  - Abuse
  - Neglect
  - Family/household challenges
- **Study:**
  - Originally a large study conducted at Kaiser Permanente from 1995 to 1997 looking at over 17,000 adults
  - These adults completed a standardized medical evaluation at a large HMO which included looking at the categories of adverse experiences in their childhood
  - Conclusion of the study showed a strong relationship between exposure during childhood to the risk factors for leading causes of death in adults
  - Almost 2/3 of the participants reported at least 1 ACE
  - More than 1 in 5 reported 3+ ACEs
  - Repeated studies showed that there is a dose-dependent relationship between ACEs and negative health outcomes across a lifetime
What are the top 10 ACEs?

The prevalence estimates reported below are from the entire ACE Study sample (n=17,337).

<table>
<thead>
<tr>
<th>ACE Category</th>
<th>Women</th>
<th>Men</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent (N = 9,367)</td>
<td>Percent (N = 7,970)</td>
<td>Percent (N = 17,337)</td>
</tr>
<tr>
<td><strong>ABUSE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Abuse</td>
<td>13.1%</td>
<td>7.6%</td>
<td>10.6%</td>
</tr>
<tr>
<td>Physical Abuse</td>
<td>27%</td>
<td>29.9%</td>
<td>28.3%</td>
</tr>
<tr>
<td>Sexual Abuse</td>
<td>24.7%</td>
<td>16%</td>
<td>20.7%</td>
</tr>
<tr>
<td><strong>HOUSEHOLD CHALLENGES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother Treated Violently</td>
<td>13.7%</td>
<td>11.5%</td>
<td>12.7%</td>
</tr>
<tr>
<td>Household Substance Abuse</td>
<td>29.5%</td>
<td>23.8%</td>
<td>26.9%</td>
</tr>
<tr>
<td>Household Mental Illness</td>
<td>23.3%</td>
<td>14.8%</td>
<td>19.4%</td>
</tr>
<tr>
<td>Parental Separation or Divorce</td>
<td>24.5%</td>
<td>21.8%</td>
<td>23.3%</td>
</tr>
<tr>
<td>Incarcerated Household Member</td>
<td>5.2%</td>
<td>4.1%</td>
<td>4.7%</td>
</tr>
<tr>
<td><strong>NEGLECT</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Neglect(^3)</td>
<td>16.7%</td>
<td>12.4%</td>
<td>14.8%</td>
</tr>
<tr>
<td>Physical Neglect(^3)</td>
<td>9.2%</td>
<td>10.7%</td>
<td>9.9%</td>
</tr>
</tbody>
</table>

Note: \(^3\)Collected during Wave 2 only (N=8,629). Research papers that use Wave 1 and/or Wave 2 data may contain slightly different prevalence estimates.
Understand the Cumulative Impact of ACEs on Long-Term Behavioral and Physical Health

• Dose response outcome with ACE Score associated with 40+ outcomes to date.
• The higher the ACE score the worse the health outcome.
• Experiencing a repetitive or cumulative series of negative experiences, can maintain the brain in threat mode (hyperarousal) and cause physical and emotional problems.
• High doses of adversity exposure affect **Brain Development**, **Immune System**, **Hormonal System**, and even the way our DNA is Read and Transcribed.

• **20 year Difference in Life Expectancy** compared to those who are not exposed!
Understand the Cumulative Impact of ACEs on Long-Term Behavioral and Physical Health

- Children exposed to high doses of adversity are more prone to engage in **High Risk Behaviors**.
- Exposure effects areas of the nucleus accumbens (pleasure/reward center) that is implicated in **Substance Dependence**.
- ACE score of 4+ increases risk of **Depression** 4.5 X that of a person with a score of 0.
- ACE score of 4+ increases risk of **Suicidality** 12 X that of a person with a score of 0.
- Higher ACE scores are associated with **Smoking, Alcoholism, earlier initiation of Sexual Activity, and Drug Use**.
- High Adversity Exposure inhibits the Prefrontal Cortex (impulse control and executive functioning), which is a crucial area for **Learning**.
ACE on Physical Health During the Lifetime

- Triples the lifetime risk of **heart disease and lung cancer** for those exposed to high doses of adversity.
- ACE score 4+ has risk for **COPD** and risk for **Hepatitis** 2.5 X those with ACE score of 0.
- ACE of 7+ had a triple lifetime risk for **lung cancer** and 3.5 X the risk for **ischemic heart disease** which is the #1 killer in the United States.
- High ACE scores are associated with **STDs, bone fractures, strokes, diabetes, and obesity.**
- 4+ adverse childhood experiences had a 2-fold increased risk for **severe obesity** (Body Mass Index (kg/m²) ≥ 35).
How to Identify ACEs in our Population?

- Meet “Derrick”
  - Background
  - Primary care setting
  - Emergency Room setting
  - Inpatient Unit setting
  - Outpatient setting

<table>
<thead>
<tr>
<th>ABUSE</th>
<th>NEGLECT</th>
<th>HOUSEHOLD DYSFUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>Physical</td>
<td>Mental Illness</td>
</tr>
<tr>
<td>Emotional</td>
<td>Emotional</td>
<td>Mother treated violently</td>
</tr>
<tr>
<td>Sexual</td>
<td></td>
<td>Substance Abuse</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Divorce</td>
</tr>
</tbody>
</table>
Management of ACE

• Step 1: Assess Needs
• Step 2: Build Capacity
• Step 3: Plan
• Step 4: Implement
• Step 5: Evaluate
Management of ACE

• Step 1: Assess Needs

  • Identify problems and related behaviors
  
  • Assess risk factors and protective factors
  
  • Assess patient’s resources and readiness for change
Management of ACE

• Step 2: Build Capacity

  • Raise stakeholder awareness
  • Engage diverse stakeholders
  • Strengthen collaborative efforts
  • Prepare the prevention workforce
Management of ACE

• Step 3: Plan

  • Prioritize risk and protective factors
  
  • Select effective interventions to address priority factors
  
  • Build a logical model that links problems, factors, interventions, and outcomes
Management of ACE

- Step 4: Implement
  - Develop a clear action plan
  - Balance fidelity and adaptation
  - Establish implementation supports
Management of ACE

- Step 5: Evaluate
  - Evaluate process and outcomes
  - Communicating evaluation results
CDC recommends...

What can Be Done About ACES?

These wide-ranging health and social consequences underscore the importance of preventing ACES before they happen. Safe, stable, and nurturing relationships and environments (SSNREs) can have a positive impact on a broad range of health problems and on the development of skills that will help children reach their full potential. Strategies that address the needs of children and their families include:

- Voluntary home visiting programs can help families by strengthening maternal parenting practices, the quality of the child’s home environment, and children’s development. Example: Nurse-Family Partnership
- Home visiting to pregnant women and families with newborns
- Parenting training programs
- Intimate partner violence prevention
- Social support for parents
- Parent support programs for teens and teen pregnancy prevention programs
- Mental illness and substance abuse treatment
- High quality child care
- Sufficient income support for lower income families

https://www.cdc.gov/violenceprevention/images/acestudy/whatcanbedone.png
Thank you to the following NYCOMEC/ORMC psychiatry residents for their work on creating this powerpoint presentations.

- Dr. Stephanie Kuntz
- Dr. Kian-Taj Afrassiabian
- Dr. Suhal Shah
References

Adverse Childhood Experiences (ACEs). Retrieved from Centers for Disease Control and Prevention: https://www.cdc.gov/violenceprevention/acedstudy/index.html

