Adverse Childhood Experiences - ACEs

Rashmi Dayal, MD

April 5, 2019
Disclosures

I have no financial disclosures.
How Many of You:

- Have heard of ACEs and their impact on physical and mental health?
- Are aware of ACEs’ impact socially and globally?
- Have heard of resiliency?
Adverse Childhood Experiences Study - Retrospective Cohort Study with Longitudinal Arm

- Started at KP San Diego when high prevalence of childhood sexual abuse “discovered” among obese patients dropping out of weight loss program
- 10 “ACE” questions integrated into health history questionnaire
- Over 17,000 study participants, one of largest investigations ever done
- Assessed associations between childhood maltreatment and later-life health and well-being

Felitti et al, 1998

For more information, please refer to www.cdc.gov/ace
The Study revealed four main discoveries:

- ACEs are common: 67% of adults have at least one
- They correlate with adult onset of chronic disease, mental illness, violence and being a victim of violence
- They don’t occur alone: if you have one, there’s an 87% chance that you have two or more
- They’re cumulative: the more you have, the greater your risk for sequelae
ACEs Study

The ACE study looked at three categories of adverse experience: **childhood abuse**, which included emotional, physical, and sexual abuse; **neglect**, including both physical and emotional neglect; and **household challenges**, which included growing up in a household where there was substance abuse, mental illness, violent treatment of a mother or stepmother, parental separation/divorce or had an incarcerated household member. Respondents were given an **ACE score** between 0 and 10 based on how many of the 10 types of adverse experiences they reported experiencing.

**ABUSE**
- 11% Emotional
- 28% Physical
- 21% Sexual

**HOUSEHOLD CHALLENGES**
- 13% Mother treated violently
- 27% Substance abuse
- 19% Mental illness
- 23% Separation/divorce
- 5% Incarcerated household member

**NEGLECT**
- 15% Emotional
- 10% Physical
### Graded Dose-Response: Relationship Between Number of ACE’s and Health Outcomes

<table>
<thead>
<tr>
<th>Condition</th>
<th>Increased Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ischemic Heart Disease</td>
<td>2.2</td>
</tr>
<tr>
<td>Stroke</td>
<td>2.4</td>
</tr>
<tr>
<td>Cancer</td>
<td>1.9</td>
</tr>
<tr>
<td>Diabetes</td>
<td>1.6</td>
</tr>
<tr>
<td>Attempted Suicide</td>
<td>12.2</td>
</tr>
<tr>
<td>Alcoholism</td>
<td>7.4</td>
</tr>
</tbody>
</table>
Got Your ACE Score?

There are 10 types of childhood trauma measured in the ACE Study. Five are personal — physical abuse, verbal abuse, sexual abuse, physical neglect, and emotional neglect. Five are related to other family members: a parent who’s an alcoholic, a mother who’s a victim of domestic violence, a family member in jail, a family member diagnosed with a mental illness, and the disappearance of a parent through divorce, death or abandonment. Each type of trauma counts as one. So a person who’s been physically abused, with one alcoholic parent, and a mother who was beaten up has an ACE score of three.

The most important thing to remember is that the ACE score is meant as a guideline: If you experienced other types of toxic stress over months or years, then those would likely increase your risk of health consequences.
Got Your ACE Score?

Prior to your 18th birthday:

1. Did a parent or other adult in the household often or very often… Swear at you, insult you, put you down, or humiliate you? or Act in a way that made you afraid that you might be physically hurt?  No ___ If Yes, enter 1___

2. Did a parent or other adult in the household often or very often… Push, grab, slap, or throw something at you? or Ever hit you so hard that you had marks or were injured?  No ___ If Yes, enter 1___

3. Did an adult or person at least 5 years older than you ever… Touch or fondle you or have you touch their body in a sexual way? or Attempt or actually have oral, anal, or vaginal intercourse with you?  No ___ If Yes, enter 1___

4. Did you often or very often feel that … No one in your family loved you or thought you were important or special? or Your family didn’t look out for each other, feel close to each other, or support each other?  No ___ If Yes, enter 1___

5. Did you often or very often feel that … You didn’t have enough to eat, had to wear dirty clothes, and had no one to protect you? or Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?  No ___ If Yes, enter 1___

6. Were your parents ever separated or divorced?  No ___ If Yes, enter 1___

7. Was your mother or stepmother: Often or very often pushed, grabbed, slapped, or had something thrown at her? or Sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard? or Ever repeatedly hit over at least a few minutes or threatened with a gun or knife?  No ___ If Yes, enter 1___

8. Did you live with anyone who was a problem drinker or alcoholic, or who used street drugs?  No ___ If Yes, enter 1___

9. Was a household member depressed or mentally ill, or did a household member attempt suicide?  No ___ If Yes, enter 1___

10. Did a household member go to prison?  No ___ If Yes, enter 1___

Now add up your “Yes” answers: ___________ This is your ACE Score
TED Talk – Nadine Burke Harris, MD, MPH

- Dr. Burke Harris was appointed Surgeon General of California in 2019

- Video Link: https://www.ted.com/talks/nadine_burke_harris_how_childhood_trauma_affec ts_health_across_a_lifetime
Disrupted Neurodevelopment

- Initial adaptive response

- Chronic stress in childhood adversely affects the brain, endocrine and immune systems

- Epigenetic changes lead to adult sequela and may be passed on to future generations
Positive Stress

- Moderate, doesn't last long
- Increases heart rate and stress hormones, but they return to normal levels quickly

Toxic Stress

- Constant and overwhelming
- The brain and body produce an overload of cortisol and adrenaline that harm the function and structure of the brain

Types of Stress Response

- **POSITIVE STRESS**
  - Our body's response to normal everyday stress, like starting a new daycare or taking a test at school.
  - Stress hormones help the body do what's needed in the moment, but once the event passes, our body goes back to its normal state.

- **TOLERABLE STRESS**
  - Our body's response to more serious stress like a scary injury, immigration, or living through a natural disaster.
  - A flood of powerful stress hormones help the body rise to the occasion. However, the presence of a caring and trusted adult can offset this rush, calming the child's stress response, and building resilience.

- **TOXIC STRESS**
  - Our body's response to severe and/or lasting stress such as emotional or physical abuse, or neglect—without support from a caring and trusted adult.
  - Powerful stress hormones overwhelm the child's body and brain. This can result in lifelong issues with mental and physical health, as well as behavior.
Toxic Stress

**Chronic Toxic Stress** → Perpetually primed Fight/Flight response

- When you experience an additional traumatic event, your body will have trouble returning to a normal state. Over time, you will become more sensitive to trauma or stress, developing a hair-trigger response to events that other people shrug off.

**Effects of Chronic Toxic Stress**

- The constant presence of adrenaline and cortisol keep blood pressure high. They also keep glucose levels high to provide enough energy for the heart and muscles to act quickly.
- Chronic activation of Inflammatory pathways.
- In the absence of protective factors, toxic stress damages children’s developing brains.
Toxic Stress Video

Video:  https://www.youtube.com/watch?v=rVwFkcOZHJw
Mechanisms by Which Adverse Childhood Experiences Influence Health and Well-being Throughout the Lifespan

- Early Death
- Disease, Disability & Social Problems
- Adoption of Health-risk Behaviors
- Social, Emotional, and Cognitive Impairment
- Disrupted Neurodevelopment
- Adverse Childhood Experiences
### The Population: Across All Racial Groups

Prevalence of ACEs by Race/Ethnicity for Children Ages 0–17

<table>
<thead>
<tr>
<th></th>
<th>All children</th>
<th>White, NH*</th>
<th>Hispanic</th>
<th>Black, NH*</th>
<th>Asian, NH*</th>
<th>Other, NH*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 + ACEs</td>
<td>46.3%</td>
<td>40.9%</td>
<td>51.4%</td>
<td>63.7%</td>
<td>25.0%</td>
<td>51.5%</td>
</tr>
<tr>
<td>2 + ACEs</td>
<td>21.7%</td>
<td>19.2%</td>
<td>21.9%</td>
<td>33.8%</td>
<td>6.4%</td>
<td>28.3%</td>
</tr>
<tr>
<td>All US children</td>
<td>51.9%</td>
<td>24.5%</td>
<td>12.7%</td>
<td>4.5%</td>
<td>6.3%</td>
<td></td>
</tr>
</tbody>
</table>

* Non Hispanic

Percent of Children Age 0-17 with One or More Adverse Childhood Experiences in the US

Nationwide: 46.3%
State Range: 38.1%–55.9%

Consequences of Lifetime Exposure to Violence and Abuse

Social, Emotional and Cognitive Impairment

• The 5 A’s
  • Anxiety
  • Anger
  • Anhedonia
  • Alienation
  • Avoidance

Adoption of Health Risk Behaviors
The Impact of ACE Start Early

ACEs increase the risk of:

- Childhood obesity
- Early age at first intercourse
- Teen pregnancy
- Bullying
- Dating violence
- Fighting and carrying a weapon at school
- Early initiation of tobacco use
- Early initiation of drug use
- Early initiation of alcohol use
- Self-mutilation and suicide
Domestic Violence and ACE

- 95% probability that a child growing up with DV will be exposed to at least one other ACE

- More than one-third (36%) of children exposed to DV have 4 or more ACEs

Dube et al, 2002
Health Risks

Childhood Experiences vs. Adult Alcoholism

ACE Score

% Alcoholic

0 1 2 3 4+

0 2 6 8 10 12 14 16 18
Mental Health

Childhood Experiences Underlie Chronic Depression

% With a Lifetime History of Depression

ACE Score

- Women
- Men

0 1 2 3 >=4
Social function

ACE Score and the Risk of *Perpetrating* Domestic Violence

Women

Men

Risk of Peretration (%)

ACE Score

0 1 2 3 4 >5 0 1 2 3 4 >5
Health Risks

Adverse Childhood Experiences vs. Smoking as an Adult

ACE Score

0 1 2 3 4-5 6 or more

% 0 2 4 6 8 10 12 14 16 18 20

p < .001
Social Function

ACE Score and Teen Sexual Behaviors

ACE Score
- 0
- 1
- 2
- 3
- 4 or more

Percent With Health Problem (%)

Intercourse by 15

Teen Pregnancy

Teen Paternity
Is It All Doom and Gloom?
Most Powerful Protective Factor: Supportive, Attentive Caregivers

**Resilience**

- Parent’s ability to parent under stressful circumstances buffers effects of family violence on child adjustment

  Davies et al 2004, Margolin et al 2004

- Attachment promoting behaviors can change a child’s developing brain
Resilience

- The brain is continually changing in response to the environment. If the toxic stress stops and is replaced by practices that build resilience, the brain can slowly undo many of the stress-induced changes.

- There is well documented research on how individuals’ brains and bodies become healthier through mindfulness practices, exercise, good nutrition, adequate sleep, and healthy social interactions.
Resilience and Parenting

- Research on families shows that interventions can improve the lives of parents and children. Evidence-based parenting practices increase the health of parents and children. Research on communities and systems is emerging, but early data, especially from schools and juvenile detention centers, is showing promise.
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
Opportunities to Incorporate ACE Learnings

**Reduce impact of current ACEs on children and parents**

- Ensure coordinated care from maternity through pediatrics for high risk mothers and their children (IPV, peripartum depression, substance use, parenting teens)

- Child Abuse Services

**Prevent ACEs**

- Parenting support (perinatal and parenting classes)
- Community Benefit initiatives
- Home outreach programs
- Mindfulness and resilience training
Where Do Healthcare Providers Fit Into All Of This?

Right at the forefront!

- We can screen and intervene
- We can partner with families and communities
- We can teach
- We can impact policy
What is a Helpful Primary Care Response to Patients with a History of ACE?

- Simple: “Asking, listening, and accepting are a powerful form of doing that appears to provide great relief to patients”
  - Associated w/ 35% decrease in health care utilization

- BH tools: Mindfulness based meditation

- Community-based recovery resources
Many parents don’t recognize how their own early trauma can affect their parenting and their children.

Increasing parents’ awareness about effects of ACEs can help them understand their own lives and make healthier choices to protect their own children from ACEs.
We Can Prevent ACEs - Video

https://www.youtube.com/watch?v=8gm-lNpzU4g
For SCMPG, we piloted the use of the ACEs questionnaires for 3 and 5 year old well child visits at 5 different sites last year

  • Antelope Valley is one of the site

NCAL has implemented routine screening for all age groups for the past three years

We refer all ACE scores of >4 to our behavioral health department for further evaluation, long-term therapy and community referrals as needed

We support community programs through the Kaiser Permanente Community Benefits, i.e. Antelope Valley Partners for Health, Children’s Center of Antelope Valley, Mental Health America, Boys and Girls Club, YMCA, etc.
THANK YOU!

▪ Questions? Comments?

Rashmi Dayal, MD
Pediatrician, SCAL Kaiser Permanente, Antelope Valley

Rashmi.Dayal@kp.org
ACEs Flyer

STRESS & EARLY BRAIN GROWTH
Understanding Adverse Childhood Experiences (ACEs)

What are ACEs?
ACEs are serious childhood traumas -- a list is shown below -- that result in toxic stress that can harm a child’s brain. This toxic stress may prevent a child from learning, from playing in a healthy way with other children, and can result in long-term health problems.

Adverse Childhood Experiences can include:
1. Emotional abuse
2. Physical abuse
3. Sexual abuse
4. Emotional neglect
5. Physical neglect
6. Mother treated violently
7. Household substance abuse
8. Household mental illness
9. Parental separation or divorce
10. Incarcerated household member
11. Bullying (by another child or adult)
12. Witnessing violence outside the home
13. Witness a brother or sister being abused
14. Seeing, hearing, or any other form of discrimination
15. Being homeless
16. Natural disasters and war

How do ACEs affect health?
Through stress. Frequent or prolonged exposure to ACEs can create toxic stress which can damage the developing brain of a child and affect overall health.

- Reduces the ability to respond, learn, or figure things out, which can result in problems in school.
- Increases difficulty in making friends and maintaining relationships.
- Increases problems with learning and memory, which can be permanent.
- Increases stress hormones which affect the body’s ability to fight infection.
- May cause lasting health problems.

Exposure to childhood ACEs can increase the risk of:
- Adolescent pregnancy
- Alcoholism and alcohol abuse
- Depression
- Illicit drug use
- Heart disease
- Liver disease
- Multiple sexual partners
- Intimate partner violence
- Sexually transmitted diseases (STDs)
- Smoking
- Suicide attempts
- Unintended pregnancies

A Survival Mode Response to toxic stress increases a child’s heart rate, blood pressure, breathing and muscle tension. Their thinking brain is knocked off-line. Self-protection is their priority. In other words: “I can’t hear you! I can’t respond to you! I am just trying to be safe!”

The good news is resilience can bring back health and hope!

What is Resilience?
Resilience is the ability to return to being healthy and hopeful after bad things happen. Research shows that if parents provide a safe environment for their children and teach them how to be resilient, that helps reduce the effects of ACEs.

Resilience trumps ACEs!
Parents, teachers and caregivers can help children by:
- Gaining an understanding of ACEs
- Helping children identify feelings and manage emotions
- Creating safe physical and emotional environments at home, in school, and in neighborhoods

What does resilience look like?
1. Having resilient parents
   Parents who know how to solve problems, who have healthy relationships with other adults, and who build healthy relationships with their children.

2. Building attachment and nurturing relationships
   Adults who listen and respond patiently to a child in a supportive way, and pay attention to a child’s physical and emotional needs.

3. Building social connections
   Having family, friends and/or neighbors who support, help and listen to children.

4. Meeting basic needs
   Providing children with safe housing, nutritious food, appropriate clothing, and access to health care and good education.

5. Learning about parenting and how children grow
   Understanding how parents can help their children grow in a healthy way, and what to expect from children as they grow.

6. Building social and emotional skills
   Helping children interact in a healthy way with others, manage their emotions and communicate their feelings and needs.

Resources:
- ACEs 101
  http://acesconnection.org/aces-101/
- Tripler P Parenting
  www.triplerparenting.net/go-to-home/
- Resilience Trumps ACEs
  www.resilientchildren.org
- CDC-Kaiser Adverse Childhood Experiences Study
  www.cdc.gov/violenceprevention/acesstudy/
- Zero to Three Guides for Parents
  http://www.zerotothree.org/about-us-areas-of-expertise/parent-brochures-and-guides/

Thanks to the people in the Community & Family Services Division at the Spokane (WA) Regional Health District for developing this handout for parents in Washington State, and sharing it with others around the world.
Resources for You to Learn More

- National Pediatric Practice Community on ACEs: https://nppcaces.org/
- Center For Youth Wellness: https://centerforyouthwellness.org/
- TED Talk https://www.ted.com/talks/nadine_burke_harris_how_childhood_trauma_affects_health_across_a_lifetime
- ACES Information: http://acestoohigh.com/aces-101/
- Futures without Violence: www.FuturesWithoutViolence.org
- Connected Kids Video https://www.youtube.com/watch?v=JOmj5VVYyF0&t=173s
Resources for You to Learn More

- **Triple-P Parenting:** [www.triplep-parenting.net/glo-en/home/](http://www.triplep-parenting.net/glo-en/home/)
- **Resilience Trumps ACEs:** [www.resiliencetrump ACEs.org](http://www.resiliencetrump ACEs.org)
- **CDC-Kaiser Adverse Childhood Experiences Study:** [www.cdc.gov/violenceprevention/acestudy/](http://www.cdc.gov/violenceprevention/acestudy/)
- **Zero to Three Guides for Parents:** [https://www.zerotothree.org/parenting](https://www.zerotothree.org/parenting)
- **Childhelp:** 1800-4ACHILD
- **Treatment Referral for Substance Abuse:** 1-800-662 HELP
- **National Fatherhood Institute:** [www.fatherhood.org](http://www.fatherhood.org)
- **Kaiser Permanente:** [www.kp.org](http://www.kp.org)