ACE

Adverse Childhood Experiences in Minnesota:
Findings and Recommendations
Based on the 2011
Minnesota Behavioral Risk Factor Surveillance System
January 28, 2013

Vincent Felitti, MD
- Dr. Vince Felitti
  - Early 1990s
  - An internist - not a pediatrician
  - Prevention and Wellness Center
  - Weight-loss program
    - Successes were dropping out, regaining weight
    - Past history frequently filled with abusive or traumatic experiences

ACE

Robert Anda, MD
- Centers for Disease Control and Prevention
- Epidemiologist
- Joined with Dr. Felitti

ACE Study Created
- 1995-1997
- 17000+ enrolled
- Homogeneous group
- Surveyed after health evaluation
- Defined seven categories, expanded to ten categories of adversity
First ACE Publication in 1998

- Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults. The Adverse Childhood Experiences (ACE) Study.
  - American Journal of Preventive Medicine
  - 1998, Volume 14, Number 4

(This article provides the best background information on the original study)
http://tinyurl.com/billgoth
http://www.otc.gov/ote/outcomes.htm

ACE Categories*

- HOUSEHOLD DYSFUNCTION
  - Divorce/separation 23%
  - Alcoholism/drug use 27%
  - Incarceration 6%
  - Mental illness 17%
  - Domestic violence 13%
- ABUSE
  - Physical 28%
  - Sexual 21%
  - Emotional/Verbal 11%
- NEGLECT
  - Physical 10%
  - Emotional 15%

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  - Incarceration
  - Mental illness
  - Domestic violence
- ABUSE
  - Physical
  - Sexual
  - Emotional/Verbal

ACE SCORE*

- NUMBER of CATEGORIES to which one is exposed
- Each category to which one is exposed is given ONE point
- Does NOT measure
  - Frequency of events
  - Severity of experience
  - Length of time
  - Age, other than less than 19 years of age
- YET it is statistically reliable, repeatedly validated
ACES Study
First time we were able to measure this type of trauma in a reasonable and understandable way

Adverse Childhood Experiences
- Common
- At the heart of many of the leading causes of death and disability
- Major contributor to chronic disease
- Impact on
  - Education
  - Criminal justice
  - Social services
  - Health care
  - Mental health
  - Historical trauma

Adverse Childhood Experiences vs. Current Smoking

Childhood Experiences vs. Adult Alcoholism
“Many of our most intractable public health problems are the result of compensatory behaviors such as smoking, overeating, [high risk sexual behavior], and alcohol and drug use, which provides immediate partial relief from emotional problems caused by traumatic childhood experiences.”

Felitti, V. The Impact Of Early Life Trauma On Health And Disease: The Hidden Epidemic.
BRFSS
Behavioral Risk Factor Surveillance System

• Centers for Disease Control and Prevention
• Beginning in 1984
• All 50 states, DC, Puerto Rico, and US Territories
• Largest study of its kind in the world using phone survey for gathering health data
• Core questions
• Optional modules (now 34)
• ACE was 31st module added in 2008

BRFSS
Behavioral Risk Factor Surveillance System

• Nine ACE Categories in Minnesota
  • Abuse
  • Physical
  • Sexual
  • Emotional
  • Household Dysfunction
  • Mental illness of a household member
  • Problematic alcohol use by a household member
  • Illegal drug use by a household member
  • Divorce or separation of parents
  • Domestic violence between adults in home
  • Incarceration of household member

BRFSS - Minnesota
Behavioral Risk Factor Surveillance System

• Eight ACE Categories in the CDC-PACE Module
  • Did not use the two neglect categories
  • Eleven questions modified from original study
  • In MN Survey - "Substance Abuse" was split into two categories
  • Alcohol abuse
  • Chemical/drug abuse

BRFSS - Minnesota
Behavioral Risk Factor Surveillance System

• 2011 started gathering data nationally using cell phones
• MN - 18th state to use ACE questions in phone survey
• Largest number of households surveyed for ACE data (approximately, 13,600 Minnesotans)
• Cell phone - 31% of Minnesota respondents
• Despite the appearance of a large "n", there are subsets of data which are too small to reach statistical significance
ACEs are Common in Minnesota

- More than half (55 percent) of Minnesotans report 1 or more ACE

Percent of ACEs, Minnesota 2011

<table>
<thead>
<tr>
<th>Number of ACEs (percent)</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5+</th>
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<tr>
<td>Minnesotans</td>
<td>45</td>
<td>22</td>
<td>12</td>
<td>8</td>
<td>5</td>
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<tr>
<td>Men</td>
<td>46</td>
<td>23</td>
<td>12</td>
<td>7</td>
<td>5</td>
<td>7</td>
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<tr>
<td>Women</td>
<td>43</td>
<td>22</td>
<td>12</td>
<td>9</td>
<td>6</td>
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</tbody>
</table>

Distribution of ACEs among those with at least 1 ACE, Minnesota 2011

- 1 ACE, 40%
- 2 ACEs, 22%
- 3 ACEs, 15%
- 4 ACEs, 9%
- 5+ ACEs, 15%

Prevalence of Individual ACEs, Minnesota 2011

- Verbal Abuse
- Drinking Problem, Household
- Parent Separated or Divorced
- Mental Illness in Household
- Physical Abuse
- Witnessed Domestic Violence
- Drug Use Problem, Household
- Sexual Abuse
- Incarcerated Household Member
Percent of ACEs among Minnesota Adults and by Gender

<table>
<thead>
<tr>
<th>ACE</th>
<th>All</th>
<th>Man</th>
<th>Women</th>
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<tbody>
<tr>
<td>Incestuated Household Member</td>
<td>7</td>
<td>7</td>
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<tr>
<td>Sexual Abuse</td>
<td>10</td>
<td>6</td>
<td>14</td>
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<tr>
<td>Drug Use Problem, Household</td>
<td>10</td>
<td>10</td>
<td>10</td>
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<tr>
<td>Witnessed Domestic Violence</td>
<td>14</td>
<td>13</td>
<td>16</td>
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<tr>
<td>Physical Abuse</td>
<td>16</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>Mental Illness, Household</td>
<td>17</td>
<td>14</td>
<td>19</td>
</tr>
<tr>
<td>Parent Separated or Divorced</td>
<td>21</td>
<td>22</td>
<td>21</td>
</tr>
<tr>
<td>Drinking problem, Household</td>
<td>24</td>
<td>22</td>
<td>28</td>
</tr>
<tr>
<td>Verbal Abuse</td>
<td>28</td>
<td>28</td>
<td>29</td>
</tr>
</tbody>
</table>

Minnesota - Distribution of ACEs by Educational Status

Ratio of College Graduate to High School Graduate and Less than High School Status of Minnesota Adults with 5 or more ACEs

- College graduate: 1.0
- High school graduate: 1.8
- Less than high school: 3.5

Minnesota - Distribution of ACEs by Marital Status

Ratio of Married to Unmarried Minnesota Adults with 5 or more ACEs

- Married Adults: 1.9
- Unmarried Adults: 2.2

Minnesota - Distribution of ACEs by Employment Status

Ratio of Employed to Unemployed Minnesota Adults with 5 or more ACEs

- Employed Adults: 1.3
- Unemployed Adults: 2.8
Percent of Minnesotans by Health Status and Number of ACES, Minnesota 2011

Percent

Fair or poor

Excellent

Health Status

1 2 3

Strong Association between Mental Health and ACES
31 percent of Minnesota adults surveyed with an ACES score of 5 or more had an anxiety disorder diagnosis, compared to only 5 percent with no ACES.

Percent of Minnesotans with Chronic Mental Health Conditions by Number of ACES, Minnesota 2011

Percent with mental health conditions

Depression

Condition

Anxiety

0 10 20 30 40 50

Percent of Minnesotans with Selected Health Risk Behaviors by Number of ACES, Minnesota 2011

Percent with health risk behaviors

Chronic drinking

Current smoking

Behavior

0 10 20 30

Minnesotans with more ACES are more likely to have poor health.

Increased Risk* of Conditions/Behavior when ACE is Present, Minnesota 2011

Increased Risk of Conditions/Behavior when ACE is Present, Minnesota 2011
Percentage of Adults Reporting ACEs by Category and State

<table>
<thead>
<tr>
<th>Category</th>
<th>MN</th>
<th>WI</th>
<th>AR</th>
<th>LA</th>
<th>NM</th>
<th>TN</th>
<th>WA</th>
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<td>14</td>
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<td>Emotional</td>
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<td>24</td>
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<td>Household Dysfunction</td>
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<td>Mental Stress</td>
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<td>Substance Abuse</td>
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<td>Alcohol</td>
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<td>Drugs</td>
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<td>11</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>11</td>
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<tr>
<td>Divorce/Separation</td>
<td>21</td>
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<td>23</td>
<td>27</td>
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<td>26</td>
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<tr>
<td>Domestic Violence</td>
<td>14</td>
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<td>Incarceration</td>
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<td>7</td>
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</tbody>
</table>


Stress - not all bad

- Positive stress
  - Important and necessary
  - Context of stable, supportive and nurturing relationships
  - Child develops a sense of safety and security
  - Develops skills of emotional regulation and self-control
  - Example of crying infant

Stress - not all bad

- Tolerable stress
  - Experiences that could trigger impact on brain development, threatened safety and security, but don’t
  - Human environment and relationships are strong and supportive enough to relieve the stress before it becomes damaging
  - Facilitates adaptive coping skills
  - Example of parental separation, threat of loss of bonding (separation anxiety)

Stress - not all bad

- Toxic stress
  - Intense and prolonged activation of body’s stress response system
  - No buffering or protection by supportive adult relationships
  - Disruption of normal brain development and chemistry
Impact of Adversity on the Brain - The Science is Convincing

Recommendations
- Increase awareness of ACEs, their impact on health and well-being, and Minnesotans’ capacity to act.
- Enhance the capacity of communities to prevent and respond to ACEs.
- Continue to collect Minnesota-specific data on the relationship among ACEs, health outcomes, and resilience.