Preventing the intergenerational transmission of ACEs

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ACES in Tulsa, Oklahoma
## Two Surveys, Summer 2012

<table>
<thead>
<tr>
<th>Study</th>
<th>N</th>
<th>Sample</th>
<th>Linked to</th>
</tr>
</thead>
<tbody>
<tr>
<td>OU-Tulsa, School of Community Medicine Clinic Survey</td>
<td>354</td>
<td>Clinic patients, adults</td>
<td>Electronic Medical Record data:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• health conditions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• medications</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• history</td>
</tr>
<tr>
<td>Family Life and Stress</td>
<td>338</td>
<td>Parents of children aged 6 weeks to 5 enrolled in Tulsa Educare (TEI)</td>
<td>Tulsa Educare data:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Parent interviews</td>
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<td></td>
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<td>• Teacher observations and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Cortisol sample from children</td>
</tr>
<tr>
<td>Total N=</td>
<td>692</td>
<td></td>
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</table>
## OU-Tulsa 2012 ACEs Studies

### SCM IM, FM Clinic patients
- 354 patients
  - 75% female
  - 36% single, 26% married, 23% divorced/separated
  - 24% < high school, 45% high school/GED, 14% tech/trade school
  - 57% using SNAP
  - 59% white, 20%, Afr-Am, 7% Hispanic, 9% Am Ind, 3% multiethnic
  - Age (SD) = 45 (15) years

### Tulsa Children’s Project
- 334 parents
  - 93% female
  - 43% single, 48% married/ LWP, 7% divorced/separated
  - 28% <high school, 38.2% high school/GED, 13% tech/trade school
  - 100% EHS/HS eligible
  - 41% Hispanic, 32% Afr-Am, 16% white, 5% Am Ind, 5% Asian, 5% multiethnic
  - Age (SD) = 30 (7) years
OU-SCM Patients: ACEs

- Verbal abuse: 42%
- Physical abuse: 32%
- Sexual abuse: 27%
- Familial ties: 34%
- Basic needs unmet: 20%
- Witness IPV: 25%
- Sep/Divorce: 41%
- Alcohol/drugs: 37%
- Mental illness: 27%
- Prison: 18%

ACE scores:
- 0 or 1: 35.7%
- 2 to 4: 34.2%
- 5+: 30.1%
Tulsa Educare Parents: ACEs

Verbal abuse 20%
Physical abuse 14%
Sexual abuse 11%
Familial ties 22%
Basic Needs Unmet 9%
Witness IPV 11%
Sep/Divorce 47%
Alcohol/drugs 21%
Mental illness 10%
Prison 17%

ACE scores
- 0 or 1: 58.5%
- 2 to 4: 29.8%
- 5+: 11.7%
OU-SCM patients: ACEs and health

Chronic conditions (z-scores) by ACE score

ACE score

Heart Disease Risk X Mental Health Condition
Health
Mental Health
Mental Health/Substance Abuse
Pain
Clinic patients: IPV and PTSD by ACE score

![Graph showing the relationship between ACE score and Z-scores for IPV Ever, IPV Current, and PTSD. The x-axis represents ACE score, and the y-axis represents Z-scores. The graph indicates that as ACE score increases, the prevalence of IPV and PTSD also increases.]
Tulsa Educare Parents: Health Problems by ACE score

- **Sub abuse**
- **Hypertension**
- **Derm**
- **Asthma/pulm**
- **Arthr/BMJ**
- **Depr/anx**
- **Pain**

Legend:
- Blue: 0
- Red: 1
- Green: 2+

Y-axis: Count from 0 to 18
# ACEs and Health Care Access

<table>
<thead>
<tr>
<th>ACE score</th>
<th>N</th>
<th>Health Care Barriers, Mean (SD)</th>
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<tbody>
<tr>
<td>0-1</td>
<td>319</td>
<td>2.29 (1.59)*</td>
</tr>
<tr>
<td>2-4</td>
<td>217</td>
<td>3.22 (1.57)*</td>
</tr>
<tr>
<td>&gt;4</td>
<td>140</td>
<td>3.84 (1.65)*</td>
</tr>
</tbody>
</table>

* Statistically significant difference

<table>
<thead>
<tr>
<th>Doctor Regularly as a Child?*</th>
<th>N</th>
<th>ACE</th>
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<tbody>
<tr>
<td>No</td>
<td>234</td>
<td>2.95</td>
</tr>
<tr>
<td>Yes</td>
<td>419</td>
<td>2.25</td>
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</table>

<table>
<thead>
<tr>
<th>Dentist Regularly as a child?*</th>
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<th>ACE</th>
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<tbody>
<tr>
<td>No</td>
<td>289</td>
<td>3.07</td>
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<tr>
<td>Yes</td>
<td>363</td>
<td>2.02</td>
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</tbody>
</table>

* Statistically significant difference
A clear and significant pattern in both data sets: higher ACE scores are associated with poor physical and mental health, and a history of poor access to care

• High prevalence of ACEs in both populations
• ACE score related to all major physical and mental health problems, IPV and PTSD
• ACE score predicts number of barriers to health accessing care and regular visits as children
ACEs and the next generation

Mechanisms by Which Adverse Childhood Experiences Influence Health and Well-being Throughout the Lifespan

Three Levels of Stress Response

**Positive**
Brief increases in heart rate, mild elevations in stress hormone levels.

**Tolerable**
Serious, temporary stress responses, buffered by supportive relationships.

**Toxic**
Prolonged activation of stress response systems in the absence of protective relationships.
Tulsa Children’s Project Intervention Model

**Current Situation**
- Low-Income Families
- Children (birth-5) enrolled in Tulsa Educare
- Low-opportunity communities

**Intervention**
- Education
  - Early Childhood Education
- Health
  - Access to care
  - Good nutrition
  - Physical activity
- Social-Emotional Health
- Economic security
- EduCareers: Adult education Workforce training

**Short-term outcomes**
- Healthy Competent Children in Healthy Competent Families

**Long-term outcome**
- Reduction in inter-generational poverty
The cycle of toxic stress and poverty

- Diminished earning potential
- Stresses of poverty
- Executive dysfunction
- Poor school work
- Teen pregnancy
- School drop-out

The cycle begins with diminished earning potential, leading to stresses of poverty, which cause executive dysfunction. This in turn leads to poor school work, which results in school drop-out and teen pregnancy. This cycle perpetuates poverty and stress.
Early successes followed by frustration and failures

2010 nursing cohort
- 9 of 9 passed exam for CNA
- 2 completed LPN training (4/13); 2 working, 3 in school, 2 out of program

2011 nursing cohort
- 12 of 12 passed CNA
- 10 failed at least 1 required class

2012 mixed career cohort
- 10 enrolled
- 8 working and in school
Expand the Focus of Interventions

- Early death
- Chronic disease and conditions
- Problematic behaviors
- Impaired social, cognitive, emotional functioning
- Impaired bio/neurological functioning
- Adverse Childhood Experiences

Traditional interventions

Preparatory interventions
ACEs and adult education/workforce training

- Adverse Childhood Experiences
- Impaired bio/neurological functioning
- Impaired social, cognitive, emotional functioning
- Problematic behaviors
- Chronic disease and conditions
- Early death

- Traditional welfare (TANF, SNAP, SSI)
- WIA training, GED classes, ESL, mentoring
- COGMED: EF training (working memory, impulse control), group work
- Mindfulness-based interventions (MBSR, yoga)
Intergenerational ACEs Model

- Parent ACEs
- Parent Life Stress (financial, ACE events)
- Parent-Child Dysfunction
- Child socioemotional development

Methods:
- TCP survey
- Annual EduCare interview
- Teacher rating (DECA)
ACEs, Parenting and Child Outcomes

Adverse Childhood Experiences

- Biological imbedding of trauma, toxic stress
- Poor attachment, self-regulation, and executive dysfunction
- Harsh/neglecting parenting, low responsiveness, chaos
- Domestic violence, parenting stress, poor parent-child relationship, child abuse & neglect

New ACEs-affected generation

Impaired bio/neurological functioning

Impaired social, cognitive, emotional functioning

Problematic behaviors

Chronic disease and conditions

Early death
ACEs, Parenting and Child Outcomes

Child welfare, head start, foster care, resource support

Parenting classes, anger management

Attachment-based programs (CPP, PCIT), EF training

Mindfulness-based interventions (MBSR)

Early death

Chronic disease and conditions

Problematic behaviors

Impaired social, cognitive, emotional functioning

Impaired bio/neurological functioning

Adverse Childhood Experiences
Collaborators and Funders

Tulsa Children’s Project: Ruth Slocum MSW, Jerry Root MS, Gloria Miller MSW, Julie Miller-Cribbs MSW PhD, Diane Horm PhD, Sherri Castle PhD, Shannon Guss, Tulsa Educare

OU-Tulsa Clinic Survey: Julie Miller-Cribbs, MSW, PhD, Kim Coon, EdD, Fran Wen, PhD, Martina Jelly, MD, MPH, Kristin Foulks-Rodriguez, MPH

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