TRAUMA AND INTERVENTION AT THE SCHOOL LEVEL

BY KELLY PHARES-ZOOK, M.S., OTR/L
Outline

• ACE’s Study – A Review
• Welcome to Laradon School
• Center for Youth Wellness
  - 6 Anecdotes to Toxic Stress
  - Implementing Anecdotes into Laradon
• TIC and Technology
• Possible Future Directions - NMT
• Comments/Questions
The ACE’s Study

What: Adverse Childhood Experience Study
Who: Kaiser Permanente and CDC, > 17,000 participants
Where: San Diego, CA
When: published in 1998
Why: “The relationship of health risk behavior and disease in adulthood to the breadth of exposure to childhood emotional, physical, or sexual abuse, and household dysfunction during childhood has not previously been described.”
What’s an ACE Score?

Original study was 0-10
Subsequent studies have developed a more comprehensive list including (but not limited to)…

1) Physical abuse
2) Sexual abuse
3) Emotional abuse
4) Physical neglect
5) Emotional neglect
6) Domestic Violence
7) Substance abuse within household
8) Household mental illness
9) Parental separation or divorce
10) Incarcerated household member

*neglect only added in 2nd wave of study
The ACE’s Study - Findings

• ACE scores have a dose-response relationship with at-risk behaviors (the higher the ACE score, the more likely an adult will engage in at-risk behavior)
  ○ Smoking
  ○ Alcoholism
  ○ Drug Use
  ○ Sexual Promiscuity

• ACE scores have a dose-response relationship with poor-health outcomes
  ○ Physical (obesity, heart conditions, stroke, diabetes, cancer, allergies, autoimmune diseases, COPD, hepatitis)
  ○ Mental (severe depression, ADHD, anxiety)

• BUT, even with 0 at-risk behaviors, the higher the ACE score, the higher the correlation to poor health outcomes
ACE’s Findings

Compared to an ACE score of 0, an ACE score of > 4…

- 7x more likely to develop alcoholism
- 2x more likely to have cancer
- 4x more likely to have emphysema
- 2.5x more likely to get COPD
- 2.5x more likely to get hepatitis
- 4.5x more likely to develop depression
- 12x more likely to attempt suicide

- > 6 - 30x more likely to attempt suicide
- > 7 – 3.5x more likely to have heart attack (#1 killer in US)

… the list goes on and on…
Who Does This Affect?

- ALL POPULATIONS
- Higher ACE scores are more prevalent in lower socio-economic societies BUT…
- Original ACEs study was 75% white, 40% college educated or more, 50% men, almost all had jobs

- 67% had at least 1 ACE
- 37.9% had > 2 ACEs
- 12.5% had > 4 ACEs
The Science of Stress

FIGHT OR FLIGHT (OR FREEZE)

Chemical structures of hormones involved in stress response.
Toxic Stress Effects

- Endocrine (Hormonal) System
- Nervous (Neurological) System
- Lymphatic (Immune) System

State becomes a trait

Transgenerational Trauma
LARADON SCHOOL!

Laradon's Mission is to be an organization of excellence that provides superior, individualized services to children and adults with intellectual, developmental and other disabilities, supporting their independence in daily life and maximizing their full potential.
Laradon School - Fun Facts

- 10 classrooms
- Cap at 70 kids
- ~ 70 staff
- Serve kids with dual diagnoses of ID and behavioral disorder
- Primary treatment model is ABA
- Goal: stabilize behaviors, increase skill acquisition → send back to LRE

Currently:
29.9% > 4 ACE’s
What to do about it?

Dr. Nadine Burke Harris and the Center for Youth Wellness

Ways to decrease the stress response:

1) Mindfulness/Meditation
2) Nutrition
3) Exercise
4) Sleep
5) Healthy Relationships
6) Mental Health Therapy
1) Mindfulness Intervention

(WARNING: THIS ONE FAILED)

• **August 2018**: Ask teachers who would be interested – 10/10 said yes
• **Late August 2018** Volunteers to make Mindfulness Committee (~ 20 to start, 8 classrooms represented, dwindle to 3 people)
  • Order materials
  • Have volunteers plan mindfulness for their classrooms
  • **Start in October 2018**

• **January 2019**: “Mindfulness 101” sheet for teachers
# February 2019: Mindfulness Survey Results

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your classroom practice mindfulness every week?</td>
<td>5 (yes)</td>
</tr>
<tr>
<td>If yes, how many times on average?</td>
<td>1.25/wk</td>
</tr>
<tr>
<td>Do you have a set day/time to incorporate mindfulness?</td>
<td>5 (yes)</td>
</tr>
<tr>
<td>Do you use materials for mindfulness?</td>
<td>websites</td>
</tr>
<tr>
<td>Has your class ever checked out materials from the OT room?</td>
<td>1 class</td>
</tr>
<tr>
<td>Do you have any desire to incorporate (more) mindfulness into your classroom routine?</td>
<td>8 classes</td>
</tr>
</tbody>
</table>
1) Mindfulness Intervention
(DID BETTER THIS TIME AROUND)

- September 2019: Order and organize materials
  - Focused on the senses rather than yoga due to high trauma
1) Mindfulness Intervention (con’t)
1) Mindfulness Intervention
(DID BETTER THIS TIME AROUND)

• **September 2019:** Order and organize materials
  • Focused on the senses rather than yoga due to high trauma

• **October 2019:** Meeting with teachers and lead paras
  • EBR for mindfulness for our population
  • Showed them the resources I put together
  • Start a check-out system
  • Offered to lead mindfulness session in every classroom for a few weeks
January 2020: Mindfulness Survey Results

Does your classroom practice mindfulness every week? 8 (yes)
If yes, how many times on average? 3.2/wk
Do you have a set day/time to incorporate mindfulness? 8 (yes)
Do you use materials for mindfulness? Yes (lots)
Has your class ever checked out materials from the OT room? 5 classes
Do you have any desire to incorporate (more) mindfulness into your classroom routine? 9 classes
2) Nutrition- intervention

- Follow USDA lunch serving recommendations (only 1 lunch per student)
- Cut out candy and other high sugar “snacks” for kids
- Parent involvement (1:1 level so far – individual phone calls/emails/meetings)
- Classroom surveys
# 2) Nutrition Survey May 2019

**1 = Strongly disagree… 5 = Strongly agree**

<table>
<thead>
<tr>
<th>Question</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Nutrition is an important factor for my students' success…</td>
<td>4.4</td>
</tr>
<tr>
<td>2) Kids in my class are relatively healthy eaters.</td>
<td>2.5</td>
</tr>
<tr>
<td>3) Laradon does a good job of providing healthy snacks…</td>
<td>3.3</td>
</tr>
<tr>
<td>4) Laradon does a good job of providing healthy lunches…</td>
<td>3.6</td>
</tr>
<tr>
<td>5) My cooking groups make healthy foods options.</td>
<td>3.2</td>
</tr>
</tbody>
</table>

**1 = Huge Barrier… 4 = not a barrier at all**

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time during school</td>
<td>2.6</td>
</tr>
<tr>
<td>Time after school</td>
<td>2.8</td>
</tr>
<tr>
<td>Expense</td>
<td>2.3</td>
</tr>
<tr>
<td>Kids won't eat</td>
<td>2.3</td>
</tr>
<tr>
<td>Kitchen Appliances</td>
<td>2.4</td>
</tr>
<tr>
<td>Kids don't want to cook</td>
<td>2.7</td>
</tr>
</tbody>
</table>
2) Nutrition- Intervention A

Cooking in Classrooms

• Often junk food or easy “meals” (e.g. pigs in a blanket)
• Created a healthy cookbook (all recipes < 8 ingredients)

Moving Forward…

• Meeting with teachers/leads to find out how to best support healthy cooking in the classrooms
2) Nutrition- intervention B

• August 2019 – Sprouts order of apples & bananas every Monday
• Monthly order of peanut butter and applesauce
• Monthly order of mixed nuts (harder to divide and distribute)

• BEFORE healthy snacks: $500/month
• Healthy snacks: $200/month BUT...
• Unhealthy snacks dropped every month – currently averaging $250

▪ NET GAIN of $50/month
3 & 4) Exercise & Sleep
- future plans/visions

Sleep
- surveys at home
- regulate how much kids are allowed to sleep at school (norm is 30 minutes)

Exercise
- limit screen time at school
- create external motivational program (step program?)
- increase walking
- SURVEYS!
5) Healthy Relationships

School-Wide Presentation on Trauma

- Education on toxic stress and neurobiology
- Education on the importance of positive, repetitive, social experiences
- Took a lot of talking points from Dr. Daniel Siegel’s Whole Brain Child

Teaching is not about information. It's about having an honest intellectual relationship with your students.

Paul Lockhart
“My therapy is quite simple: I wag my tail and lick your face until you feel good about yourself again.”
A: Heart Rate Project

Goals:

1) Define baseline HR measures for the kids (whether that be high, low, or average)
2) See if there is a correlation to behaviors whenever HR deviates from baseline for a significant period of time (minutes)
3) Attempt to use this data to prevent crises
Heart Rate Project

Attempted data on three high-trauma students

1) 17 yo female; attempted chest strap monitor
   refused to wear it for more than 10 minutes and the data refused to sync (technology fail)

2) 15 yo male; wrist watch; taught him how to use his heart-rate to monitor his regulation/state
   lasted 3 weeks before he threw it down in a parking lot when he was in crisis

3) 10 yo male; wrist watch
   tolerated for ~ 1 month before it broke but got good data!
   • “Baseline” ranged from 70-90 bpm
   • When in crisis, sometimes HR was 80 bpm
   • When in crisis, sometimes sitting on ground and HR was > 140 bpm

   • This helped us differentiate our treatment
   • HR = 80 bpm ☑️ treat behaviorally
   • HR = 147 bpm ☑️ treat regulation (singing was his #1 regulating activity, then when it was safe
     head/back tickles) ☑️ check behavior with compliance checks
TIC and Technology

B: Oculus Go Virtual Reality
Principle 1: The brain is organized in a hierarchical fashion, such that all incoming sensory input first enters the lower parts of the brain.
Future Directions

Neurosequential Model of Therapeutics

Principle 2: Neurons and neural systems are designed to change in a “use-dependent” fashion.

Principle 3: The brain develops in a sequential fashion.

Principle 4: The brain develops most rapidly early in life. 

Principle 5: Neural systems can be changed, but some systems are easier to change than others.

Principle 6: The human brain is designed for a different world.
**TIC at Your School - Questions to Ask**

1) What are the functioning levels of your students?
   a) Can they access yoga?
   b) Can they access traditional mindfulness?
   c) Do they need to focus on exterior sensations rather than interior feelings/perceptions?

2) Do your children have significant trauma?
   a) If yes, focusing on interior feelings/perceptions can retraumatize them.
   b) If no, the world is your oyster!

3) What are your funding sources?
   a) Does your school/district offer money specifically for TIC?
   b) Can you write a grant to access more resources?

4) Do you have buy-in from your school?
   a) Different classrooms have different priorities. How can you best address TIC in each one?
   b) Are your teachers/paras too overwhelmed to incorporate TIC?
   c) *Do staff understand why TIC is important? Teach them!*

5) How are you/your school/your district taking care of staff?
   a) Don’t underestimate secondary trauma and vicarious trauma
   b) Don’t do it all alone
I have a short period of time to learn something…

“How Childhood Trauma Affects Health Across a Lifetime”
   -TEDTalk by Nadine Harris Burke (16 minutes)

https://www.denvercac.org/

https://creatingtraumasensitiveschools.org/

https://childtrauma.org

https://centerforyouthwellness.org/

TONS of articles to read if you use google scholar
(I can always start you off and send some to you if you are interested)

I am committing to more time...

All the Books! Some favorites are:
   The Boy Who Was Raised As a Dog by Bruce Perry
   The Deepest Well by Nadine Harris Burke
   The Whole-Brain Child by Daniel J. Siegel
   (cheat sheet found at https://www.drdansiegel.com/pdf/Refrigerator%20Sheet--WBC.pdf)

Podcast - Trauma-Informed Lens Podcast
   ● (~ 1 hour/episode)
   ● found at https://connectingparadigms.org
   ● or found at podcast stores

https://samhsa.gov
   ● Resources for daaaaaaaaaaaaaaaaayyyyyyyysssss
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## Arousal Continuum

<table>
<thead>
<tr>
<th>Adaptive Response</th>
<th>REST</th>
<th>VIGILANCE</th>
<th>FREEZE</th>
<th>FLIGHT</th>
<th>FIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Predictable De-</strong></td>
<td>Presence</td>
<td>Quiet voice</td>
<td>Slow sure physical touch</td>
<td>Presence</td>
<td>Appropriate physical restraint</td>
</tr>
<tr>
<td><strong>escalating</strong></td>
<td>Quiet rocking</td>
<td>Eye contact</td>
<td>“invited” touch</td>
<td>Quiet confidence</td>
<td>Withdraw from class</td>
</tr>
<tr>
<td><strong>Behaviors</strong></td>
<td>(behaviors of the teacher or caregiver when a child is in various states of arousal)</td>
<td>Confidence</td>
<td>Quiet melodric words</td>
<td>Disengage</td>
<td>TIME1</td>
</tr>
<tr>
<td><strong>Predictable</strong></td>
<td>Talking</td>
<td>Frustration, anxiety</td>
<td>Raised voice</td>
<td>Increased or continued frustration</td>
<td>Inappropriate physical restraint</td>
</tr>
<tr>
<td><strong>escalating</strong></td>
<td>Poking</td>
<td>Communicate from distance without eye contact</td>
<td>Raised hand</td>
<td>More yelling</td>
<td>Grabbing</td>
</tr>
<tr>
<td><strong>Behaviors</strong></td>
<td>Noise</td>
<td>Complex, compound directives</td>
<td>Shaking finger</td>
<td>Chaos</td>
<td>Shaking</td>
</tr>
<tr>
<td><strong>(behaviors of the</strong></td>
<td>Television</td>
<td>Ultimatums</td>
<td>Tone of voice, yelling, threats</td>
<td>Chaos in class</td>
<td>Screaming</td>
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<tr>
<td><strong>teacher or caregiver</strong></td>
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<td><strong>when a child is in</strong></td>
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<td><strong>arousal)</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Regulating Brain Region</th>
<th>NEOCORTEX Cortex</th>
<th>CORTEX Limbic</th>
<th>LIMBIC Midbrain</th>
<th>MIDBRAIN Brainstem</th>
<th>BRAINSTEM Autonomic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognition</td>
<td>ABSTRACT</td>
<td>CONCRETE</td>
<td>EMOTIONAL</td>
<td>REACTIVE</td>
<td>REFLEXIVE</td>
</tr>
<tr>
<td>STATE</td>
<td>CALM</td>
<td>ALERT</td>
<td>ALARM</td>
<td>FEAR</td>
<td>TERROR</td>
</tr>
</tbody>
</table>

[Image: Arousal Continuum Diagram]
Please DO NOT mark or indicate which specific statements apply to your child.

1) Of the statements in Section 1, HOW MANY apply to your child? Write the total number in the box.

Section 1. At any point since your child was born...

- Your child’s parents or guardians were separated or divorced
- Your child lived with a household member who served time in jail or prison
- Your child lived with a household member who was depressed, mentally ill or attempted suicide
- Your child saw or heard household members hurt or threaten to hurt each other
- A household member swore at, insulted, humiliated, or put down your child in a way that scared your child OR a household member acted in a way that made your child afraid that s/he might be physically hurt
- Someone touched your child’s private parts or asked your child to touch their private parts in a sexual way
- More than once, your child went without food, clothing, a place to live, or had no one to protect her/him
- Someone pushed, grabbed, slapped or threw something at your child OR your child was hit so hard that your child was injured or had marks
- Your child lived with someone who had a problem with drinking or using drugs
- Your child often felt unsupported, unloved and/or unprotected
5) Healthy Relationships - Presentation

- Be predictable (schedules)
- Be kind and empathetic
  Ask “*What has happened to you?*” rather than “Why are you doing this? Why are you mad at me? Why don’t you listen to my logic? Why don’t you toughen up?”
- Make students feel safe (physically and emotionally – support their willingness to try something new)
- Listen to their stories– you don’t have to be a psychologist!
- Name It to Tame It
- Connect then redirect method (this often takes more time than we want it to)

- Assume a person (child/coworker/sibling/SO) is doing the best they can with what they have in any given situation