Developmental Trauma and the Brain

EPIDEMIOLOGICAL DATA AND NEUROLOGICAL IMPACTS

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Introduction & Overview

- Introduction to us (Kay)
- Developmental trauma in the early years (case study) (Kay)
- Impact of child trauma on school functioning: Epidemiological and neurological impacts. (Govind)
- Gaps in evidence and the need for a new approach: Trauma informed positive behaviour support (Govind)
- Application to case study (Kay)
Introduction to us

- Dr. Kay Ayre
- Dr. Govind Krishnamoorthy

Credit: Hemmeter et al. (2018)
Case study – Meet Luke

- What is the most concerning aspects of the case?
- Why do you think his behaviours are so severe?
- What do you think will help?
Adversity in Childhood

EPIDEMIOLOGICAL DISCOVERIES
BETTER THAN ZERO

HOW ALTERNATIVE DISCIPLINE IS REPLACING ZERO TOLERANCE TO BREAK THE SCHOOL-TO-PRISON PIPELINE.
School-Related Outcomes of Traumatic Event Exposure and Traumatic Stress Symptoms in Students: A Systematic Review of Research from 1990 to 2015

Michelle M. Perfect¹ · Matt R. Turley¹ · John S. Carlson² · Justina Yohanna² · Marla Pfenninger Saint Gilles²
Other Academic Outcomes (e.g., Discipline, Dropout, Attendance)

Eckenrode et al. (1993, 1995) found that youth who had been maltreated had more discipline referrals and suspensions and were more likely to be retained than non-maltreated counterparts. Those who had endured physical abuse had more discipline referrals. Shonk and Cicchetti (2001) found higher rates of grade retention, absences, and special education services among youth who had been maltreated compared to those who had not. Daignault and Hébert (2009) found that 39% of their participants who had experienced sexual abuse were rated by their parents and teachers as experiencing academic difficulties and 24% had repeated a grade. Similarly, Fantuzzo et al. (2011) found differential impact of traumatic event exposure on attendance, academic engagement, and suspensions based on whether they experienced neglect or physical abuse and the timing of when the maltreatment occurred. Students who had been maltreated and had higher levels of dissociative symptoms had lower perceived school membership and lower academic competence (Perzow et al., 2013).
<table>
<thead>
<tr>
<th>Study</th>
<th>Year established</th>
<th>Sample size</th>
<th>Number of waves of data collection to date</th>
<th>Net response in early adulthood</th>
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</thead>
<tbody>
<tr>
<td><strong>Australian and New Zealand birth cohorts</strong></td>
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<tr>
<td>The Australian Temperament Project⁷,⁸</td>
<td>1983</td>
<td>2443, increasing to 2514 in Wave 2</td>
<td>16 (to 32–33 years)</td>
<td>40% (1000 responses) at 23–24 years 42% (1052 responses) at 27–28 years</td>
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<td>Christchurch Health &amp; Development Study¹³</td>
<td>1977</td>
<td>1265</td>
<td>23 (to 35 years)</td>
<td>80% (1011 responses) at 21 years 76% (962 responses) at 35 years</td>
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<td>Dunedin Multidisciplinary Health and Development Study⁴</td>
<td>1972</td>
<td>1037</td>
<td>13 (to 38 years)</td>
<td>96% (992 responses) at 21 years 93% (961 responses) at 38 years</td>
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<tr>
<td>Mater-University of Queensland Study of Pregnancy⁹</td>
<td>1981</td>
<td>7223</td>
<td>6 (to 30 years)</td>
<td>53% (3805 retained⁴) at 21 years 40% (2900 retained⁴) at 30 years</td>
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<tr>
<td>The Western Australian Pregnancy Cohort (Raine) Study¹⁰</td>
<td>1989</td>
<td>2868</td>
<td>13 (to 22 years)</td>
<td>43% (1234 responses) at 22 years</td>
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<td><strong>International birth cohorts</strong></td>
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<td>1970 British Cohort Study¹¹ (UK)</td>
<td>1970</td>
<td>17284</td>
<td>8 (to 42 years)</td>
<td>50% (8654 responses) at 26 years 54% (9354 responses) at 42 years</td>
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<td>Children of the 90’s (part of the 1990 Avon Longitudinal Study of Parents and Children)¹² (UK)</td>
<td></td>
<td>Complex; 14 062 live births, increasing to 14 775 live births by 18 years</td>
<td>Complex (up to 68 points of data collection to 18 years)</td>
<td>37% (5535 responses) at 18 years</td>
</tr>
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</table>

*number of responses not clear and possibly less.
Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults

The Adverse Childhood Experiences (ACE) Study

Vincent J. Felitti, MD, FACP, Robert F. Anda, MD, MS, Dale Nordenberg, MD, David F. Williamson, MS, PhD, Alison M. Spitz, MS, MPH, Valerie Edwards, BA, Mary P. Koss, PhD, James S. Marks, MD, MPH
Dr. Felitti made the connection that overeating made patients feel better by soothing their anxiety, fear, anger, or depression and losing weight increased their anxiety, fear, and depression to levels that were intolerable. He introduced his findings at a convention in Atlanta, where he met Dr. David Williamson and Dr. Robert Anda, both medical epidemiologists for the CDC. These three doctors and their colleagues began laying out the criteria for the ACE Study to understand how childhood events might affect adult health. The ACE Study was designed to answer the question: “If risk factors for disease, disability, and early mortality are not randomly distributed, what early life influences precede the adoption or development of them?”
ABUSE
- Physical
- Emotional
- Sexual

NEGLECT
- Physical
- Emotional
- Mother treated violently

HOUSEHOLD DYSFUNCTION
- Mental Illness
- Incarcerated Relative
- Substance Abuse
- Divorce

Credit: Robert Wood Johnson Foundation. Rwjf.org
Source: Washington State Family Policy Council
Neurological impacts

- Technological advances and the decade of the brain.
- The period of most rapid growth is in early childhood.
- At birth the brain is largely underdeveloped.
- By age 4, the brain is 90% adult size.
Optimal environments for learning (Perry, 2017):

- Relevant (developmentally matched)
- Rhythmic (resonant with neural patterns)
- Repetitive (patterned)
- Rewarding (pleasurable)
- Respectful (child, family and culture)
Examples of activities

- **State Regulation:**
  - Massage, grooming, brushing hair, singing.
  - Rocking, holding, touching, swinging, cuddling.
  - Baby games and nursery rhymes (little miss piggy)

- **Somatosensory Integration:**
  - Music, rhyming, poems, clapping, drumming.
  - Movement, playing with balls, balancing
  - Sand and clay, stress balls, playdoh, finger painting.
Examples of activities

- Emotion Regulation
  - Simon says, pass the face, Mr. Wolf
  - Doing plays, drawing, art, acting
  - Dance, playing with pets
  - Nature discovery

- Abstract thought
  - Story-telling
  - Drama/theater
  - Games such as “who am I”? 
  - Writing
  - Life story work
TRAUMA INFORMED POSITIVE BEHAVIOUR SUPPORT

www.tipbs.com
Trauma informed support – just another fad or trend? What does it mean for real-world practice?

Trauma informed positive behaviour support – Key principles and practices.

Why is the behaviour occurring? What is the function?

What needs for this child have not been met?

How is the child feeling?

What is the child trying to say?
Case study: “when” as important as “what”

- Rest / Baseline: Calm
- Escalation: Alarm
- Fight: Terror / Rage
- Flight: Fearful / Avoidant
- Freeze: Numbing

Siegal, 2016
Evidence based practice meets practice based evidence

Trauma-informed practices to support the healing of the child affected by trauma:

- Safety and belonging
- Trust
- Supportive and caring relationships
- Positive experiences
- Predictable routines
- Improved social and emotional competency
- Remain calm and regulated yourself.
Future sessions

- Impact of adversity and trauma on attachment (session 2) and its implications for guiding behavior (session 3).
Thank you

QUESTIONS AND COMMENTS


