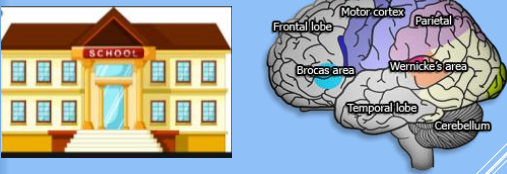


HOW TO DEVELOP A TRAUMA-INFORMED SCHOOL: BRAIN BASED STRATEGIES FOR TEACHING SOCIAL EMOTIONAL LEARNING SKILLS WITH CHILDREN AND ADOLESCENTS




Steven G. Feifer, D.Ed., NCSP
feifer@comcast.net
www.schoolneuropsychpress.com

jack hirose
PUBLISHED BY

1

PRESENTATION GOALS




1. Define **trauma**, and discuss the prevalence rate of trauma and stress for school aged children.
2. Discuss key **brain regions** impacted when students experience trauma, and the subsequent effect on academic and social skills' development.
3. Discuss **five** essential features toward the development of a "trauma-informed" school.
4. Explore the core factors in helping children develop **resiliency** and **emotional wellness** when dealing with stress and trauma.
5. Present an **assessment algorithm** for psychologists to craft a "trauma-sensitive" assessment.

2

2

Dr. Feifer's Journey 1992 – present



- School psychologist 20+ years
- Diplomate in school neuropsychology
- 2008 **Maryland School Psychologist of the Year**
- 2009 **National School Psychologist of the Year**
- Author: **8 books** on learning and emotional disorders
- Test Author: **FAR & FAM** (FAW coming soon)
- Currently in private practice at Monocacy Neurodevelopmental Center in Maryland

www.schoolneuropsychpress.com

3

3

Centre for Addiction and Mental Health (CAMH, 2015)

- Mental illness is a leading cause of disability in Canada, with **1 in 5** Canadians experiencing a mental health or addiction problem.
- **70%** of mental health problems have their onset during childhood or adolescence.
- Men have higher rates of addiction than women, while women have higher rates of mood and anxiety disorders.
- Mental and **physical health** are linked. People with a long-term medical conditions such as chronic pain are much more likely to also experience mood disorders.
- Canadians in the **lowest income group** are **3 to 4 times** more likely than those in the highest income group to report poor to fair mental health.

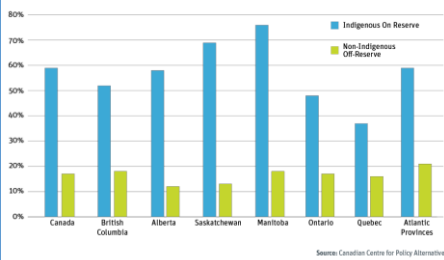


4

4

CANADIAN POVERTY RATES: **Stress**

Poverty rates by province



Source: Canadian Centre for Policy Alternatives

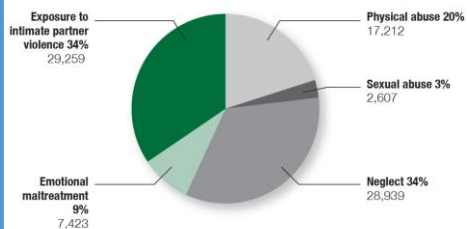
5

* First Nations approximately 1 million of 1.6 million indigenous population (4.9%)

5

Childhood Maltreatment in Canada: **Trauma**

FIGURE 5: Primary Category of Substantiated Child Maltreatment in Canada in 2008*




Canadian Incidence Study of Reported Child Abuse and Neglect - 2008

* Total estimated number of substantiated investigations is 85,440, based on a sample of 6,163 substantiated investigations.


6

6




PREVALENCE OF TRAUMA

- * 26% of children will have experienced or witnessed a traumatic event by their 4th birthday (Briggs-Cowan et al, 2010).
- * A traumatic event is defined by APA as a direct or **perceived** threat rendering a child feeling overwhelmed and fearful of their safety.
- * Traumatic stress reactions in children often lead to difficulty self-regulating emotions, heightened aggression, lack of trust, and poor school performance (Diamanduros et al, 2018).




Washington DC: "March for our lives"
March 24th, 2018


7




"NATIONAL TRAUMA": DEPRIVATION





- Nicolae Ceausescu took control over the communist party in Romania 1966-1989.
- Women must bear a minimum of 5 children, and bearing 10 children earned the dubious honor of "heroine mothers"
- Banned all abortions for women under 45, and issued government crackdown on divorce.
- Romania eventually had one of the highest infant mortality rates and unwanted children living in orphanages in the world.



8




BUCHAREST EARLY INTERVENTION PROJECT

- Previous research exploring the relationship between neglected children suffered from selection bias.
- BEIP studied 126 children placed in six different institutions. Half placed in quality care and half in remained in institutions.
- Main finding was that the earlier a child was placed in foster care (<2), the better the recovery.


9



ENVIRONMENTAL DEPRIVATION AND ATTACHMENT

- Children who have experienced early institutionalization tend to display the following behaviors (Zeanah & Smyke, 2007).
 - * **Decreased play behaviors**
 - * **Increased aggression**
 - * **Social disinhibition**
 - * **Poor social boundaries**
 - * **Poor adaptive behavior**


(Bucharest Early Intervention Project, 2007)



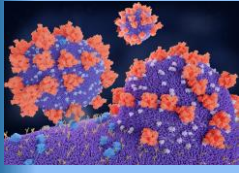
- Selective attachments tend to form between 6-9 mos for typically developing children. This is often termed the **"sensitive period"**.
- Children from institutions adopted prior to this period are more likely to display **secure** attachments.
- Dopamine interacts with oxytocin (hormone) pathways to form the neural basis of attachment.

10

10




COVID-19




- 7 strains of coronavirus found in humans.
- Spike proteins of SARS-COV-2 (red) bind to ACE2 proteins (blue), and that is the entry to the target cell.
- ACE2 proteins are found on the surfaces of many cells, tissues, and organs throughout the body.

- The virus can invade the central nervous system and enter the brain through the 1st cranial nerve (olfactory). The sense of smell bypasses thalamus and enters brain at piriform cortex and also hippocampus.
- Loss of smell (Anosmia)
- Loss of taste (Ageusia)
- 1/3rd of cases in Wuhan had neurological symptoms.
- Follow up neuropsych may be needed.



11

11



COVID-19 STATISTICS: DISPROPORTIONALITY OF TRAUMA

African Americans by percentage of population and share of coronavirus deaths

Only a few jurisdictions publicly report coronavirus cases and deaths by race.

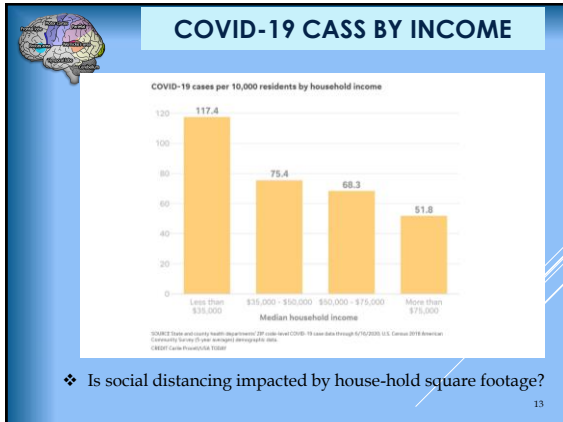
Location	Percentage of population	Percentage of deaths
Milwaukee County, Wis.	20%	73%
Chicago	32%	67%
North Carolina	21%	38%
Louisiana	32%	70%
Illinois	14%	42%
Florida	10%	16%
D.C.	46%	98%
Michigan	14%	41%
Connecticut	10%	10%

Source: Johns Hopkins University, state health departments and American Community Survey

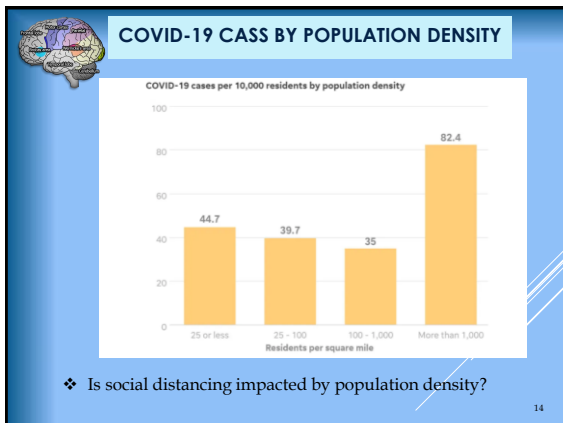
- Higher rate of lung disease, heart disease, hypertension, and diabetes.
- Social distancing difficult in more densely populated areas.

12

12



13




14

COVID-19: HOW DO WE RETURN TO SCHOOL?

- Nearly 300 million students out of school.
- There will need to be a transition or buffer period to allow students and teachers to feel safe and comfortable in the building. Start with a re-entry plan...work in a celebration!
- Educators will need to be patient with academic skills as there may be gaps in learning (*i.e. math and foreign language*).
- Social distancing may need to continue so expect schedule adjustments and partial re-openings.
- Masks, gloves, thermal temperature checks, sanitizer stations etc.. may be needed.
- Access to mental health services.
- Limitations on extra-curricular activities and sports.
- Work with parents to discuss coronavirus myths and best practices moving forward.

15



DEFINING TRAUMA

❖ **Trauma:**

- ❖ Childhood maltreatment
- ❖ Violence exposure
- ❖ Depriving care environments
- ❖ Adverse community trauma
(i.e. crime, gangs, poverty etc..)
- ❖ Natural disasters


❖ 44% of children in developed countries exposed to trauma.

❖ 59% of children in developing countries have been victims of physical, emotional, or sexual violence or had witnessed domestic or community violence in the past year (Hillis et al., 2016)

❖ Just 5-10% of individuals will develop PTSD (Aupperle, et al, 2012).

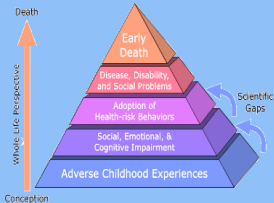
16

16



ADVERSE CHILDHOOD EXPERIENCES


➤ The Adverse Childhood Experiences Study (ACE Study) conducted by both Kaiser Permanente and the Centers for Disease Control and Prevention, examined the long term impact of childhood trauma from participants recruited more than 20 years ago from 1995-1997.



- **Conclusion 1:** Adverse childhood experiences are common. For example, 28% participants reported physical abuse and 21% reported sexual abuse.
- **Conclusion 2:** Adverse childhood experiences often occur together. Almost 40% of the original sample of 17,000 participants reported two or more ACEs and 12.5% experienced four or more.
- **Conclusion 3:** The cumulative impact of adverse childhood experiences leads health, social, and behavioral problems throughout the lifespan.

17

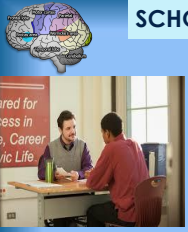
17



SYMPTOMS OF TRAUMA

Physiological Symptoms (anxiety disorder?)	Behavioral Symptoms (depression?)	Psychological Symptoms (ADHD?)
Shallow Breathing	Work Refusal	Inconsistent attention
Facial Flushing	School Refusal	Irritability
Excessive Sweating	Avoiding unstructured areas	Mind goes blank during tests
Hand Tremors	Sensitivity to loud sounds	Loses train of thought
Dizziness	Rarely volunteers in class	Poor organization
Dilated Pupils	Speaks in a hushed voice	Easily angered
Fatigue	Does not initiate peers	Poor emotional self-regulation
Muscle Tension	Avoids cafeteria	Distrusts authority figures
Chest pains	Often visits school nurse	Irrational fears

18

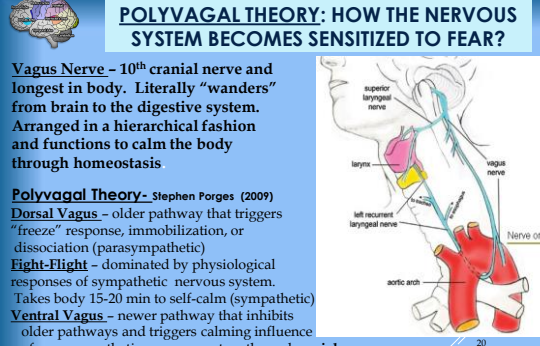


SCHOOL MENTAL HEALTH SERVICES

- NASP recommends 1 psychologist for every 500- 700 students. Reality is 1 for every **1,381**.
- American School Counselor Association recommends 1 counselor for every 250 students. Reality is 1 for every **482** students.
- The Every Student Succeeds Act (ESSA) authorizes various funding streams for schools to improve access to coordinated and comprehensive school mental health services including:
 - * Positive behavior interventions and supports (PBIS).
 - * Social emotional learning
 - * Conflict resolution
 - * **Trauma informed practices**

19

19



POLYVAGAL THEORY: HOW THE NERVOUS SYSTEM BECOMES SENSITIZED TO FEAR?

Vagus Nerve – 10th cranial nerve and longest in body. Literally “wanders” from brain to the digestive system. Arranged in a hierarchical fashion and functions to calm the body through homeostasis


Polyvagal Theory- Stephen Porges (2009)

- Dorsal Vagus** – older pathway that triggers “freeze” response, immobilization, or dissociation (parasympathetic)
- Eight-Flight** – dominated by physiological responses of sympathetic nervous system. Takes body 15-20 min to self-calm (sympathetic)
- Ventral Vagus** – newer pathway that inhibits older pathways and triggers calming influence of parasympathetic nervous system through **social engagement and trust**.

* Primitive systems activated when more evolved system fails*

20

20



POLYVAGAL THEORY: HOW WE PSYCHOLOGICALLY RESPOND TO TRAUMA

(BESSEL VAN DER KOLK, 2014)

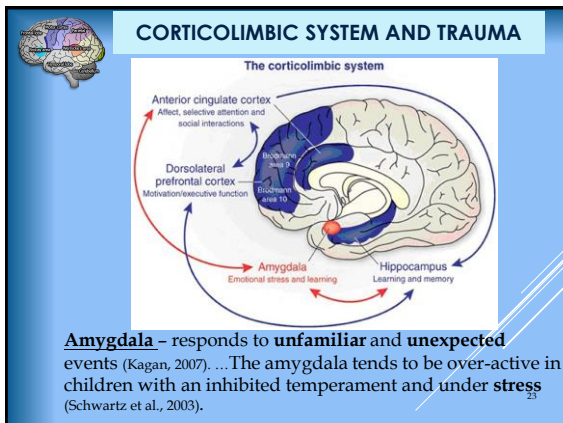
- Depersonalization** – a survival tactic by walling ourselves off emotionally from the traumatic event. There is a numbing of emotions and a cognitive dissociation takes place by freezing the mind and body (*dorsal vagus*). A precursor for developing **dissociative disorders**.
- Sensitization** – our nervous system becomes hyper-aroused and panic is easily triggered (*fight-flight*), as we become engulfed by fear and anxiety. **Depression, anxiety, PTSD, and mood disorders** are often the psychological manifestations of an easily triggered sympathetic nervous system.
- Adaptation** – the key to **resilience**, as this newer pathway (*ventral vagus*) inhibits older pathways and triggers calming influence of sympathetic nervous system through **social engagement and trust**.

* “The challenge of trauma is to re-establish ownership of the body and mind” - (Bessel Van Der Kolk, 2014)

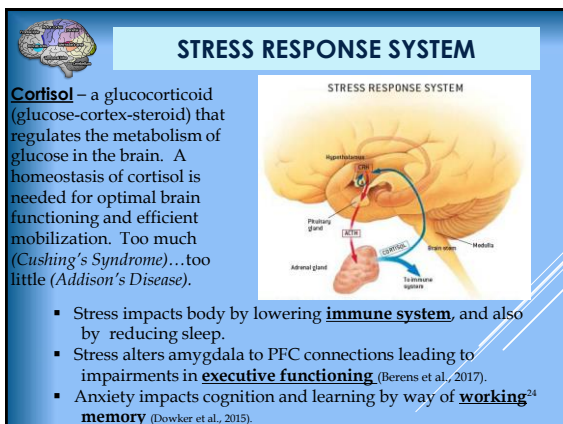
21

FEAR	ANXIETY
* Related to a tangible stimulus and immediate threat (i.e. snakes)	* Often irrational and related to anticipation of threat.
* Perpetuated by our nervous system	* Perpetuated by maladaptive cognitions.
* Sympathetic nervous system is triggered.	* Sympathetic nervous system is triggered.
*No specific temperament characteristics.	*Inhibited temperament driven by sensory threshold of amygdala leading to approach or withdrawal behaviors (Kagan, 2007).
*Over-active anterior cingulate leading to group conformity (Goldberg, 2018)	*Underactive anterior cingulate which cannot regulate amygdala and results in hyper-focus of internal states.

22

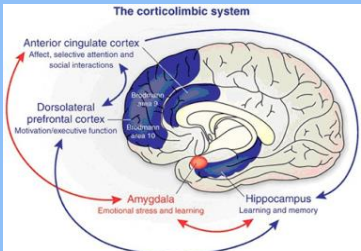


23



24

CORTICOLIMBIC SYSTEM AND TRAUMA



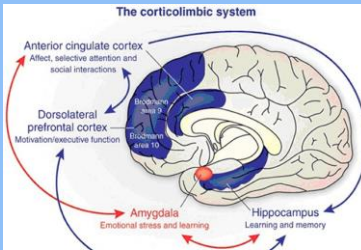
The corticolimbic system diagram shows the following components and functions:

- Anterior cingulate cortex**: Affect, selective attention and social interactions
- Dorsolateral prefrontal cortex**: Motivation/executive function
- Amygdala**: Emotional stress and learning
- Hippocampus**: Learning and memory

Hippocampus - A key **memory center** and more sensitive to cognitive than emotional memories. Helps to inhibit amygdala. **Chronic stress** from abuse or neglect releases cortisol which can reduce hippocampal volume (Johnston & Olson, 2015).

25

CORTICOLIMBIC SYSTEM AND TRAUMA



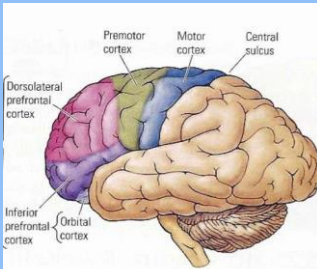
The corticolimbic system diagram shows the following components and functions:

- Anterior cingulate cortex**: Affect, selective attention and social interactions
- Dorsolateral prefrontal cortex**: Motivation/executive function
- Amygdala**: Emotional stress and learning
- Hippocampus**: Learning and memory

Anterior Cingulate Cortex - Directs our **attention inward** toward becoming overly aware of nervous system fluctuations and visceral responses (i.e. heart rate increases, breathing rate, perspiration, etc.)

26

CORTICOLIMBIC SYSTEM AND TRAUMA




The diagram shows the following components and functions:

- Premotor cortex**
- Motor cortex**
- Central sulcus**
- Dorsolateral prefrontal cortex**
- Inferior prefrontal cortex**
- Orbital cortex**

Orbito-Frontal Cortex - Forms an adaptive response to an emotional condition and when **stressed**, interprets visceral responses and unfamiliar environmental stimuli as possibly posing a threat (**emotional executive functions**).

27




SUMMARY OF TRAUMA ON THE BRAIN

(BERENS ET AL., 2017)

<p>Brain Alterations</p> <ul style="list-style-type: none"> * Global gray matter changes * Decreased volume in PFC and hippocampus. * Aberrant amygdala activity * Alterations in amygdala-PFC connectivity. * Systemic immune suppression * Impaired glucose regulation * Elevated cortisol levels leading to hyper and hypo-stress system responses. 	<p>Functional Implication</p> <ul style="list-style-type: none"> * Impairments in executive functions, working memory, and cognitive control. * Emotional dysregulation * Poor stress regulation * Increased risk of disease & sickness * Heightened risk for diabetes * Dysregulation of sympathetic and parasympathetic pathways.
--	--

28

28



MODIFIERS OF TRAUMA ON THE BRAIN

(BERENS ET AL., 2017; TRAUB & BOYNTON-JARRETT, 2017)


- Pre-existing health conditions
- Family structure, stability and supports
- Timing of stress (early critical periods are worst)
- Type of traumatic event (*i.e. sexual, emotional, physical, etc.*)
- Cumulative occurrences
- Access to mental health services
- Mental health of caregivers (*maternal*)
- Positive temperament
- Get back into a routine

Developing Resiliency?

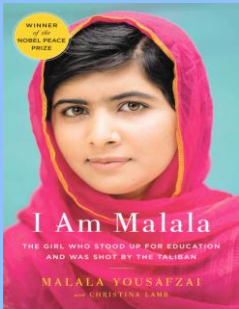
- * **Epigenetics** is the study of gene expression in the wake of environmental circumstances.

29

29




DEVELOPING RESILIENCY: MALALA YOUSAFZAI




Is **hope** the key to resiliency?

30

30



THE IMPACT OF HOPE




Curt P. Richter

- 1957- Curt Richter, a geneticist and psychologist at Johns Hopkins University was studying the physiology of survival for the navy.
- He first took a dozen domesticated rats, put them into jars half-filled with turbulent water, and watched them drown. 9 of 12 rats did not give up and swam for up to 48 hours before perishing.
- He had his graduate students capture 12 more rats from the streets of Baltimore. They were much more fierce and aggressive. Yet virtually all drowned within the first few minutes.
- He then tweaked the experiment...took wild rats and before they drowned...picked them up and coddled them. Afterwards, he put them back in the jar, and they survived much longer.

31

31



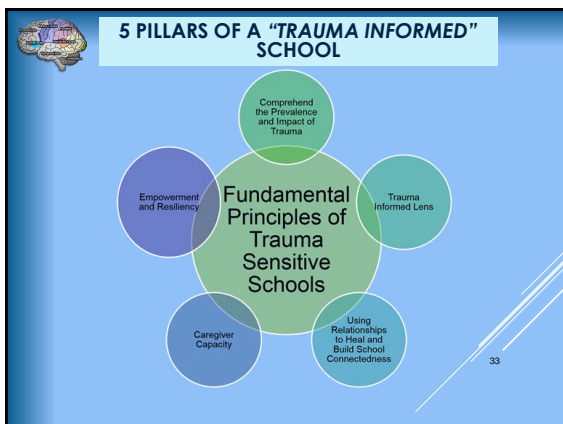
THE IMPACT OF HOPE

Complex Trauma - multiple traumatic experiences which occur in childhood and adolescence, including multiple occurrences of emotional abuse and neglect, sexual abuse, and physical abuse.

- Meta-analysis of 80 studies containing **12,252** survivors of child sexual abuse found the mean prevalence of sexual revictimization across studies was **47.9%**, suggesting that almost half of child sexual abuse survivors are sexually victimized in the future (Walker et al., 2019)
- Complex trauma recovery involves both **external factors** (i.e. access to mental health care, financial assistance, education, family support, etc...) and **internal protective factors** such as emotional competence, feelings of optimism, external attribution of blame, and **hope**.

32

32




33




1. UNDERSTANDING CHILDREN'S TRAUMATIC STRESS RESPONSES

(NCTSN, 2012)




1. Traumatic experiences are inherently complex: Trauma-exposed children experience subjective reactions that include changes in feelings, thoughts, and physiological responses; and concerns for the safety of others. The nature of children's reactions are influenced by their prior experience and developmental level. There is no signature emotional reaction that all children exhibit.

34



1. UNDERSTANDING CHILDREN'S TRAUMATIC STRESS RESPONSES

(NCTSN, 2012)



2. Danger and safety are core concerns in the lives of traumatized children: Exposure to trauma can make it more difficult for children to distinguish between safe and unsafe situations, and lead to significant changes in their own protective and risk-taking behavior. Children who continue to live in dangerous family and/or community ³⁵ circumstances may have greater difficulty recovering from a traumatic experience.

35



1. UNDERSTANDING CHILDREN'S TRAUMATIC STRESS RESPONSES

(NCTSN, 2012)



3. Traumatic experiences affect the family and broader caregiving systems: Traumatic experiences, losses, and ongoing danger can lead to serious disruptions in caregiver-child interactions and attachment relationships. Caregivers' own distress and concerns may impair their ability to support traumatized children.

36

36



1. UNDERSTANDING CHILDREN'S TRAUMATIC STRESS RESPONSES


(NCTSN, 2012)



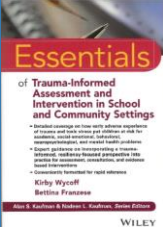
4. Developmental neurobiology underlies children's reactions to traumatic experiences: Exposure to multiple traumatic experiences carries a greater risk for significant neurobiological disturbances including impairments in memory, emotional regulation, and behavioral regulation.

37

37



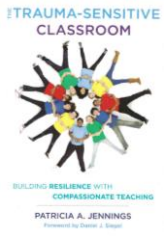
1. TRAUMA BOOK CLUB



Essentials
of Trauma-Informed
Assessment and
Intervention in School
and Community Settings

Kirby Weisell
Bettina Franzosa

WILEY

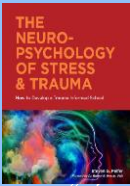


**TRAUMA-SENSITIVE
CLASSROOM**

BUILDING RESILIENCE WITH
COMPASSIONATE TEACHING

PATRICIA A. JENNINGS

Foreword by Bruce D. Wright




**THE
NEURO-
PSYCHOLOGY
OF STRESS
& TRAUMA**

David S. Reardon

38

38




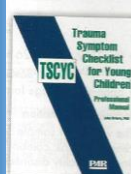
2. TRAUMA SCREENERS

(1) Measure Name	(2) Measure Type	(3) Audience	(4) ACES	(5) Strengths	(6) Limitations	(7) Other Considerations
Childhood Trauma Questionnaire [®]	Self-reported survey	12 years +	emotional abuse sexual abuse emotional neglect physical neglect	Satisfactory validity and reliability when compared with other methods such as staff observations.	Multiple primary studies report differing results for the appropriate structuring/interpreting of the questions.	Time: 5 minutes Fee: None Qualifications: Master's degree or equivalent
Juvenile Victimization Questionnaire-second version (JVQ-2) [®]	Structured interview and child self-reported survey	8-17 years	emotional abuse physical abuse sexual abuse emotional neglect physical neglect mother treated violently witnessed violence substance abuse	Demonstrated reliability with community and child welfare samples in the U.S. and wider populations.	None reported.	Time: 10-30 minutes Fee: None Qualifications: Experienced and educated, qualified professional for interpretation
Trauma Symptom Checklist for Children (TSCC; TSCC-A) [®]	Self-reported survey	8-18 years	emotional abuse physical abuse sexual abuse emotional neglect physical neglect mother treated violently	Several studies report that TSCC-A is a statistically reliable and valid tool that has been studied for large samples of racial and socio-economically diverse populations.	TSCC-C requires additional studies on reliability and validity in children under age 7. Studies evaluating TSCC-A may not be representative of the nationwide population due to their small and geographically limited sample populations. Mean scores of the results have varied greatly and no validated cut-off score has been established.	Time: 10 minutes Fee: \$10 for introductory kit Qualifications: Undergraduate training or baccalaureate degree with clinical training in use of psychological tests
Adolescent Dissociative Experiences Scale (A-DES) [®]	Self-reported survey	11-18 years	emotional abuse physical abuse sexual abuse emotional neglect physical neglect	Strong reliability and validity as reported by several studies.	Mean scores of the results have varied greatly and no validated cut-off score has been established.	Time: Unknown Fee: Minimal Qualifications: Undergraduate degree, clinical training

39

39

2. TRAUMA SCREENERS

➤ **Trauma Symptom Checklist for Children**

- 54 item self report checklist (15-20min)
- Ages 8-16
- Scoring software on PAR iconnect
- Anxiety, Depression, Anger, PTSD, Dissociation, and Sexual Concerns
- Gender appropriate norms

➤ **Trauma Symptom Checklist for Young Children**

- 3-12 years old
- Caretakers rate 90 symptoms on a 4 point scale (20 min)
- Eight clinical scales
- Focus on child abuse, peer assault, community violence.


40

40

3. CAREGIVER CAPACITY AND RESILIENCY

(TRAUS AND BOYNICION-JARRETT, 2017)



1. Positive appraisal style impacts executive functioning skills and facilitates cognitive restructuring.
2. Following trauma exposure, caregivers play a critical role influencing a child's overall social-emotional response and adaptation (McLeod et al., 2007).
 - a) Neglectful
 - b) Democratic
 - c) Authoritative
 - d) Authoritarian
3. Maternal mental health most influences coping
(*16 million children live with a depressed parent)
4. Family routines foster resilience.



41

41


3. MEASURING CAREGIVER CAPACITY AND RESILIENCY

- **Parenting Stress Index: 4th Edition**
 - *Ages 1-12
 - *120 item inventory focusing on child characteristics, parent characteristics, and situational life stressors.
 - *20 minutes
 - *On-line administration and scoring
- **Stress Index for Parents of Adolescents**
 - *11-19 years old
 - *112 items identifying parent-adolescent interactions.
 - *On-line administration and scoring


42

42




4. CLASSROOM ACCOMMODATIONS

- Extended time on tests and quizzes.
- Structure and routine (schedules and emotive responses)
- Preferential seating in class (by door if needed).
- Access to lecture notes when needed.
- Agenda/organization notebooks.
- Frequent breaks when needed.
- Use of a crisis pass.
- Alternative ways to demonstrate mastery (i.e. projects instead of tests)
- Allow for test re-takes to demonstrate subject mastery.
- Use of technology for note-taking and written assignments.
- Scheduling more challenging subjects in morning.
- Allow for partial school days.
- Awareness of trauma triggers.**
- Access to "In-school" coach.
- Do not penalize for school absences.




43

43



5. TEACHING RESILIENCY: MINDFULNESS




Mindfulness – focus on breathing from the diaphragm, not the chest, and exhaling on longer slower breaths.


- Strive for 6-8 breaths per minute.
- Practice breathing techniques when visualizing an anxiety provoking situation.
- Enhances parasympathetic nervous system.

44

44



5. TEACHING RESILIENCY: YOGA



Yoga – assumes the footprint of trauma is in the body and tissues.



- We cannot talk it out, and fear our own bodily sensations (Van Der Kolk, 2012).
- Pain, headaches, muscle tension, tics, panic attacks
- Some research (Albracht-Schulte & Robert-McComb, 2018) suggests Yoga can reduce anxiety and heart rate variability following a stressor, though the induced calmness wears off after 30-40 minutes. **More research needed!**

45

45

5. USING CBIT AND COGNITIVE RESTRUCTURING TO CHANGE THINKING PATTERNS

- Extremist**- all or none thinking. Everyone is either great or bad, or my emotions are either positive or negative and there is no nuance of in-between.
- Inflator** - always over-exaggerating anything bad that may happen and undervalue what is good.
- Mind Reader** - convinced that others have a bad opinion of you.
- Predictor** - always focused on the future and not the present, and convinced the future has negative outcomes.
- Blamer** - always blames others for our own misgivings and never accept responsibility.
- Perfectionist** - highly critical of others and constantly demeaning and pointing out faults in others.

46

46

5. TAKE TARGETED APP BREAKS



Snap, Breathe & Think
Snap, Breathe & Think
Snap, Breathe & Think
Snap, Breathe & Think
Snap, Breathe & Think

Take a Chill
Take a Chill
Take a Chill
Take a Chill
Take a Chill

THE ZONES OF REGULATION
THE ZONES OF REGULATION
THE ZONES OF REGULATION
THE ZONES OF REGULATION
THE ZONES OF REGULATION

Breethr
Breethr
Breethr
Breethr
Breethr

Calm
Calm
Calm
Calm
Calm

HEADSPACE
Headspace
Headspace
Headspace
Headspace

Square Breathing :
<https://www.youtube.com/watch?v=1FdZXwE6IRE>

47

47

5. NEUROFEEDBACK

Brain Waves: EEG Tracings


Beta (β)
13-30 Hz

Alpha (α)
8-13 Hz

Theta (θ)
4-8 Hz

Delta (δ)
0.5-4 Hz

Time (Secs.)
0 1 2 3 4



48

48

5. IS NEUROFEEDBACK A SHAM?

The Psychology of Neurofeedback: Clinical Intervention Even if Applied Placebo

Robert T. Talbot
MAGNET University and Chapman University

Arvid Raa
MAGNET University, The City of Vancouver for Mental Health Research, Montreal, Quebec, Canada, and Chapman University

Advances in neurofeedback have been demonstrating high effectiveness in treating a wide range of disorders, and neurofeedback, because of research and knowledge of psychophysiological processes, appears neurofeedback using electroencephalography (EEG) as the feedback signal. The use of neurofeedback from a specific brain signal as a training stimulus is the basis of neurofeedback. However, little research has been done on the psychological processes of neurofeedback. The authors suggest that the psychological processes of neurofeedback are not unique to neurofeedback, but rather, they are a function of the psychological processes of the feedback signal. The authors suggest that the psychological processes of neurofeedback are not unique to neurofeedback, but rather, they are a function of the psychological processes of the feedback signal. The authors suggest that the psychological processes of neurofeedback are not unique to neurofeedback, but rather, they are a function of the psychological processes of the feedback signal.

Keywords: self-regulation, psychological influences, neurofeedback, EEG, placebo

Whether a large number of studies suggest the neurofeedback using electroencephalography (EEG) as the signal and most widely discussed form of neurofeedback, or whether it is a function of the psychological processes of the feedback signal, the authors suggest that the psychological processes of neurofeedback are not unique to neurofeedback, but rather, they are a function of the psychological processes of the feedback signal. The authors suggest that the psychological processes of neurofeedback are not unique to neurofeedback, but rather, they are a function of the psychological processes of the feedback signal.

Does Neurofeedback Work?

Intentionally, EEG or other signals to train participants in regulation of the feedback signal (Talbot, 2010; Talbot, 2011; Talbot, 2012). The authors suggest that the psychological processes of neurofeedback are not unique to neurofeedback, but rather, they are a function of the psychological processes of the feedback signal. The authors suggest that the psychological processes of neurofeedback are not unique to neurofeedback, but rather, they are a function of the psychological processes of the feedback signal.

49

5. CANINE ASSISTED THERAPY



50

50

5. CANINE ASSISTED THERAPY




- Provide unconditional warmth and positive emotions.
- Animals do not try to give sage advice, but provide an emotional pathway to heal.
- Presence of a therapeutic animal promotes oxytocin secretion (bond), lower heart rate and blood pressure, and calmness (Beetz et al., 2012).
- Reduces social isolation and promotes sense of connectedness (O'Haire et al., 2015).

51

51

5. PBIS: CHANGE THE SCHOOL CULTURE

Positive Behavioral Interventions and Supports Pyramid
Adapted from: Swanson & Miller, 2009

Tier 3/Targeted
Includes: Individualized interventions for high-risk students

Tier 2/Selected
Classroom & Small Group Strategies
(10-20% of students)
Includes: Social skills groups, daily check-ins with adult, classroom behavior interventions

Tier 1/Universal
School-wide, Culturally Responsive Systems of Support, School-wide PBIS
(100% of students)
Includes: Expectations, ongoing school-wide expectations, social-emotional skills training

Source: Swanson & Miller, 2009

- Focus on prevention and not punishment.
- Establish universal rules, consequences, and school climate.
- Gather data to make decisions on children.
- Teach social-emotional academic learning.

52

52

SOCIAL EMOTIONAL ACADEMIC LEARNING

Self-Management
Managing emotions and behaviors to achieve one's goals

Self-Awareness
Recognizing one's emotions and values as well as one's strengths and challenges

Responsible Decision-Making
Making ethical, constructive choices about personal and social behavior

Relationship Skills
Forming positive relationships, working in teams, dealing effectively with conflict

Social Awareness
Showing understanding and empathy for others

Social & Emotional Learning

Is this the future of school psychology?

53

53

SUMMARY: 5 PILLARS OF TRAUMA INFORMED SCHOOLS

- Promote **awareness** of the impact of trauma:
 - In-service presentations
 - Brochures and pamphlets (NASP & NCTSN)
 - Parent workshops
- Develop a school wide **trauma screenings**.
- Empower parents**....do not blame them.
- De-escalate Stress** – mindfulness, visualize, stay in present, CBIT.
 - Structure and routine
 - Recognize trauma triggers
 - Design “safe” zones
- Academic **accommodations**.

54

54

TRAUMA MEASURES

"Thinking about Thinking"
Higher Reasoning
Executive Function

Prefrontal Cortex

9 Functions of the Prefrontal Cortex

1. Empathy
2. Insight
3. Response Flexibility
4. Emotion Regulation
5. Body Regulation
6. Morality
7. Intuition
8. Attuned Communication
9. Fear Modulation

Limbic Brain

1. Fight, flight, freeze stress response
2. Thinks, "Am I safe? Do people want me?"
3. Emotions live here

- Executive Functioning
- Memory
- Attention
- Social-Emotional Regulation

55

55

BEHAVIOR RATING INVENTORY OF EXECUTIVE FUNCTIONING (BRIEF2)

- **Behavior Regulation Index (BRI)**
 - Evaluates a child's ability to modulate behavior via appropriate inhibitory control. It is comprised of the **Inhibit** and **Self Monitor** scales.
- **Emotional Regulation Index (ERI)**
 - Evaluates a child's ability to regulate emotional responses and adjust to changes in the environment. It is comprised of the **Shift** and **Emotional Control** scales.
- **Cognitive Regulation Index (CRI)**
 - Evaluates a child's ability to manage cognitive processes and problem solve effectively. Includes **Initiate**, **Working Memory**, **Planning**, **Task-Monitor**, and **Organization** scales.

56

56

MEMORY TESTS

WIDE RANGE ASSESSMENT OF MEMORY AND LEARNING : 2nd Edition (WRAML-2)


- Visual and Verbal Memory Tasks
- **Memorize information in context and isolation.**
- Attention-Concentration Index
- Immediate Memory
- Delayed Memory
- Recognition Memory
- Ages 5-90

CHILD AND ADOLESCENT MEMORY PROFILE (CHAMP)


- 35 minutes
- Visual and Verbal Memory Tasks
- Immediate and Delayed Memory
- **Memorize information in context and isolation.**
- Ages 5-21
- Screening Index

57

57



TEST OF EVERYDAY ATTENTION FOR CHILDREN; 2ND EDITION (TEA-CH2)




- 5-7 years old. Normed on 394 children in UK.
- 8-16 years old. Normed on 621 children in UK.
- Measures the cognitive components of attention:
 - Selective attention**
 - Sustained attention**
 - Switching attention**
- Both paper and pencil and computerized tasks.
- Measures reaction time and also auditory vs. visual attention.
- 40-45 minutes

58

58

SOCIAL-EMOTIONAL AND BEHAVIORAL ASSESSMENTS		
TEST	AGE RANGE	AUTHORS
BASC-3 Teacher Rating Scale	2-21	Randy Kamphouse & Cecil Reynolds
BASC-3 Parent Rating Scale	2-21	
BASC-3 Self-Report Scale	6-college	
BASC-3 Behavioral and Emotional Screen System	3-18	Keith Conners
Conners Comprehensive Behavior Rating Scales	6-18	
Achenbach System of Empirically Based Assessment (ASEBA)	6-18	Thomas Achenbach & Leslie Rescorla
Devereux Behavior Rating Scale	5-18	Jack Naglieri, Paul LeBuffe, Steven Pfeiffer
Beck Youth Inventory II- (anxiety, depression, anger, disruptive behavior, self concept)	7-18	Judith & Aaron Beck
Children's Depression Inventory	7-17	Maria Kovacs
Revised Children's Manifest Anxiety Scale - 2	6-19	Cecil Reynolds & Bert Richmond
Multidimensional Anxiety Scale for Children-2	8-19	
RCDS-2/RADS-2	7-13/11-20	William Reynolds
Personality Inventory for Children-2 nd Edition (caregiver observations)	5-19	David Lachar & Christian Gruber
*Millon Adolescent Clinical Inventory	13-19	Theodore Millon
*MMPI-A	14-18	Bulcher et al.
*Personality Assessment Inventory	11-18	Lesley Morey

59




PERSONALITY ASSESSMENT INVENTORY (PAI)

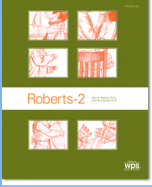
- PAI-A & PAI use the same scales and subscales
- Adolescent item set is a derivative of the adult, with fewer items
- Anxiety subtypes (i.e. cognitive, affective, physiological) **anxiety related disorders (i.e. PTSD)**, depression, thought disorders, social detachment, borderline personality, antisocial behaviors, aggression, and substance abuse,
- 264 items on PAI-A
- 12-18 years
- Treatment recommendations included with computerized scoring system.
- Published in 2007...Lesley Moray

60

60




ROBERTS APPERCEPTION TEST-2ND EDITION




- Projective measure assessing maladaptive or atypical social perception.
- Record student responses for scoring.
- 11 picture cards depicting common experiences.
- Scoring involves problem identification, resolution, emotion, outcome, atypical responses.
- Roberts 2 computer scoring program and clinical casebook.

61

61




TRAUMA AND INTELLECTUAL DEVELOPMENT



- An 8 year longitudinal study of children who experienced interpersonal trauma by their primary caregiver, Enlow and colleagues (2012) found these children scored one-half of a standard deviation (*i.e. 6-8 points*) lower on IQ tests even after controlling for maternal IQ, birth-weight, and the home environment.
- Earlier studies (Delaney-Black et al., 2002) that found trauma related distress and violence exposure lead to a **7.5 point** decrement in IQ, and approximately a 10 point drop in reading scores on standardized achievement tests.

62

62




KEYS TO A "TRAUMA INFORMED" ASSESSMENT

1. Aggressively measure the **frontal lobes** by selecting tests of attention, memory, and executive functions.
2. Balance **rating scales** with **direct observations**.
 - a) **Classroom observations** should focus on time on task, work production, and social interactions.
 - b) **Testing observations** should focus on fatigue, attention drift, blunted affect, and trust.
3. **Do not** rely on just one data source (*i.e. projectives*).
4. **Developmental history** may be the most essential component of the report.
5. Consider all current **stressors** (*i.e. grades, friendships, poverty, teacher, physical, environment, etc.*)
6. Use **DSM5** criteria to establish a condition, **IDEA** to establish eligibility for special education.
7. Avoid using simple **correlations** to explain complex emotional and behavioral problems.


63

63




CONCLUDING THOUGHTS


- 1) All children **respond differently** to stress and trauma in their lives. Therefore, it is important for schools to have multi-tiered systems of emotional support for all children.
- 2) Schools should be at the forefront for teaching **social-emotional academic learning** and **adaptive responses** to stress and trauma.
- 3) Being a “**trauma-informed**” school recognizes the need for parent communication as well as community support.
- 4) Be a **change agent** for kids!
 - a. Be a role model
 - b. Accurate assessment
 - c. Intervention provider
 - d. Build a relationship ☺



64



LET'S STAY CONNECTED



Steven G. Feifer, D.Ed., ABSNP
Licensed Psychologist

Workshops: feifer@comcast.net

Books: www.schoolneuropsychpress.com

Trauma Links: *<https://www.nasponline.org/>
 *<https://www.parentcenterhub.org/national-child-traumatic-stress-network/>
 *<https://news.istd.org/animal-assisted-therapy-for-trauma/>
 *<https://www.mindful.org/the-science-of-trauma-mindfulness-ptsd/>
 *<https://www.wiley.com/enus/Essentials+of+Trauma+Informed+Assessment+and+Intervention+in+School+and+Community+Settings-p-9781119474612>
 *<https://www.amazon.com/Trauma-Sensitive-Classroom-Building-Resilience-Compassionate/dp/0359371180/>

65

65
