"My Dog will Chase Him Away"
Pediatric Trauma Response, Resilience, and Psychotherapeutic Strategies

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Disclosure

- No financial interests to disclose

Learning Objectives

- Demonstrate understanding of the general prevalence of post-traumatic stress disorder, depression, and resilience among individuals exposed to trauma
- Describe an integrated model of resilience development and strengthening
- Describe the rationale, strategy, and efficacy of Trauma-Focused Cognitive Behavioral Therapy

Emily

15yo hospitalized for depression with suicide attempt

- Physically assaulted
- Sexually assaulted
- Current familial stress
- Self-harm and risky behaviors in context of identity development
- Nightmares, intrusive thoughts, avoidance, irritability, impaired concentration, sadness, fear, hopelessness, and self-criticism

Prevalence of Exposure to Potential Trauma

- American youth, by 16yo:
  - 2002: 25% exposed to "extreme stressors" Costello EJ 2002
  - 2007: 68% Copeland 2007
  - 10-16yos: >40% "violent victimization," ~10% sexual assault Boney-McCoy, 1995, Singer 1995.
- General risk factors: Costello 2002.
  - Previous adverse events, family relationship problems (OR = 1.5), parental psychopathology (OR = 1.8)
    - Girls: parental psychopathology OR = 3.2, impoverished or limited education OR = 2.3, parental crimes OR = 1.7
    - Boys: parental psychopathology OR = 2.1
- 60-90% Sri Lankan youth experienced war-related trauma and 70 – 90% tsunami-related trauma by 2006, 51% two trauma types (war, tsunami, family violence, parental loss) Catani 2010.

Pediatric Post-Traumatic Stress Disorder

- Diagnostic Challenge
  - Express experience
  - Avoidance
- Youth symptoms
  - Severe and generalized functional dysregulation (emotional, interpersonal, behavioral, cognitive)
  - Regression (toileting, speech)
  - Repetitive play
  - New fears (dark, separation); panic attacks immediately after exposure possible predictor
  - Increased attachment seeking
  - Defiance, aggression, oppositionality
  - Dysphoria
  - Suicide attempts and non-suicidal self-harm
  - Substance misuse
  - Indiscriminant sexualized behaviors or high risk sexual behaviors
  - No symptoms
- Misdiagnosis as ADHD, disruptive behavior disorders, other anxiety disorders, psychosis, depression, bipolar, primary substance misuse, somatoform or somatic symptoms, borderline personality trait behaviors
- Comorbidity with onset of independent psychiatric illness

•DeVoe, E 2011.
•Hukkelberg 2011.
•JAACAP Practice Parameter for the Assessment and Treatment of Children and Adolescents with Posttraumatic Stress Disorder, 2010

PTSD DIAGNOSIS

DSM-IV-TR

- Criterion A:

Exposure to a traumatic event in which both of the following were present:

(1) the person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others

(2) the person's response involved intense fear, helplessness, or horror. Note: In children, this may be expressed instead by disorganized or agitated behavior

DSM-V

- Criterion A:

Exposed to one or more of the following event(s): death or threatened death, actual or threatened serious injury, or actual or threatened sexual violation, in ≥1 of the following ways:

1. Experiencing the event(s) him/herself
2. Witnessing, in person, the event(s) as they occurred to others
3. Learning that the event(s) occurred to a close relative or close friend; in such cases, the actual or threatened death must have been violent or accidental
4. Experiencing repeated or extreme exposure to aversive details of the event(s) (e.g., first responders collecting body parts; police officers repeatedly exposed to details of child abuse); this does not apply to exposure through electronic media, television, movies, or pictures, unless this exposure is work related.
5. Under consideration: for children, loss of a parent or other attachment figure

PTSD DIAGNOSIS

DSM-IV-TR

- Criterion B: Persistently re-experienced in ≥1 of the following ways:

1. Recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions. Note: In young children, repetitive play may occur in which themes or aspects of the trauma are expressed.
2. Recurrent distressing dreams of the event. Note: In children, there may be frightening dreams without recognizable content.
3. Acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations, and dissociative flashback episodes, including those that occur on awakening or when intoxicated). Note: In young children, trauma-specific reenactment may occur.
4. Intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event
5. Physiological reactivity on exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event

DSM-V

- Criterion B: Intrusion symptoms, ≥1 of the following:

1. Spontaneous or cued recurrent, involuntary, and intrusive distressing memories of the traumatic event(s). Note: In children, repetitive play may occur in which themes or aspects of the traumatic event(s) are expressed.
2. Recurrent distressing dreams in which the content and/or affect of the dream is related to the event(s). Note: In children, there may be frightening dreams without recognizable content.
3. Dissociative reactions (e.g., flashbacks) in which the individual feels or acts as if the traumatic event(s) were recurring (Such reactions may occur on a continuum, with the most extreme expression being a complete loss of awareness of present surroundings.) Note: In children, trauma-specific reenactment may occur in play.
4. Intense or prolonged psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event(s)
5. Marked physiological reactions to reminders of the traumatic event(s)

PTSD DIAGNOSIS

DSM-IV-TR

- Criterion C: Persistent avoidance and numbing of general responsiveness, ≥3 of the following:

1. Efforts to avoid thoughts, feelings, or conversations associated with the trauma
2. Efforts to avoid activities, places, or people that arouse recollections of the trauma

DSM-V

- Criterion C: Persistent avoidance , ≥1 of the following:

1. Avoids internal reminders (thoughts, feelings, or physical sensations) that arouse recollections of the traumatic event(s)
2. Avoids external reminders (people, places, conversations, activities, objects, situations) that arouse recollections of the traumatic event(s).

PTSD DIAGNOSIS

DSM-IV-TR

DSM-V

- Criterion C: Persistent avoidance and numbing of general responsiveness, ≥3 of the following:

1. Inability to recall an important aspect of the trauma
2. Markedly diminished interest or participation in significant activities
3. Feeling of detachment or estrangement from others
4. Restricted range of affect (e.g., unable to have loving feelings)
5. Sense of a foreshortened future (e.g., does not expect to have a career, marriage, children, or a normal life span)

- Criterion D: Negative alterations in cognitions and mood , ≥3 of the following (in children ≥2):

1. Inability to remember an important aspect of the traumatic event(s) (typically dissociative amnesia; not due to head injury, alcohol, or drugs).
2. Persistent and exaggerated negative expectations about one's self, others, or the world (e.g., "I am bad," "no one can be trusted," "I've lost my soul forever," "my whole nervous system is permanently ruined," "the world is completely dangerous").
3. Persistent distorted blame of self or others about the cause or consequences of the traumatic event(s)
4. Pervasive negative emotional state -- for example: fear, horror, anger, guilt, or shame
5. Markedly diminished interest or participation in significant activities.
6. Feeling of detachment or estrangement from others.
7. Persistent inability to experience positive emotions (e.g., unable to have loving feelings, psychic numbing)

PTSD DIAGNOSIS

DSM-IV-TR

DSM-V

- Criterion D: Persistent symptoms of increased arousal, ≥2 of the following:

1. Difficulty falling or staying asleep
2. Irritability or outbursts of anger
3. Difficulty concentrating
4. Hypervigilance
5. Exaggerated startle response

- Criterion E: Alterations in arousal and reactivity ≥3 or more of the following (in children, ≥2):

1. Irritable or aggressive behavior
2. Reckless or self-destructive behavior
3. Hypervigilance
4. Exaggerated startle response
5. Problems with concentration
6. Sleep disturbance

PTSD DIAGNOSIS

DSM-IV-TR

- Criterion E: Duration of the disturbance ≥1 month.
- Criterion F: The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.
- Specify if:
  - Acute: Duration <3 months
  - Chronic: Duration ≥3 months
- Specify if:
  - With Delayed Onset: Onset ≥6 months after the stressor

DSM-V

- Criterion F: Duration of the disturbance ≥1 month.
- Criterion G: The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.
- Criterion H: The disturbance is not due to the direct physiological effects of a substance (e.g., medication or alcohol) or a general medical condition (e.g., traumatic brain injury, coma).
- Specify if:
  - With Delayed Onset: Diagnostic threshold exceeded ≥6 months after the stressor (although onset of some symptoms may occur sooner than this).

PTSD Incidence & Prevalence: 9/11

- Community sample, 1-2mo after 9/11:
  PTSD = 7.5% - 11%, MDD = 9.7% - 12.4%
- 4-5mo after 9/11: 18% 4-7yo NYC residents
- 6mo after 9/11: 7.5 – 26.8% of 10 – 18yo NYC residents
- ~1yr after: PTSD = 11% among directly exposed, 14% of youth ≤5yo, 20.5% children who lost parent, MDD = 29.2% among those who knew a deceased
- 2-3yr after: 3.8% - 12.5%,among residents of Manhattan generally and Lower Manhattan specifically , 35% Chinatown schoolchildren

•DeVoe 2011.
•Neria 2011.

PTSD Incidence: Ugandan Child Soldiers

- 330 former Ugandan child soldiers
  - Abducted 10.8yrs
  - 19.8mo in war
  - 42% primarily front line
  - 91% beaten
  - 26% raped
  - 88% witnessed murder
  - 53% killed
  - 59% abducted other children
  - 81% escaped
  - 43% double orphans, 37% single orphans

- 27.6% resilient (33% PTSD, 36.4% MDD, 18.5% both)

Klasen 2010.

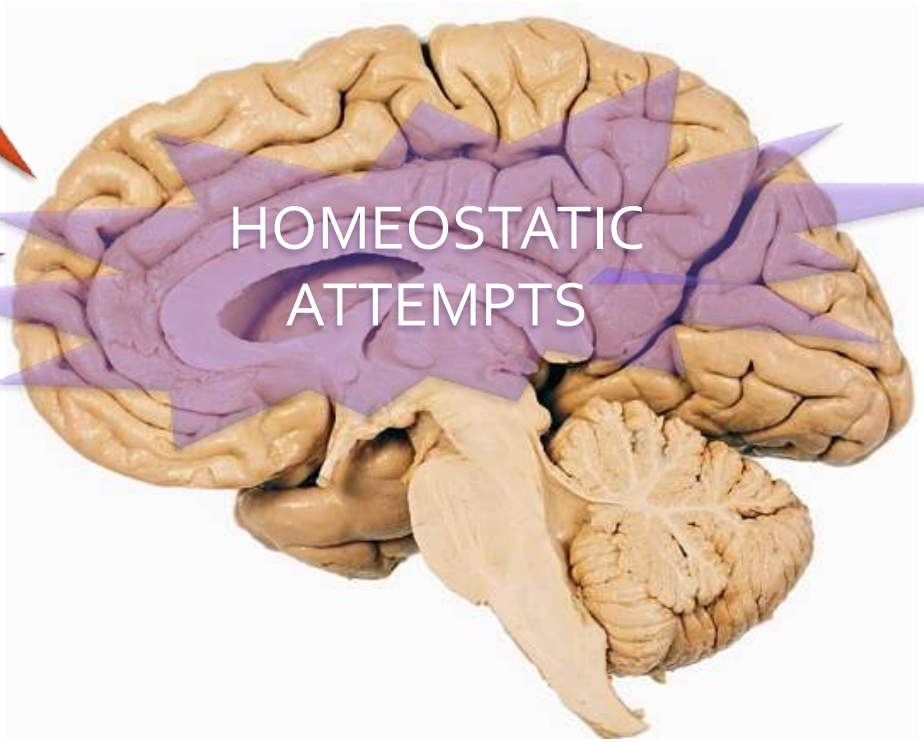
PTSD Incidence & Prevalence

- 20-30% youth develop symptoms of PTSD JAACAP, Catani, Elbert
- 68% trauma exposed, 9% painful recall, 2% subclinical PTSD, 0.4% PTSD Copeland, 2007
- Risk Factors
  - Severity of trauma exposure: rape, physical assault, sexual coercion
  - Accumulation of traumas
  - Pre-existing psychiatric illness
  - Parental psychiatric illness
  - Limited support
  - Environmental adversities
  - Female gender
  - Age
- Natural course unknown
- Traumas and risk factors accumulate

•Catani 2005, 2010.
•Copeland 2007, 2010.
•Elbert 2008.
•JAACAP Practice Parameter for the Assessment and Treatment of Children and Adolescents with Posttraumatic Stress Disorder, 2010.

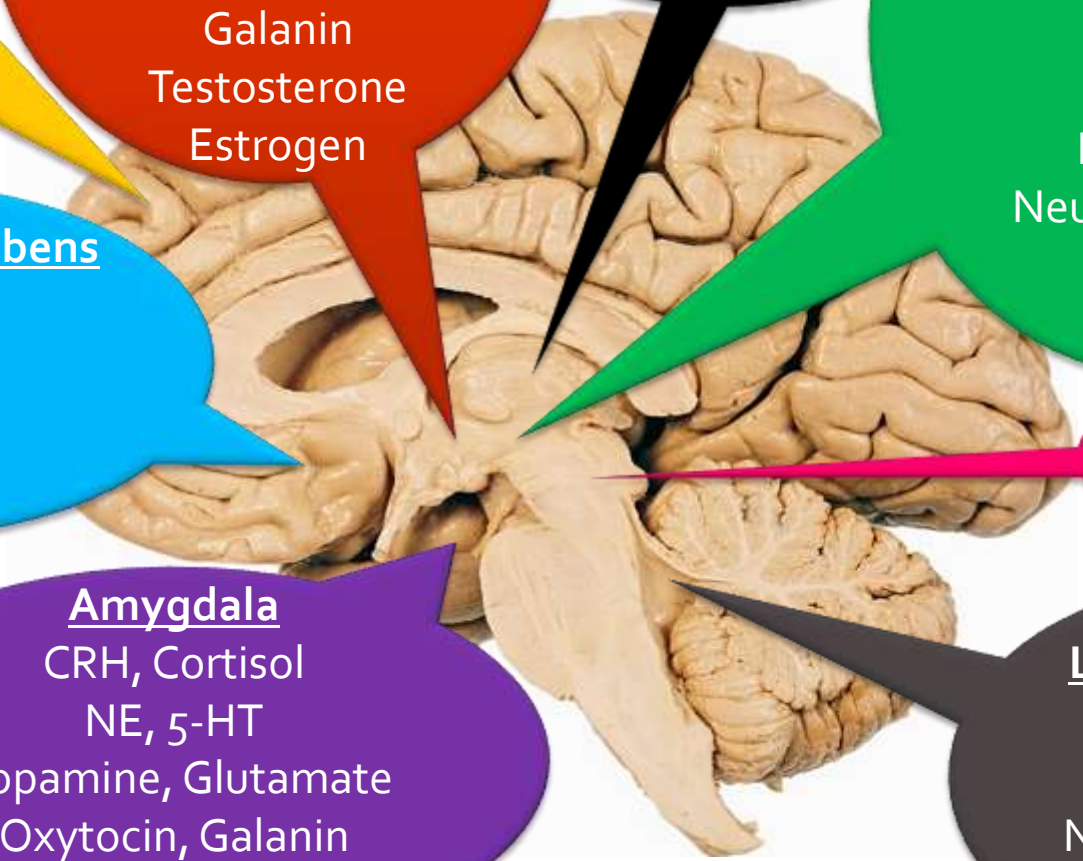
Physiology of Stress

STRESS



ALLOSTATIC LOAD

Neurobiology of Stress Processing



PFC
CRH
Cortisol
NE
Dopamine
5-HT
GABA
Galanin

Hypothalamus
CRH
Cortisol
NE
DHEA
Neuropeptide Y
Galanin
Testosterone
Estrogen

Thalamus
CRH

Hippocampus
CRH
Cortisol
NE
5-HT
GABA
BDNF
Estrogen
Neuropeptide Y
Galanin
? DHEA

Nucleus Accumbens
CRH
Dopamine
Glutamate
Oxytocin

VTA
Dopamine

Amygdala
CRH, Cortisol
NE, 5-HT
Dopamine, Glutamate
Oxytocin, Galanin
Neuropeptide Y

Locus Ceruleus
CRH
NE
Neuropeptide Y
Galanin

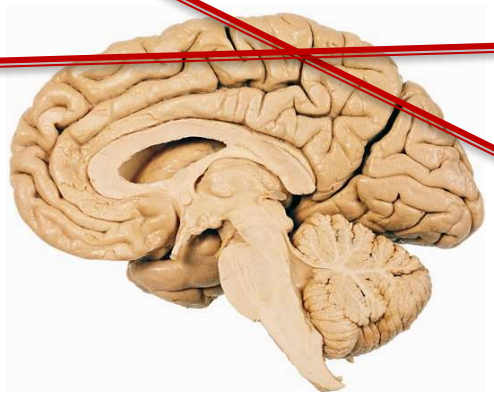
- Charney 2004.
- Feder A 2009.
- Gillespie C 2009.

HOMEOSTATIC ATTEMPTS

Anxiogenic:

- CRH-1
- Cortisol
- NE
- 5-HT_{2A}
- Substance P
- FKBP5

CRH



Anxiolytic:

- CRH-2
- DHEA
- 5-HT_{1A}
- Neuropeptide Y
- Galanin
- Testosterone
- Oxytocin
- Vasopressin
- K^+ channels in VTA

- Dopamine
- BDNF
- Cholecystokinin
- Voltage-gated Ca^{++} channels
- Estrogen
- Substance P
- GABA
- Glutamate
- Mirror neurons

PTSD Incidence: Ugandan Child Soldiers

330 former Ugandan child soldiers

- Resilience Predictors:
  - Spiritual Support
  - Fewer guilt and revenge cognitions
  - Slightly younger age

Klasen 2010.

Resilience

- Positive self-concept
- Effective strategies to attach/bond
  - Social expressiveness
  - Ability to regulate emotions
- Opportunities to form supportive relationships
  - Family and caregiver support
  - Low parental PTSD
  - Community support
- Creativity, flexibility, determination
  - Flexible adaptation, re-framing, transition from traumatic helplessness to learned helpfulness
  - Active, pragmatic coping
  - Internal locus of control
- Ability to confront fear and perform effectively
- Resilient response to previous life stressors
  - Stress inoculation
- Structure
- Optimism and positive emotionality
  - Life purpose, meaning, spirituality, moral code
- Altruism
- Humor
- Education
  - ?Intelligence
- Age
- Gender? Culture? Spirituality? Religion?

•Catani 2010. Charney 2004. Feder 2009. Gillespie 2009. Golse 2006. Hansson 2008. JAACAP Practice Parameter for the Assessment and Treatment of Children and Adolescents with Posttraumatic Stress Disorder, 2010. Luthar 1991.

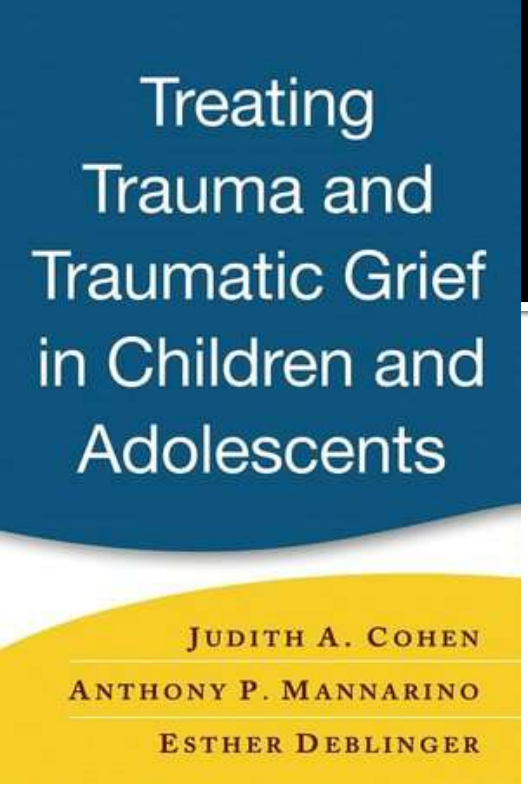
Resilience

- Process of absorption, effective processing, release of stress, adaptation
- Mediated by intrinsic and extrinsic factors
- Resilience hopefully leads to greater health and courage

Trauma-Focused Cognitive Behavior Therapy

- Judith Cohen, MD
  - Medical Director, Center for Traumatic Stress in Children & Adolescents, Allegheny General Hospital in Pittsburgh and Professor of Psychiatry at Drexel University College of Medicine.
  - AACAP Practice Parameter for the Assessment and Treatment of Children and Adolescents with Posttraumatic Stress Disorder, 2010
- Esther Deblinger , PhD
  - Co-founder , co-director of]New Jersey Child Abuse Research Education and Service (CARES) Institute Professor University of Medicine and Dentistry of New Jersey - School of Osteopathic Medicine.
- Anthony Mannarino, PhD
  - Chairman, Department of Psychiatry, Director of the Center for Traumatic Stress in Children and Adolescents, Allegheny General Hospital, Pittsburgh and Professor of Psychiatry at Drexel University College of Medicine.

- "Exemplary Program Award" 2001, U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration.
- Highest classification for evidence based practice by the U.S. Department of Justice sponsored report, Child Physical and Sexual Abuse: Guidelines for Treatment.
- tfcbt.musc.edu



Trauma-Focused Cognitive Behavior Therapy

- Exposure and re-experiencing of traumatic memories
- Reduce symptoms and build resiliency
  - Post-traumatic stress
  - Depression
  - Anxiety, phobias
  - Disruptive behaviors
- Include primary caregivers in treatment, strengthen relationship
- 3-17yo
- RCTs, N > 500: superior to waitlist control, community standard, non-directed supportive, child-centered

TF-CBT: Structure

Gradual Exposure

Sessions 1 – 4

- ❑**P**sychoeducation and Parenting skills
- ❑**R**elaxation
- ❑**A**ffective expression and regulation
- ❑**C**ognitive Coping

Sessions 5 - 8

- ❑**T**rauma narrative and processing
- ❑**I**n vivo exposure

Sessions 9 - 12

- ❑**C**onjoint caregiver + youth sessions
- ❑**E**nhancing safety and future development

TF-CBT: Structure

Gradual Exposure

P.R.A.C.T.I.C.E.

Sessions 1 – 4

- **P**sychoeducation and Parenting skills
- **R**elaxation
- **A**ffective expression and regulation
- **C**ognitive Coping

Sessions 5 - 8

- **T**rauma narrative and processing
- **I**n vivo exposure

Sessions 9 - 12

- **C**onjoint caregiver + youth sessions
- **E**nhancing safety and future development

TF-CBT: Structure

- PTS Symptom Assessment:
  - Child PTSD Symptom Scale - Foa: 8 – 18yo
  - UCLA PTSD Reaction Index - Frederick, Pynoos, & Nader : ≥ 7yo
  - Pediatric Symptom Checklist -17 – Gardner & Kelleher: 6 – 16yo
- Parenting Style:
  - Alabama Parenting Questionnaire – Shelton, Frick, & Wooton

TF-CBT: Structure

Gradual Exposure

P.R.A.C.T.I.C.E.

- **P**sychoeducation and Parenting skills
  - **Accurate information: prevalence, risks for occurrence, common responses, treatment options, outcomes of treatment**
  - **Behavioral parenting strategies, caregiver efficacy and empowerment: praise, selective attention, developmentally appropriate, logical consequences, "consistency, predictability, and follow-through"**

TF-CBT: Structure

Gradual Exposure

P.R.A.C.T.I.C.E.

- **R**elaxation
  - Physiologic modulation
  - Home practice

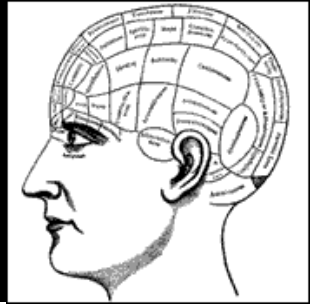
TF-CBT: Structure

Gradual Exposure

P.R.A.C.T.I.C.E.

- **A**ffective expression and regulation
  - Emotion regulation
  - Identify emotions, triggers, intensity (SUDS)
  - Effective expression of aversive emotions
  - Increasing positive emotions
  - Awareness and acceptance
  - Self-calming, problem solving, improving social interactions
  - Home practice

TF-CBT: Structure



Gradual Exposure

P.R.A.C.T.I.C.E.

- **C**ognitive Coping
  - Education about theory, cognitive triangle
  - Cognitive triggers
  - Cognitive distortions & replacement thoughts: "Dysfunctional thoughts are permanent, pervasive, too personal"
  - Accurate and helpful
  - Home practice

TF-CBT: Structure

Gradual Exposure

P.R.A.C.T.I.C.E.

- Trauma narrative and processing
  - Start as secretary
  - Iterative covert exposure, adding details including cognitive and emotional responses
  - Conjointly decide which traumas to discuss AND ensure most challenging discussed
- In vivo exposure
  - Overcome avoided triggers, as safe

TF-CBT: Structure

Gradual Exposure

P.R.A.C.T.I.C.E.

- **C**onjoint caregiver + youth sessions
  - Psychoeducation, therapy activities, communication, share trauma narrative
- **E**nhancing safety and future development
  - Reassess sense of safety
  - Assertiveness, problem-solving in stressful situations, conflict resolution, bullying, sex education, safety plan, support network

Adjunctive Strategies

IMAGERY REHEARSAL THERAPY

- Nightmares resultant from traumatic exposure & learned behaviors
- Exposure, abreaction, mastery

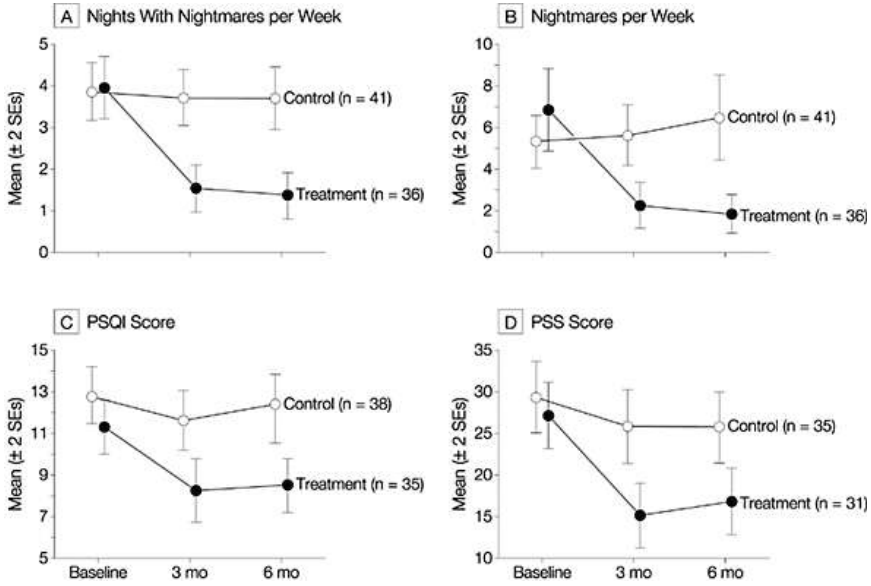
MEDICATION

- SSRIs
  - Citalopram?
  - Fluoxetine?

Imagery Rehearsal Therapy

- Clinical Evidence – Emily
- Literature
  - 6 – 11yo, RCT, n = 10, reduced NMs and anxiety. Simard 2009.
- Adults: 50 – 80% NM reduction
  - RCT, n = 168, IRT reduced nightmares, improved sleep. Krakow 2001.
  - Self-guided computer intervention, 6wk, n = 103, 42 wk sustained improvement. Lancee 2011.

Main Outcome Variables at Baseline, 3-Month, and 6-Month Follow-up Pittsburgh Sleep Quality Index (PSQI) & PTSD Symptom Scale (PSS).



Krakow, B. et al. JAMA 2001;286:537-545

Thank you

- Shannon Dorsey, PhD
  - Assistant Professor, Department of Psychiatry and Behavioral Sciences at the University of Washington
  - Principle Investigator of Fostering Hope
  - Co-director of the Washington State TF-CBT and CBT Plus Initiative