

**COGNITIVE BEHAVIORAL TREATMENT OF STUDENTS WHO HAVE
EXPERIENCED MULTIPLE ADVERSE CHILDHOOD EXPERIENCES
AND WAYS TO BOLSTER THEIR RESILIENCE**

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TREATMENT OF CHILDREN WHO HAVE EXPERIENCED TRAUMATIC AND VICTIMIZING EXPERIENCES

(VISIT <http://www.musc.edu.tfcbt> for a discussion of TRAUMA FOCUSED COGNITIVE BEHAVIOR THERAPY)

1 ASSESSMENT PROCEDURES OF CHILDREN AND FAMILY MEMBERS

2. TRAUMA FOCUSED COGNITIVE BEHAVIOR THERAPY PRACTICE -- A MNEMONIC SUMMARIZES THE TREATMENT PROCEDURES

P -- PSYCHO-EDUCATION AND PARENTING SKILLS

R -- RELAXATION

A -- AFFECT EXPRESSION AND REGULATION

C-- COGNITIVE COPING

T-- TRAUMA NARRATIVE AND PROCESSING

I --IN VIVO GRADUAL EXPOSURE

C-- CONJOINT PARENT-CHILD SESSIONS

E--ENHANCING SAFETY AND FUTURE DEVELOPMENT

TF-CBT A PHASE-ORIENTED INTERVENTION

SESSIONS 1 TO 4 PRAC

SESSIONS 5 TO 8 TI

SESSIONS 9 TO 12 CE

TF-CBT has been applied to children as young as 3 to youth of 18. Conducted weekly over several weeks. Treatment usually entails individual sessions with child and parallel sessions with the caregiver. The same therapist sees both the child and the caregiver and later conducts joint sessions when sharing and processing the trauma narrative. There is a direct discussion and processing of traumatic experiences.

A number of children's story books and play therapy procedures may be used. A variety of emotion regulation skills training procedures and parent training procedures are often included.

3. ALTERNATIVE TREATMENT APPROACHES

USE OF COGNITIVE BEHAVIOR PLAY THERAPY AND ART EXPRESSIVE PROCEDURES

4. BUILD UPON THE CHILD'S STRENGTHS AND BOLSTER RESILIENCE IN A CULTURALLY SENSITIVE MANNER

5. BUILD IN PROTECTIVE FACTORS: HOW TO INVOLVE THE SCHOOL IN THE TREATMENT PROCESS

EVIDENCE OF RESILIENCE

*Trauma is everywhere, but so is resilience
The good stuff is more important than the bad stuff
"In spite of behaviors"*

Resilience is a positive adaptation despite adversity. Some facts about resilience.

1. Individuals can be resilient at one time in their lives, but not at other times.
2. Resilience is not an all or none phenomenon. Individuals can be resilient in one area of their lives, but not in other areas of their lives.
3. Resilience (positive emotions) and trauma reactions (negative emotions) can coexist, side-by-side.
4. Resilience does not come from rare, special or extraordinary qualities or processes. Resilience develops from the “everyday magic of ordinary resources.” Resilience is not a sign of exceptional strengths, but a fundamental feature of everyday coping skills (Masten, 2014).
5. Resilience rests fundamentally on relationships. Attachment figures act as regulators of stress and provide a secure base. Bystanders provide “social capital”, nurture an adaptive capacity, and provide a sense of security. They foster mastery motivation and a sense of self-efficacy.
6. Resilience-engendering behaviors and positive emotions such as optimism, gratitude, forgiveness, awe, and the like, can contribute to positive neurobiological changes (brain chemistry and structural alterations), and even impact gene expression.
7. Resilience is more accessible and available to some people than for others, but everyone can strengthen their level of resilience and “islands of competence”.

POSSIBLE MEDIATING MECHANISMS

- Exposure to multiple diverse traumatic victimizing experiences can alter brain architecture and function, derail developmental “wear and tear” on the body. (Allostatic Load)
- Neurobiological changes resulting from exposure to Adverse Childhood Experiences (ACE’s) include alterations to the amygdala, hippocampus, anterior cingulate prefrontal cortex, nucleus accumbens, and at the neurochemical level alterations including dopamine, norepinephrine, epinephrine, cortisol, serotonin brain-derived neutrophic factor, endocannabinoids, glutamate and neuropeptides.
- When a child experiences adversity early in life their monocytes and macrophages (types of white blood cells) become calibrated to respond to future threats with a heightened pain inflammatory response, and by influencing the hormonal system and dysregulation of cortisol levels.
- Traumatic stress may alter the organization and “tuning” of multiple stress response systems, including the immune system, the autonomic system and the hypothalamic-pituitary-adrenal (HPA) axis and alter gene expression. For example, childhood maltreatment sensitizes the amygdala to over respond to threat.
- Childhood adversity has been associated with shorter telomeres. Telomeres are receptive DNA sequences that cap and protect the ends of chromosomes from DNA damage and premature aging.
- In terms of the developing brain, exposure to cumulative adverse events contributed to:
 - a) Reduction in the volume and activity levels of major structures including the corpus callosum (connective fibers between the left and right side of the brain), limbic system (amygdala and hippocampus) that is involved in emotional regulation.
 - b) Cerebral lateralization differences or asynchrony. Abused children are seven times more likely to show evidence of left hemisphere deficits.
 - c) Impact the communication between the Prefrontal Cortex (PFC) (upper portion of the brain) and the Amygdala (lower portion of the brain). The “top-down” regulation of executive skills can be compromised by perceived threats and stressors.

The bottom-up emotional processes (amygdala) can “hijack” the PFC.

- The earlier and the longer the exposure to cumulative ACE, the greater the neurological impact.

These neurobiological sequelae indicate the need for such ACE traumatized students to benefit from so-called META-COGNITIVE PROSTHETIC DEVICES (MPDs).

DEFINITION AND EXAMPLES OF MPDs

Bottom up and Top Down interventions

Idea of "kernels"

WAYS TO IMPLEMENT AND EVALUATE THEIR EFFECTIVENESS

THE NATURE OF RESILIENCE

Such psychological processes as positive emotions, optimism, active coping, social supports and prosocial behaviors, meaning making, humor, and exercise can foster and support resilience and reduce the intensity and duration of stress responsivity. Such positive activities are associated with reduced HPA axis reactivity. The impact of positive emotions is cumulative; repeated positive emotional experiences over time prime the system for optimal response to negative stimuli by expanding physical, psychological, intellectual and social resources (Fredrickson, 2001). There is a protective capacity of positivity. The presence of Oxytocin that accompanies engaging in resilience -engendering behaviors can counteract the impact of stress-engendering processes.

NEURO-PSYCHOLOGICAL MECHANISMS THAT NURTURE RESILIENCE

1. **Reframing/Reappraisals** is the ability to frame events in a relatively positive light. Functional MRI studies have shown increased activation in the lateral and medial prefrontal cortex regions and decreased amygdala activation during reappraisal. The increased activation in the lateral prefrontal cortex (the “executive” center) helps modulate the intensity of emotional responses and keeps the amygdala in check. Resilient individuals are better able to extinguish and contextualize traumatic emotional memories and can more readily retrieve positive memories.

These processes reflect a Constructive Narrative Perspective of resilience.

2. Use of **Humor** is a way to engage in cognitive reappraisal and emotion regulation. A network of subcortical regions that constitute core elements of the dopaminergic reward system are activated during humor.
3. Exercise, Meditation, Mindfulness and Acceptance type activities have both neurological and psycho-social benefits, and bolster resilience.
4. **Optimism** is the inclination to adapt the most hopeful interpretation of the events which influences emotion regulation, contributes to life satisfaction, and increases psychological and physical health. An optimistic future-oriented outlook has been associated with increased activity in the amygdala and anterior cingulate cortex. For instance, optimists have lower rates of dying after cardiovascular disease over 15 years, compared to pessimists.

As Southwick and Charney (2012, p. 25) observe, “optimism serves as the fuel that ignites resilience and provides energy to power the other resilience factors”. But it is **realistic optimism** that works best, whereby individuals pay close attention to negative information, and **not** blind optimism that does not work.

5. **Active goal-directed problem focused coping** of taking direct actions when stressful life events are potentially changeable can increase neurotransmission in the mesolimbic dopaminergic pathways that increase pleasurable feelings and that

stimulate reward centers such as the ventral striatum. Dopamine release in the brain leads to “openness to experience”, exploratory behaviors, and to the search for alternatives. A form of active coping is to engage in Behavioral Activation (physical exercise) which has positive effects on mood such as depression and that promotes resilience and neurogenesis. Exercise increases the level of serotonin, norepinephrine, dopamine and by stimulating the reward circuits in the brain. Exercise has also been shown to increase the size of the hippocampus and serum levels and increase brain volume (prefrontal cortex), especially among the elderly.

In some instances, when stressful events are not changeable, the use of emotional-palliative coping strategies such as acceptance, distraction, spirituality are the best ways to cope.

6. **Prosocial behaviors and social supports** and social competence, altruistic behaviors, helping others, and empathetic capacity facilitate resilience. The neuropeptides oxytocin, and vasopressin have been found to increase trust, compassion and enhance the reward value of social stimuli. Cortical “mirror neurons” have also been implicated in the regulation of positive emotions and can reshape the circuitry responsible for resilience. They play a role in facilitating social interactions by promoting shared understanding and empathy.

In a similar manner that social supports are critical in bolstering resilience in the elderly, a comparable process plays a critical role for trauma-exposed students. A critical buffering factor is SCHOOL CONNECTEDNESS.

Ask your student the following questions:

"If you were absent from school, who besides your friends would notice you were missing and would miss you?"

"If you had problem in school, who could you go to for help?"

A number of researchers have written about ways to bolster a Growth Resilient Mindset in students and educators. See references to Robert Brooks and Sam Goldstein, Carol Dweck, Angela Duckworth, and Don Meichenbaum.

7. Hamby has highlighted three areas of resilience-engendering activities:
 - a) Emotional regulation of both negative and positive emotions--- emotional awareness, distress tolerance, a positive Mindset, feelings of self-efficacy, and the ability to cheer oneself up after bad things have happened.
 - b) Interpersonal supports-- family support, able to share feelings, problems and family rituals/parent monitoring and investment in academic competence/ sense of belonging "mattering"/ support from prosocial peers/ at least two adults outside of the immediate family who have connected with the child/ teacher

engagement and school connectedness/ feeling safe in school and in the community/community supports.

c) Meaning-making activities-- religion and spirituality/ dedicated to a cause, sense of purpose / belief in a better future / commitment to a specific role (student, worker, father, mother)/ adhere to code of honor or possess a “moral compass.” As Viktor Frankl observed, "Anyone who has a WHY in their life can learn to handle any HOW."

In summary, the experience of positive-balanced emotions such as optimism, joy, pride, contentment, compassion, love, forgiveness, gratitude, humor have been associated with distinct neurobiological and psychological changes that provide a protective capacity. The positive emotion of awe, which reflects positive feelings of being in the presence of something vast that transcends our understanding of the world contributes to altruistic behaviors and to a sense of community. Awe helps shift one’s focus from a narrow self-interest to the interests and well-being of a group to which individuals belong. Sights and sounds of nature, collective rituals, artistic events of music and dance elicit positive emotions that have behavioral and physiological sequelae. These neurobiological responses include:

Increase of neurotransmitters like cortisol levels that facilitate pathway communication between Prefrontal Cortex (PFC) and subcortical systems like the amygdala. For instance, GABA (gamma amino butyric acid) which is an inhibiting neuropeptide made in the orbitomedial PFC (OBPFC) when released “turns down” the alarm system of the amygdala. The left PFC, a site associated with positive emotions such as happiness, is more activated during Compassion Meditation.

These positive emotions reduce physiological arousal and broaden and build an individual’s focus of attention, allowing more creative inclusive, flexible, integrative perspective taking, engenders positive reappraisal of difficult situations, fosters problem-focused coping, and facilitates the infusion of ordinary events with meaning. Fredrickson, in her Broaden-and-Build Theory, highlights that the impact of positive emotions is cumulative. Repeated positive emotional responses to negative events expands and builds psychological and behavioral resources.

INTERVENTION STRATEGIES THAT BOLSTER RESILIENCE

*(See Meichenbaum's Roadmap to Resilience book for examples
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Use Physical exercise - - Behavioral Activation and use Active Coping Strategies.

Use Emotional Regulation and Distress Tolerance Skills and Increase the Protective Capacity of Positivity that Buffers Negative Feelings.

Focus and savor positive emotions and past reminiscence and anticipate positive emotions (anticipating). Engage in goal setting and affective forecasting in the form of positive future-oriented imagery that nurtures hope. Avoid "dampening" or minimizing positive events ("I don't deserve this." "This won't last").

Engage in Mindfulness Exercises - - pay attention in a particular way, on purpose in the present moment, and nonjudgmentally.

Engage in Loving-kindness Meditation and engage in Acts of Kindness.

Engage in gratitude exercises ("Give back and pay forward").

Engage in Forgiveness exercises Toward others and Toward One-self - - Compassion is the awareness of the suffering of others and oneself, coupled with the wish and effort to alleviate it.

Engage in Meaning-making Activities and Cognitively Reappraisal ("Healing through meaning")

Use Spiritual-related Activities- - Use of One's Faith and engage in communal religious activities (See Meichenbaum "Trauma, spirituality and recovery" on Melissa Institute Website)

Increase Social Supports - - keep interpersonally fit by participating in positive activities; selectively choosing and altering situations, improving self-presentation (smiling, dressing up), improving communication skills and accessing social networks.

Use HUMOR, but as a therapist do so JUDICIOUSLY and STRATEGICALLY. Do NOT use humor too early in therapy before you have established a therapeutic alliance. Doing so may be misinterpreted as the therapist not appreciating the depths of the patient's emotional pain and losses.

REMEMBER that smiling also has positive feedback on the brain. THE NEXT TIME YOU TAKE A SELFIE, NO MATTER WHAT YOU MAY BE EXPERIENCING OR FEELING ----- SMILE!

Help patients build and broaden positive emotions. The impact of positive emotions is cumulative.

Repeated positive emotional experiences over time, prime the body for optimal response to negative stimuli by expanding physical, psychological, intellectual and social resources. There is a protective capacity of positivity. The experience of positive emotions such as realistic optimism, joy, pride, commitment, awe, forgiveness, gratitude and compassion toward others or toward oneself have been associated with distinct neurological and psychological changes. These positive emotions reduce physiological arousal and enlarge the focus of attention, allowing for more creative, inclusive, flexible integrative perspective taking, engenders positive reappraisal of difficult situations, fosters problem-solving coping and facilitates the infusion of ordinary events with meaning.

Encourage patients to engage in OPPOSITE ACTIONS AND FEELINGS. Encourage them to develop and implement BUCKET LIST activities.

Each of these Activities will help bolster resilience by increasing the accompanying neurobiological processes. There is increasing data that a course of psychotherapy- even without medication- had measurable physical consequences in the brain.

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