Mind-Body Therapies in Children and Youth

Dr. Beth Robinson
Professor, Lubbock Christian University
Counselor, Texas Boys Ranch
Overview of Presentation

- Introduction to mind-body therapies in youth

- Definitions, clinical applications, training and resources for mind-body therapies:
  - Biofeedback
  - Yoga
  - Mindfulness and mindfulness-based stress reduction (MBSR)
  - Hypnosis and guided imagery
Why Talk About Mind-Body Therapies?

- Children, teens and their parents are looking for non-pharmacological options to manage symptoms like pain, anxiety, and nausea.

- Patients can be empowered with self-regulation (mind-body) skills to improve symptom control and quality of life.

- Emerging research is providing support for the effectiveness of mind-body therapies.
This presentation is based on a webinar provided by the American Academy of Pediatrics (AAP) section on Integrative Medicine. The webinar was presented by Hilary McClafferty, Timothy Culbert, and Lawrence Rosen. In addition, Mind-Body Therapies in Children and Youth was a clinical report in American Academy of Pediatrics (AAP) Section on Integrative Medicine. The clinical report was written by Vohra, King Jones, McClafferty, Becker, Bethell, Culbert, Rosen, Sibinga and is available in Pediatrics, September 2016, Volume 138 (3), e1896.
Use of Mind-Body Therapies By Children

- 3.7% of children ages 4-17 used mind-body skills.
- In teens, females utilized mind-body skills more than twice as much as males (5.7% vs 1.7%).
- Why use mind-body approaches?
  - Pain-related conditions
  - Emotional/behavioral or mental health issues
  - Reduce stress level/relax, overall health, general wellness and disease prevention, to feel better emotionally.
Biofeedback
Biofeedback: Definition

The use of electronic or electromechanical equipment to measure and then feedback information about physiological processes to an individual. This information (visual, kinesthetic, auditory, or multimedia feedback) can then be modulated by the individual for therapeutic purposes.
Common Biofeedback Modalities

- **Muscle (EMG):** electrical muscle activity
- **Temperature (TMP):** peripheral hand temperature
- **Skin Conductance (EDA):** sweat gland activity
- **Heart Rate Variability (HRV):** patterns in heart rate
- **Pneumography (PNG):** movements with breathing
- **Capnography (CAP):** exhaled carbon dioxide
- **Brain Waves (EEG):** electrical brain activity
- **Blood Flow (HEG):** cranial blood vessel flow
Biofeedback: Clinical Applications

- Headaches (tension and migraine)
  - Peripheral hand temperature (TMP) biofeedback
  - Bifrontal electrical muscle activity (EMG) biofeedback

- Asthma
  - Pneumography (PNG) biofeedback
  - Muscle (EMG) biofeedback
  - Heart rate variability (HRV) biofeedback

- Rehabilitation
  - Multichannel electrical muscle activity (EMG) biofeedback
Biofeedback: Clinical Applications for Youth

- Dysfunctional voiding a encopresis
  - Pelvic floor surface electrical muscle activity biofeedback
  - Anorectal electrical muscle activity biofeedback
  - Rectal manometric (pressure balloon) biofeedback

- Attention-deficit/hyperactivity disorder
  - Electrical brain activity biofeedback.
  - For example, suppressing excess theta wave activity and increasing beta wave activity.
Biofeedback: Clinical Applications for Youth

- Not yet conclusive but up and coming . . .
- Emotional regulation/stress management
  - Skin conductance biofeedback
  - Heart rate variability biofeedback
  - Brain wave biofeedback
- Chronic pain syndromes
  - Heart rate variability biofeedback
- Insomnia
  - Heart rate variability biofeedback
  - Skin conductance biofeedback
  - Peripheral hand temperature biofeedback
  - Brain wave biofeedback
Portable Biofeedback Devices for Clients

- Digital Peripheral Temperature
  - Stress Thermometer - www.cliving.org
- Skin Conductance
  - Seat Gland Activity - www.thepip.com
- Brain Wave Activity
  - EEG Headband - www.choosemuse.com
- Heart Rate Variability
  - Inner Balance App - www.heartmath.com
- Biofeedback Games
  - Journey to Wild Divine - www.wilddivine.com
Biofeedback: Training and Resources

- Stens Corporation
  - Peripheral biofeedback modalities
  - Brain wave biofeedback
- Biofeedback Certification International Alliance
  - Certifications
- Biofeedback Foundation of Europe
  - Training all modalities
- HeartMath LLC and HeartMath Institute
  - Heart rate variability training and research
- Association for Applied Psychophysiology and Biofeedback
  - Practitioner organization
- Most biofeedback use does not require formal training
Yoga
Yoga: Definition

“Yoga is a mind and body practice with origins in ancient Indian philosophy. The various styles of yoga typically combine physical postures, breathing techniques, and meditation or relaxation.” - National Center for Complementary and Integrative Health (NCCIH).

Therapeutic yoga is designed to improve stress coping, lessen pain, and improve specific health conditions.
Yoga: Evidence

- Systematic review of controlled trials of pediatric therapeutic yoga as sole intervention
- 14 published studies met criteria (through 2013)
- Positive effects on psychological functioning, especially in children coping with emotional, mental, and behavioral health problems.
- Educational curricula incorporating stress management programs improve academic performance, self-esteem, classroom behaviors, concentration, and emotional balance.
Yoga: Evidence

- In 4 controlled trials, yoga was demonstrated to positively influence metabolic and hormonal parameters (obesity, polycystic ovary syndrome).
- No documentation of serious adverse effects in any published pediatric yoga trials to date.
- Limitations of reviewed studies include small sample sizes, high attrition rates, lack of evaluator blinding, reliance on self-report measures, and heterogeneity of intervention and control designs.
Yoga: Future Directions for Research

- Well-designed controlled trials of yoga for conditions with strong stress-modulated components are warranted.
- Excellent candidate conditions include asthma, irritable bowel syndrome (IBS), inflammatory bowel diseases, juvenile idiopathic arthritis, and fibromyalgia.
- Given the preference for yoga in studies of children with chronic pain, coupled with biological plausibility for response, limited potential for adverse effects, and promising pilot data, there is a great need for controlled studies in this population.
Yoga: Clinical Applications

- Stress-management, especially in patients with emotional, mental, and behavioral health concerns
- Educational settings: academic performance, self-esteem, classroom behaviors, concentration; schools may be an ideal setting to bring yoga to a heterogeneous, socioeconomically diverse sample of children.
- Obesity/ metabolic disorders
- Pain management
Yoga: Resources

- International Association of Yoga Therapists - [www.iayt.org](http://www.iayt.org)
- Yoga Alliance - [www.yogaalliance.org](http://www.yogaalliance.org)
- Kripalu Yoga in the Schools Teacher Training - [www.kripalu.org/kyis-teacher-training](http://www.kripalu.org/kyis-teacher-training)
- Yoga in Schools - [www.yogainschools.org](http://www.yogainschools.org)
Meditation & Mindfulness-Based Stress Reduction (MBSR)
**Meditation and MBSR: Definitions**

- **Meditation**: The practice of intentional attention training. There are a variety of approaches, including mindfulness meditation and concentration meditation.

- **MBSR** (mindfulness-based stress reduction) refers to an approach that cultivates purposeful and non-judgmental awareness of the present moment through cognitive, emotional, and sensory experiences, typically through an 8-week program.
Mindfulness: Definition

- Paying attention with moment-to-moment awareness
- On purpose
- In a particular way
- Without judgment
Mindfulness of Children

- Children need an active and sensory-rich approach to mindfulness
- The brain is more pliable between
  - Birth and 2 years
  - 4 and 6 years
  - Around puberty
Meditation and MBSR: Approaches

- Mindful breathing
- Body scan
- Mindful movement
- Compassion meditation
- Love, kindness, gratitude toward self and others
- Everyday mindfulness, informal practices
- Mindfulness-Based Stress Reduction Program - Jon Kabat-Zinn
Meditation and MBSR: Clinical Applications

- Respects children’s capacity for coping
- Recognizes their intelligence
- Supports their natural ability to pay attention
- Does not deny what is happening
- Acknowledges and nurtures their capacity to be present in the face of challenging events
Meditation and MBSR: Clinical Applications

- Mindfulness has shown promise in these areas:
  - Mental health
  - Coping skills
  - Self-regulation
  - Improved self-esteem
  - Decreasing elevated blood pressure
  - Reduction in negative school behaviors such as absenteeism
Mindful Kids Exercises

- Parents and other adults should ideally serve as role models.
- Teach children to apply mindfulness practices during challenging situations
- Remember to acknowledge what is actually happening in the moment
- Daily practice will help to build skills and promote resiliency.
- Develop an appreciation practice.
- Send friendly wishes (self, friend, others, the world).
- Practice compassion for self and others through loving-kindness.
- Use positive affirmations.
Meditation and MBSR: Training and Resources

- Child Mind Institute - www.childmind.org/article/the-power-of-mindfulness
- The Chopra Center - www.chopra.com/articles/4-exercises-to-teach-your-kids-about-mindfulness-and-compassion
- Center for Mindfulness, University of Massachusetts Medical School, Jon Kabat-Zinn - www.umassmed.edu/cfm.
Meditation and MBSR: Apps

- Stop, Breathe, & Think
- Take a Chill
- Sleep Meditations for Kids
- Mindfulness for Children
Meditation and MBSR: Training and Resources

- *Planting Seeds: Practicing Mindfulness* with Children by Thich Nhat Hanh
- *A Still Quiet Place: A Mindfulness Program for Teaching Children and Adolescents to Ease Stress and Difficult Emotions* by Amy Saltzman and Saki Santorelli
- *Train Your Mind, Change Your Brain: How a New Science Reveals Our Extraordinary Potential to Transform Ourselves* by Sharon Begley
- Stressed Teens - [www.stressedteens.com](http://www.stressedteens.com)
- Center for Healthy Minds - [www.centerhealthyminds.org](http://www.centerhealthyminds.org)
- Mindful Schools -- [www.mindfulschools.org](http://www.mindfulschools.org)
Hypnosis & Guided Imagery
Hypnosis

- Misperceptions
  - Control—all hypnosis is self-hypnosis
  - It is not like sleep
  - It is not for entertainment

- Hypnosis, guided imagery, and visualization are all similar

- Certification and training requirements vary widely
Hypnosis and Guided Imagery: Definitions

- **Hypnosis:** When individuals are in a state of hypnosis or what has been termed “trance,” they enter an altered state of awareness within which they can intensify attention, decrease peripheral awareness, and become more receptive to new ideas, suggestions, and associations.

- **Guided Imagery:** Guided imagery can be described as the use of relaxation and mental visualization to improve mood and/or physical well-being. It often invokes the use of all the senses and directs one’s imagination in proactive, positive ways.
Hypnosis and Guided Imagery: Clinical Applications

- Clinical Hypnosis
  - Pain
    - Functional abdominal pain and IBS
    - Procedural Pain
    - Cancer
    - Perioperative Pain
    - Headaches
    - Voiding procedural discomfort.
Hypnosis and Guided Imagery: Clinical Applications

- Clinical Hypnosis
  - Anxiety
  - Cancer chemotherapy
  - Tics/Touretts’s
  - Immune system support
  - Asthma

- Guided Imagery
  - Functional recurrent abdominal pain
  - Lifestyle change
Hypnosis and Guided Imagery: Training and Resources

- National Pediatric Hypnosis Training Institute
  - www.nphti.org
- American Society of Clinical Hypnosis
  - www.asch.net
- American Board of Medical Hypnosis
  - www.abmh.info
- Academy for Guided Imagery
  - www.acadgi.com
Summary and Conclusions

- The available evidence supporting the use of mind-body skills in children and youth varies in quantity and quality, but generally is supportive of mind-body therapies as safe and potentially effective in common and debilitating conditions, including pain and anxiety.

- Additional potential benefits for school-age children include improved concentration and self-esteem.

- Mind-body therapies can directly affect physiology, including cardiovascular, nervous, endocrine, gastrointestinal, and immune system functions.

- Teaching children mind-body skills as a form of self-regulation may have many long-term benefits.

- Psychiatric healthcare providers are encouraged to facilitate an open dialogue with their patients/families about the use of complementary therapies and become familiar with mind-body therapies as non-pharmacologic options to improve mood, behavior, and quality of life.
Steps of Mind-Body Skills Training

- Discern (mind-body awareness)
  - Discriminate (objectively) the mind-body differences between sympathetic nervous system arousal (stress) and parasympathetic nervous system dominant states (relaxation response).

- Control (mind-body self-regulation)
  - Learn to modulate (first in a controlled environment) a given psychological or physiological function, in a therapeutic direction, consistently.

- Generalize (transfer the mind-body skill to real life)
  - Apply this ability to self-regulate mind and body in appropriate life situations, as needed, “in the moment.”

- Restructure (central nervous system) and reset (baseline autonomic nervous system) with regular practice
  - Neuroplasticity: long-term changes and benefits with daily practice
  - Recognize effects of stress and relaxation as epigenetic modifiers.
But Will Kids Practice Mind-Body Skills?

- Only if you make it interesting!
  - Biofeedback gadgets
  - Books and CDs
  - Mobile apps
  - Bubbles and pinwheels
  - YogaKids/Yoga Calm groups
  - Games
Mind-Body Skills in Children and Youth: Mobile Applications

- Mobile apps
  - Breathwork
    - Breathing Zone
    - Breathe 2 Relax
  - Meditation
    - Take a Chill
    - Stop, Breathe, & Think
    - Smiling Mind
Mind-Body Skills in Children and Youth: Mobile Applications

- Mobile apps
  - Yoga
    - The Adventures of Super Stretch
    - Yoga By Teens
    - Kids Yogaverse
  - Other
    - MeMoves (calming movement and music)
    - Healing Buddies Comfort Kit (symptom management)
Mind-body therapies are popular and are ranked among the top 10 complementary and integrative medicine practices reportedly used by adults and children in the 2007-2012 National Health Interview Survey. A growing body of evidence supports the effectiveness and safety of mind-body therapies in pediatrics. This clinical report outlines popular mind-body therapies for children and youth and examines the best-available evidence for a variety of mind-body therapies and practices, including biofeedback, clinical hypnosis, guided imagery, meditation, and yoga. The report is intended to help health care providers better prepare to answer parent questions and provide patient-centered, evidence-based care. A growing body of evidence supports the effectiveness and safety of mind-body therapies in pediatrics. In this clinical report, relevant evidence regarding biofeedback, clinical hypnosis, guided imagery, meditation/MBSR, and yoga is reviewed so that pediatric health care providers are better prepared to answer parent questions and provide patient-centered, evidence-based care. For each therapy reviewed, recommendations regarding indications and precautions are provided. This yearâ€™s Child Mind Institute Childrenâ€™s Mental Health Report looks at just how widespread child and adolescent anxiety disorders are, examines the impact of early risk factors including temperament, and describes effective treatments that are being accessed more frequently. childmind.org/2018report. Cognitive Behavioral Therapy, Sertraline, or a Combination in Childhood Anxiety. The New England Journal of Medicine, 359(26), 2753–2766. doi:10.1056/NEJMoa080463. 53. Lucas, G. M., Gratch, J., King, A., & Morency, L-P.