Mindfulness and the Biopsychosocial Approach: Integrating Foundational Concepts to Promote Health In Adolescence and Young Adulthood

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1-Canvass participants re: experience with mindfulness and expectations for the session…”At the end of this session, I would like to be able to ______________” (10 min)

2-Didactic discussion:
Case-based elements of biopsychosocial approach (35 min)
Principles of mindfulness in neuroscience context (20 min)

3-Mindfulness practice to enable participants to enhance their innate mindfulness skills (10 minutes)

4-Break (5 min. of yoga + 10 min. unscheduled)
Institute Preview (2 of 2)

5-Integration of mindfulness and biopsychosocial approach in somatic symptom management. Discuss key elements of mindfulness and biopsychosocial approach (25 min)

6-Mindfulness practice to enable participants to enhance their innate mindfulness skills (10 min)

7-Review of resources (25 min)

8-Interactive discussion regarding mindfulness, the biopsychosocial approach, and how participants will put what they learned to use when they get back home (25 min)

9-Raffle 3 copies of *The Mindful Teen*—must be present

10- Mindful practice to prepare participants for the rest of the day and the conference (5 min)
How Can California Raisins Help Us Practice Mindfulness?
How Does The Caduceus Relate To The Biopsychosocial Approach?
The Clinical Application of the Biopsychosocial Model
George L. Engel American J of Psychiatry137:1980, p 537
Case #1: “I can’t see, I can’t see”

- 13 yo female with sudden onset of blindness, otherwise asymptomatic
- Admitted to Neurology Service for evaluation: Imaging, VER, and Adolescent Medicine consult
- Consult: Physical examination, including ophthalmoscopy and optokinetic nystagmus normal. Large, three-generation upstate NY dairy farm; home-schooled; close-knit family with 3 living siblings; onset of blindness two days before the first anniversary of eldest brother drowning in family pond while entertaining patient. Brother was the heir-apparent to the farm; patient was “the apple of his eye”
Case #1: “I can’t see, I can’t see”

- Intervention: Reviewed the labs, imaging and VER, all normal. Explained the nature of loss of vision and dynamics in conversion disorder. After the explanation was given, mother asked if any more tests were planned, and then asked for daughter to be discharged.

You always need to stamp the patient’s ticket of admission.

The greater the ignorance, the greater the dogmatism.

Chris Hodgman, MD
William Osler, MD
Case #1: “I can’t see, I can’t see”

- Lessons learned:
  - Signs not congruent with symptoms suggests a functional impairment
  - Subjective and objective findings are EQUIVALLY important in both diagnosis and treatment
  - Reassurance about recovery based on objective findings, NOT “there is no organic cause of symptom(s)”, or worse “this is all in your head”.
  - If it can’t be dealt with at a conscious level, don’t try to bring it to a conscious level.

- Dénouement: Lost to follow up
Case #2: “What do you think this is?”

- 15 yo female transferred to SMH after “negative” evaluation at outlying hospital for abdominal pain.
- Admitted to Peds GI: Adolescent Med consult Friday pm, “all tests negative” in GI workup.
- Consult: Patient and mother confrontational; Self-described “drama queen” who finds classmates “immature”; Mother relationships unenduring with men, unsteady with daughter; Father now married to “the other woman”, teaches history in school that patient attends; patient endorses high emotional reactivity and frequent disappointment by others. At conclusion of non-specific and inconsistent PE, asks about tiny mass in neck. Step-brother diagnosed with Hodgkin lymphoma in ileum two months earlier. “You find out who cares about you…”
Case #2: “What do you think this is?”

- Intervention: Pathophysiology framed as highly reactive ANS, with significant CNS-ENS interactions, requiring symptomatic relief of functional bowel symptoms. Conflict with father identified as a separate issue that was upsetting and might trigger sensitive negative CNS-ENS interactions in the future.

*It is more important to know what sort of a patient has a disease than what sort of a disease a patient has.*

William Osler. MD

*Physiologically-based, face-saving interventions allow the patient and family to participate in recovery with hope and dignity.*

Elizabeth R. McAnarney, MD
Case #2: “What do you think this is?”

- Lessons learned:
  - Linear R/O approach to symptoms can be counter-productive and impede effective treatment
  - Regardless of the nature of symptoms, Narrative Medicine is therapeutic for ALL patients and families
  - The meaning of symptoms—to patients and family—is AS IMPORTANT as the cause of symptoms
  - Pay close attention to verbal and body language, which always have meaning
  - Ecological framework

- Dénouement: PID, sexual abuse history by grandfather
Case #3: “I Keep Having Seizures…”

- 16 year old male with repetitive seizure activity transferred from outlying ED to SMH for evaluation and treatment. Admitted to Peds Neurology Service; when observed seizure suggested non-electric activity Adolescent Medicine consultation requested. “Induced seizure activity” during observed EEG video-monitoring not correlated with any abnormal EEG activity.

Case #3: “I Keep Having Seizures…"

- Intervention: “Spells”, “episodes”, “fits” explicitly framed as *not* epileptic. Seriousness of events emphasized: hyperventilation can result in tetany…muscles are firing when they are not supposed to—messages between nerves and muscles are not coordinated. Suggestibility leveraged…sx would diminish with a combination of interventions. School nurse informed. Outpatient treatment focused on coping and reducing anxiety.

Dénoument: ego-syntonic homosexual

*We don’t see things as they are…We see things as WE are.*
Anaïs Nin

*The good physician treats the disease; the great physician treats the patient who has the disease.*
William Osler, MD
Case #4: “I’m afraid to eat…”

- 19yo female admitted to Medicine service at another hospital because of weight loss due to restricted intake due to abdominal pain. Extramural Adolescent Medicine consultation requested due to disagreement about diagnosis and treatment.

- Consult: DCBE “negative”, but PE with consistent tenderness in RLQ. ESR 39 mm/hr. Birth trauma, hip dysplasia with bilateral Trendelenberg gait, vulnerable child; strong psychosomatic family dynamics with unresolved conflict and conflict avoidance, enmeshment, triangulation, boundary transgressions, poor communication.
Case #4: “I’m afraid to eat…”

- Intervention: Transferred to adolescent medicine unit for comprehensive evaluation including evaluation for IDB. Terminal ileum not visualized on DCBE from other hospital, acute obstruction requiring surgery, regional enteritis. Family dynamics continued to be dysfunctional and patient continued to experience adolescent development problems (autonomy, identity). Focus on how patient could move toward autonomous adulthood, given her situation.
Case #4: “I’m afraid to eat…”

- Lessons learned
  - Signs and symptoms were not congruent with working diagnosis.
  - Presence of dysfunctional dynamics at the family level does not preclude the possibility of pathology at the tissue level.
  - Diagnoses should be made on signs and symptoms, not impressions.
  - In chronic illness maintain focus on healthy development and transition to autonomous adulthood.

Dogs can have ticks and fleas… Harvey Cohen, MD, PhD

The first 6 letters of biopsychosocial spell biopsy…

UR Medical Student, now Surgeon
mindful

Why
Jon Kabat-Zinn
Thinks Mindfulness Has a Big Future

Finding the Space to Lead
Strategies from Leadership Expert Janice Marturano

Teens Learn Compassion
Hospice Class for High School Seniors

FEBRUARY 2014
mindful.org
What is Mindfulness?

Paying Attention in a particular way:
On Purpose (Intention)...
In the Present Moment (Now)...
With Curiosity (Beginner’s Mind)...
Without Judgment (Noticing)...

Jon Kabat-Zinn, Ph.D.

Prefrontal cortex

Medial prefrontal cortex

Ventromedial prefrontal cortex

Amygdala
Hand Model of Brain
(Dr. Daniel Siegel)
Managing Pain

- **Pain** = Noxious sensation in the body suggesting tissue damage
- **Suffering** = experienced by a person (not body); arises from threats to the intactness of the person as a complex social and psychological entity
- **Suffering** = Pain x Resistance (Mindlessness)
- Reducing resistance through mindfulness alleviates suffering
- Analgesics do NOTHING to alleviate suffering
MBSR for Chronic Pain

“Healing and the Mind with Bill Moyers” (1993)
https://www.youtube.com/watch?v=PEJGPuPFlvc
MBSR: Neuroplasticity

- N = 26 adults
- Outcome: Reduced perceived stress
- Decreased stress correlated with decreased amygdala grey matter

Holzel BK. *Soc Cogn Affect Neurosci.* 2010; 5: 11-17
Brain: Mindfulness and Pain

Meditators:
- 40% reduction in pain
- Altered pain processing networks in brain

STAY IN LANE
FUTURE
PAST
Yesterday is history, tomorrow is a mystery and today is a gift, that is why it is called the present.

Eleanor Roosevelt
If you are depressed, you are living in the past.

If you are anxious, you are living in the future.

If you are at peace, you are living in the present.

~ Lao Tzu
Mindfulness Clinical Trials: Children & Adolescents

Preliminary evidence for benefits:
- Increased attention (ADHD)
- Blood pressure, sleep
- Mood: Anxiety, depression, PTSD
- Positive affect
- Substance abuse
- Family functioning
- Coping with illness: HIV, cancer, pain
- Anorexia nervosa

Adolescent Brain Development

BC Children’s Hospital: Mindfulness Awareness and Resilience Skills for Adolescents (MARS-A)

- Adapted from Mindfulness Based Stress Reduction (MBSR, Kabat-Zinn), Mindfulness Based Cognitive Therapy (MBCT, Segal et. Al.), Mindfulness Based Stress Reduction for Teens (MBSR-T Biegel)
- Adolescents 14 to 19 years old with psychological distress, ± chronic illness, pain

-Kabat-Zinn J. Full Catastrophe Living. New York: Bantam Dell, 2005
# MARS-A: Curriculum

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MARS-A: Pilot Study Design

- Pre-post trial
  - Survey
  - Optional 30-minute interview
- Recruitment & data collection by study staff
- Parental consent + teen assent (age <19y)
- Compensation: $20 gift card
- Approved by Research Ethics Board, BC Children’s Hospital
MARS-A: Pilot Study Results

- Significant improvements:
  - Perceived stress
  - Depression
  - Psychological distress
  - More positive emotions

- Notable effect sizes

- Trend towards improvement:
  - Functional disability: Daily & physical activities
Mindfulness

Calligraphy by Thich Nhat Hanh
“Object” Meditation
Yoga and Mindful Break
“I certainly mean no disrespect in questioning your authority on the subject of psychosomatic illness, Master, but quite honestly, I find it hard to believe that the pain is all in my head”
Pitfalls in Biomedical Approach

- Emphasis on technology minimizes the contribution of history and physical exam
- Cause and effect not unidirectional
- “R/O” ignores test sensitivity & specificity
- Absence of proof ≠ proof of absence
- Symptoms have meaning beyond their medical significance
- Unrealistic separation of psyche and soma
Somatic Symptom Disorder (300.82; F45.1)

A) ≥1 somatic symptoms that are distressing or result in significant disruption of daily life.

B) Excessive thoughts, feelings, or behaviors related to the somatic symptoms or associated health concerns as manifested by ≥ 1 of the following:
   - Disproportionate and persistent thoughts about the seriousness of one’s symptoms.
   - Persistently high level of anxiety about health or symptoms.
   - Excessive time and energy devoted to these symptoms or health concerns.
Somatic Symptom Disorder
(300.82; F45.1)

C) Although any one somatic symptom may not be continuously present, the state of being symptomatic is persistent (typically >6 months).

- Specify:
  - With predominant pain (previously pain disorder)
  - Persistent: course characterized by persistent and severe symptoms, marked impairment, and >6 months).
  - Severity: Mild=Only one Criterion B symptom; Moderate= ≥2 Criterion B symptoms; Severe= ≥ 2 Criterion B symptoms & multiple or very severe somatic symptoms
Illness Anxiety Disorder (300.7; F45.21)

A) Preoccupation with having or acquiring a serious illness.

B) Somatic sx are not present or mild in intensity. If another medical condition is present or there is a high risk for developing a medical condition, the preoccupation is excessive or disproportionate.

C) High level of anxiety about health, and easily alarmed about personal health status.

D) Performs excessive health-related behaviors, or exhibits maladaptive avoidance.
Illness Anxiety Disorder
(300.7; F45.21)

E) Illness preoccupation present for ≥ 6 months, but the specific feared illness may change over time.

F) Illness-related preoccupation not better explained by another mental disorder.

Specify:

- Care-seeking type: Medical care, including physician visits or undergoing tests and procedures, is frequently used.

- Care-avoidant type: Medical care is rarely used.
Conversion Disorder (Functional Neurological Symptom Disorder) (300.7; F45.21)

A) ≥1 sx of voluntary motor or sensory dysfunction
B) Evidence of incompatibility between the symptom and recognized neurological or medical conditions.
C) Symptom or deficit not better explained by another medical or mental disorder.
D) Symptom or deficit causes significant distress or impairment in important areas of functioning or warrants medical evaluation.

Specify: Acute (<6mo) or Persistent (≥ 6 mo)
Specify: With or Without psychological stressor
Psychological Factors Affecting Other Medical Conditions (316; F54)

- Medical symptom or condition is present.
- Psychological or behavioral factors adversely affect the medical condition in one of the following ways:
  - Factors influence course of medical condition (close temporal association between factors and the development or exacerbation of, or delayed recovery from, the medical condition.
  - Factors interfere with treatment of the condition.
  - Factors constitute additional health risks.
  - Factors influence underlying pathophysiology, precipitating or exacerbating symptoms or necessitating medical attention.
Treatment Principles (1 of 2)

- Biopsychosocial model (avoid dichotomy, “R/O”)
- Functional pathophysiological explanation
- Communication during evaluation
- Developmental issues
- Family included in treatment program
Treatment Principles (2 of 2)

- Face-saving interventions
- Regular visits, regardless of symptoms
- Limit laboratory testing
- Discuss physical and developmental problems
Rx: Negative Communication

- “We’ll do some tests to see what’s wrong…”
- “All the tests are negative, I can’t find anything wrong with you…”
- “It’s all in your head…”
Rx: Negative Communication

- “Your symptoms must be due to emotional problems...”
- “You need to see a psychiatrist...”
- “You’ll just have to learn how to live with your symptoms...”
- “There’s nothing more I can do for you...”
Rx: Positive Communication

- “I would like to do a few tests to make sure that we are not missing anything. I expect them to be normal, and that will be reassuring...”

- “Good news. The tests are normal, like I hoped they would be. That means there is no cancer, or infection or _____ that we were concerned about...”

- “Your symptoms are in your belly, but worry can sometimes make symptoms worse, like when you get ‘butterflies’ in your stomach...”
Rx: Positive Communication

- “It seems like you are under a lot of stress, which can bring on symptoms; some people get hives…”

- “I’m concerned that you seem very sad/anxious/etc, and I need Dr. ____’s help to work on that part of what might make symptoms harder to tolerate…”

- “I want you to keep a daily journal and I’ll see you again in two weeks. This may be like a detective story, so I need your help to figure out the clues…”
Strategies for Symptom Relief

- Keep a daily symptom journal
- Match interventions to stage of development
- Use biopsychosocial model to make a positive diagnosis, not R/O illness
- Involve patient & family in work-up and Rx
- Select and explain studies based on H_x and PE, limit laboratory testing, anticipate results
- Interpret negative findings as reassuring
R$_x$: Functional pathophysiology

- Based on patient/family beliefs
- **Plausible** explanations
- Anatomic charts
- Function and/or structure changes
- Relate to personal and family experiences
Rx: Developmental Issues

- **Individual**
  - Puberty
  - Autonomy
  - Identity
  - Cognitive

- **Peers**
  - School
  - Social network (including bullying)

- **Family**
  - Conflict
  - Financial, etc
RX: Family

- Relationships
  - Patient-Mother
  - Patient-Father
  - Patient-Sibling(s)
  - Mother-Father
  - Other

- Include father in treatment planning
- Extended family
- Beliefs and Worries
Rx: Face-Saving Interventions

- Based on presumed pathophysiologic mechanism
- Home remedies
- Self-care
- Active involvement
- Frame as rehabilitation
Rx: Focused Testing

- Frame History and Physical Examination as THE BEST way to direct testing, if needed
- Listen to what tests the patient/family are expecting or want
- Explain why certain tests might/might not provide desired information
- Make use of simple, non-invasive tests
  - CBC with differential
  - Sed Rate or CRP
  - Urinalysis
Rx: Physical and Developmental Issues

- Interval history (reflective listening) and repeat physical examination (laying on of hands) at every visit, focused on symptoms
- How symptoms interfere with life (family, school, peers, etc.)
- School = Work for an adolescent
- Avoid attributions, focus on associations of symptoms
Rx: Regular Visits

- Schedule follow-up visits so that patient does not need to be sick to be seen
- Review daily journal
- Focus on symptoms as threats to health and to development
- Spend only allotted time at visit, then schedule another follow-up visit
- Listen, listen, listen to the words and the background “music”
Somatoform Paradigms

- **Conditioned responses**
  - Repeated stimuli cause symptoms to be perpetuated in the absence of stimuli

- **Triggers**
  - Multiple precipitants to symptoms

- **Reflexes**
  - Automatic, involuntary, subcortical

- **Autonomic Nervous System**
  - Balance of sympathetic and parasympathetic
Summary

- Ecological, rather than disease, approach
- Language is critical
- Understanding more important than truth
- Reframe negatives into positives
- Make use of healing power of talking, listening and laying on of hands
- Celebrate small gains!
- Never give up!!!
Vagus Nerve (X): Schema

SEE ALSO PLATE 153

Glossopharyngeal nerve (IX)
Meningeal branch of vagus nerve
Auricular branch of vagus nerve
Pharyngotympanic (auditory) tube
Levator veli palatini muscle
Salpingopharyngeus muscle
Palatoglossus muscle
Palatopharyngeus muscle
Superior pharyngeal constrictor muscle
Stylopharyngeus muscle
Middle pharyngeal constrictor muscle
Inferior pharyngeal constrictor muscle
Cricothyroid muscle
Trachea
Esophagus
Right subclavian artery
Right recurrent laryngeal nerve
Heart
Hepatic branch of anterior vagal trunk (in lesser omentum)
Celiac branches from anterior and posterior vagal trunks to celiac plexus
Celiac and superior mesenteric ganglia and celiac plexus
Hepatic plexus
Gallbladder and bile ducts
Liver
Pyloric branch from hepatic plexus
Pancreas
Duodenum
Ascending colon
Cecum
Appendix

Posterior nucleus of vagus nerve (parasympathetic
Solitary tract nucleus (visceral aferents including taste)
Spinal tract and spinal nucleus of trigeminal nerve (somatic afferent)
Nucleus ambiguus (motor to pharyngeal and laryngeal muscles)
Cranial root of accessory nerve

Vagus nerve (X)

Jugular foramen
Superior ganglion of vagus nerve
Inferior ganglion of vagus nerve
Pharyngeal branch of vagus nerve (motor to muscles of palate and lower pharynx; sensory to lower pharynx)
Communicating branch of vagus nerve to carotid branch of glossopharyngeal nerve
Pharyngeal plexus

— Superior laryngeal nerve:
  — Internal branch (sensory and parasympathetic)
  — External branch (motor to cricothyroid muscle)
— Superior cervical cardiac branch of vagus nerve
— Inferior cervical cardiac branch of vagus nerve
— Thoracic cardiac branch of vagus nerve
Left recurrent laryngeal nerve (motor to muscles of larynx except cricothyroid; sensory and parasympathetic to larynx below vocal folds; efferent and afferent to upper esophagus and trachea)

— Pulmonary plexus
— Cardiac plexus
— Esophageal plexus
— Anterior vagal trunk
— Gastric branches of anterior vagal trunk (branches from posterior trunk behind stomach)
— Vagal branches (parasympathetic motor, secretomotor and afferent fibers) accompany superior mesenteric artery and its branches usually as far as left colic (splenic) flexure

— Efferent fibers
— Afferent fibers
— Parasympathetic fibers
Vocal Cord Dysfunction
peace in oneself
peace in the world

Calligraphy by Thich Nhat Hanh
Resources
“Mindfulness: Youth Voices” Video

http://keltymentalhealth.ca/healthy-living/mindfulness
Being a teen can be really stressful! Mindfulness is a powerful way to handle stress, and live life more fully. Mindfulness is all about living fully in the present moment, without judgment, and with an attitude of kindness and curiosity. It’s about breathing, noticing what’s happening right here and now, sending a gentle smile to whatever you’re experiencing in this moment (whether it’s easy or difficult), and then letting it go. You can be mindful anytime, anywhere, no matter what you’re doing. It sounds simple, but it’s not always easy to do, especially when you are stressed! This website provides information, tools, and resources to help you get started.

Hear what other teens have to say about mindfulness in the Kelty Centre’s 3-minute video, “Mindfulness: Youth Voices.”
The mindful teen

powerful skills to help you handle stress one moment at a time

Dzung X. Vo, MD, FAAP

http://mindfulnessforteens.com

facebook.com/TheMindfulTeen    @TheMindfulTeen
ONLINE TRAINING
Celebrating over 11 years of Stressed Teens with a new online learning program!
Information for Spring 2015 Coming Soon!

MINDFULNESS RESOURCES
Stressed Teens has a number of online resources to help introduce you or your teen to Mindfulness and ways to help reduce stress in today’s complicated world.
Learn More →

www.stressedteens.com/
Selected Books

See mindfulnessforteens.org/resources for more
MINDFUL FIVES

Mindfully, yet quietly, make eye contact with another person and give them a mindful supportive high five. Notice the sensations before, during and after the contact.

(If you are alone, just clap!)
Mobile Apps

GET MEDITATING IN 5 MINUTES. EASY.

With this app, you can develop and apply kindness and compassion in your daily life through a process called STOP, BREATHE & THINK:

STOP
Stop what you are doing. Check in with what you are thinking, and how you are feeling.

BREATHE
Practice mindful breathing to create space between your thoughts, emotions and reactions.

THINK
Learn to broaden your perspective and strengthen your force field of peace and calm by practicing one of the meditations.

http://stopbreathethink.org/
Mobile Apps

http://www.anxietybc.com/mobile-app

Struggling with anxiety? Tired of missing out? There are things you can do to stop anxiety and fear from controlling your life. MindShift is an app designed to help teens and young adults cope with anxiety. It can help you change how you think about anxiety. Rather than trying to avoid anxiety, you can make an important shift and face it.

MindShift will help you learn how to relax, develop more helpful ways of thinking, and identify active steps that will help you take charge of your anxiety. This app includes strategies to deal with everyday anxiety, as well as specific tools to tackle:

- Managing worry
- Coping with test anxiety
- Tackling social fears
- Facing performance anxiety
- Dealing with conflict
- Taking charge of panic
Breathe
you are online