Mindfulness in the Context of Neurorehabilitation

Jessica McWhorter, PhD, ABPP-RP
Rehabilitation Neuropsychologist

The Sandra and Malcolm Berman Brain & Spine Institute
Disclosures

• I have no financial interest or affiliation with any entity producing, marketing, re-selling, or distributing healthcare goods or services consumed by or used on patients.

• I will not be discussing the use of off-label products or devices.
At the end of this session, participants will be able to:

1. Define the term mindfulness

2. List at least two populations in which mindfulness has been shown to be an efficacious intervention

3. Describe at least one mindfulness technique
Mindfulness

Mind Full, or Mindful?
Mindfulness

- Willingness
- Acceptance
- Awareness
Mindfulness

“Paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally”

~ John Kabat-Zinn, PhD
Is this mindful?

- Spending 12 hours per day overwhelmed and disconnected, and 90 minutes in a yoga class
- Playing solitaire on a smartphone to “checkout”
- Placing blame on ourselves for not being more present
Mindfulness
THE STRESS RESPONSE CURVE

- Good Stress
- Distress

Stress Management Increasing
The Performance Level

- Actual Performance
- Fatigue
- Exhaustion
- ILL-Health
- Breakdown

Performance vs. Arousal Stress

Adapted from Nixon P, Practitioner, 1979

Flight, fight, freeze

• Stress hormones increase (adrenalin, norepinephrine, cortisol)

• What happens in the short term
  – Acute stress can help us to more effectively fight or run away
  – Decreases inflammation

• What happens in the long term
  – Increased inflammation
  – GI issues
  – Increased blood pressure
Prolonged stress

- Physical health
  - Cardiovascular health (e.g., blood pressure)

- Mental health
  - Depression and anxiety

- Cognition
  - Inattention

Kessler, 1997; Schneiderman, Ironson, & Siegel, 2005; Lupien et al., 2007
Mindfulness-based interventions

- Mindfulness-based stress reduction (MBSR)
- Mindfulness-based cognitive therapy (MBCT)
- Acceptance and commitment therapy (ACT)
- Dialectical behavioral therapy (DBT)
Mindfulness-based stress reduction

- John Kabat-Zinn, PhD
- Stress Reduction and Relaxation Program
  - Mindfulness-based stress reduction
- 1979–founded Stress Reduction Clinic at University of Massachusetts Medical School
  - 8 weekly classes, 2–2.5 hrs long (plus an all-day session)
  - 31 hours of direct instruction
  - Outside practice includes at least 45 min/day, 6 days/wk
    - Combination of mindfulness meditation, body awareness, and hatha yoga
• Combination of mindfulness strategies with cognitive behavioral techniques

• Teasdale, Segal, and Williams proposed use of MBCT in 1995 to prevent relapse from depressive episodes

• Goal is to increase one’s ability to manage distress

• 8-week program developed in 2002

• Demonstrated efficacy for depression and depression relapse
Acceptance and commitment therapy

- Orientation to psychotherapy that incorporates acceptance and mindfulness
  - Being willing to experience present moment, as opposed to avoidance
- Born out of Relational Frame Theory and popularized by Steven Hayes, PhD
- Utility in many populations, including pain
- Framework as opposed to a set of techniques
  - Acceptance
  - Mindfulness
  - Cognitive defusion
  - Values
  - Committed action
Developed in late 1980s by Marsha Linehan, PhD

Initially developed to treat borderline personality disorder
  - Currently used to treat many populations, including individuals with PTSD, depression, and substance dependence

Incorporates 4 components
  - DBT skills training groups, individual therapy, phone coaching, DBT therapist consultation team

Skills taught
  - Mindfulness
  - Distress tolerance
  - Interpersonal effectiveness
  - Emotional regulation
Commonalities between approaches

• Being willing to experience distress rather than avoiding
• Increasing one’s ability to pay attention to present moment
  – *When you are working, you are working; when you are eating you are eating.*
• Formal practice (e.g., meditation)
• Informal practice (e.g., redirecting attention to the task being completed)
• Commitment to change
Proposed mechanisms of change

- **Exposure** (e.g., an ability to experience pain with decreased emotional reactivity)
- **Cognitive change** (e.g., nonjudgmental observation of thoughts and feelings)
- **Self-management** (e.g., improved awareness of potential relapse behaviors)
- **Acceptance** (e.g., acceptance of pain, cognitive issues, or physical changes, without trying to avoid or change them)

*Baer, 2003*
Goals

– Observe without judgment
– Redirect attention to the present moment
– To be willing to experience discomfort
– Implement formal and informal practice

Language

– Like all interventions, mindfulness interventions have their own spirit and language
Mindfulness techniques

- Formal practice
  - Body scan
  - Visualization & meditation
  - Grounding
  - Yoga

- Informal practice
  - STOP
  - Mindful walking
  - Mindful eating
  - Mindful living
Body scan

- Start by lying down, closing your eyes, and engaging in deep breathing
- Bring your attention to the top of your head and, while slowly breathing, slowly move your attention down, focusing on the individual parts of your body
- Goal is to return to the present and acknowledge where your body and mind are
- If you fall asleep, it is OK
- If your mind wanders, it is OK
- Many apps and online resources to guide body scan
• Connecting with the earth or ground
• Standing, sitting, or lying on the ground
• Making a conscious choice to focus on the connection between yourself and the earth beneath you
Mindful walking
Mindful living

• Washing dishes
  – Feel the water, temperature, pressure, etc.

• Vacuuming
  – Notice how it changes the look of the carpet, the sound it makes

• Cooking
  – Smell each spice before placing it in a dish, taste as you go and focus on the flavor

• Gardening
  – Feel the dirt, notice the connection with the earth
Take time to stop

- **S**top
- **T**ake a deep breath
- **O**bserve
- **P**roceed
• Practice gratitude.
  – Write down several things that happened for which you are grateful.
  – Could be an act of kindness, hot water for a shower, a meal you enjoyed, or even that the day is over.
  – Engage in this practice every few days for 4 weeks and see how it affects your mood.
Mindfulness among different populations

- Chronic pain
  - Pain, medical symptoms, psychological symptoms
- Depression and anxiety
- Fibromyalgia
- Attention deficit/hyperactivity
- Cancer
  - Mood and stress

Moderate Effect Size
\[ d = 0.5 \]

Keng, Smoski, Robins, 2011

Grossman et al., 2004
Neurologic injury

• The impact of a neurologic illness or injury can create chronic stress
  – Job loss
  – Cognitive and physical barriers
  – Family stress
  – Loss of independence
  – Depression/anxiety
  – Existential issues
Life after injury

• Initial recovery and medical stabilization
• Fight or flight (“I will get through this”)
• “Scared straight” (e.g., the space between discharge from rehabilitation therapies and what the future will be)
• The “new normal”
# Common themes in neurorehabilitation

## Suffering
- When will I feel normal again? . . . I feel broken or damaged
- I used to be able to do this
- A focus on the past or the future and an avoidance of the present
- Pushing away destressing thoughts and emotions

## Experiencing
- I am a whole person
- Willingness to experience what you are able/not able to do
- Experiencing the moment as it is
- Learning to “ride the waves,” opposed to letting them crash upon you…because the waves will keep coming

---

*Mindfulness*
Mindfulness-based cognitive therapy for depression in people with TBI

- 10 weeks, 1½-hour sessions
- 20–30 minutes of home practice per day (CD to help guide practice)
- Components of treatment
  - Meditation techniques
  - Gentle yoga
  - Breathing exercises
  - Awareness of thoughts and feelings
  - Acceptance
  - Staying present
  - Issues associated with TBI

Bedard et al., 2013
Outcomes

- BDI-II – Significant change
- PHQ-9 & SCL-90R – No significant change
- Changes maintained 3 months after intervention
- No change on mindfulness scales
Limitations

- No information provided on severity of brain injury
- Small sample size
- Why did significance emerge only for the BDI-II
MBSR on symptoms of mTBI

- 22 participants with postconcussive symptoms >7 months after injury (most were 13–36 months post injury)
- 10 weekly 2-hour sessions
- Run by 2 neuropsychologists trained in MBSR
- Quality of life and self-efficacy improved
- Attention improved
- No significant decrease in NSI (symptoms)
- No change in mindfulness

Azulay, Smart, Mott, Cicerone, 2013
Limitations

- Has not been replicated
- All participants were participating in rehabilitation services as well
- Mood was not assessed
- Functional outcomes?
MBSR on fatigue after stroke and TBI

- 18 post CVA and 11 post TBI
  - >12 months post CVA/TBI
  - No psychiatric comorbidity
- No cognitive impairments or noteworthy physical impairment
- Mental fatigue as reported symptom
- 8-week MBSR program
  - Eight 2.5-hour sessions
  - 1 day-long retreat
  - Home practice → 45 minutes x 6 days/week

Johansson, Bjuhr, Ronnback, 2012
Outcome

- Improvement on self-report fatigue measure
- Improvement on processing speed (SDMT and TMT)
- Depression or anxiety decreased within treatment group, but not compared to control group
Limitations

- Severity of patient injury?
- Not replicated
- Small sample size
How much is enough to make a difference?

• 2 week mindfulness-based computer training
  – 2 x 10-minute exercises x 6 days/week for 2 weeks
  – Breathing and body scan
    • Significantly reduced perceived stress
    • Significantly reduced anxiety
    • Significantly reduced depressive symptoms

Vesa, Liedberg, Ronnlund, 2016
Mindfulness ideas for working with neurorehabilitation populations

• Focus on patient’s goals as your guide (values)

• Return patient's attention to the present during therapies or interventions

• STOP

• Electronics (unplug)

• Practice mindfulness meditation during session (ALWAYS ask permission)

• Problem solve how to integrate mindfulness into each day
  – Walking, washing dishes, showering, eating
Mindfulness ideas for working with neurorehabilitation populations

• Use certain metaphors or language to facilitate cognitive restructuring
  – e.g., Learning to “ride the waves,” as opposed to letting them crash upon you . . . because the waves will keep coming
Mindfulness ideas for working with caregivers

• Be realistic
• “Put oxygen mask on” BEFORE assisting others
• Notice emotions (e.g., feeling overwhelmed or tired)
• Create space to breath and focus on one task at a time
• Take 5-minute mindfulness breaks or STOPs
• Move, get active, exercise
• Unplug when you can
• Prioritize the basics → hydration, diet, exercise, food (and social support)
Practitioners are expected to participate in their own mindfulness practice if they are teaching such skills.

The role of authenticity is important.

Plan to integrate mindfulness into daily life (e.g., know ahead of time that you have a busy schedule and block 30 minutes for lunch and mindful walking).

Create a safe space (even a bathroom or car).

Close the door and hang a do-not-disturb sign.

Turn off email alerts.

Beware of the evil smartphone (or watches and tablets).
Mindfulness ideas for working with yourself

• Set reasonable goals

• Know that mindfulness is not typically something that can be mastered . . . it is a process and a path

• Be kind to yourself (e.g., you cannot fail at mindfulness, it is simply being in a particular way)

• Let go of the “I can’t”

• Beware of judgments (especially judgments that we place on ourselves)
Integrating mindfulness into clinical practice can be incredibly helpful among neurorehabilitation populations.

To what extent and in what modality depends on the patient (that is—meet people where they are):
- Take culture and religion into account
- Capitalize on tools that they may already have (e.g., already participating in a hatha yoga class)

Teaching and implementing mindfulness into practice probably cannot be done with authenticity, unless the provider is engaging in mindfulness practice as well (formally or informally).
“Life moves pretty fast. If you don’t stop and look around once in a while, you could miss it.”
References

• Altman D. One-minute mindfulness: 50 simple ways to find peace, clarity, and new possibilities in a stressed out world. New World Library, 2011.


References

Thank you!