The Effect of Mindfulness on Cognition & Self-Monitoring After Acquired Brain Injury

Tessa Trumbauer, University of Georgia
Rebecca Shisler Marshall, University of Georgia
Ariella Kaplan, Shepherd Center

Available at: https://works.bepress.com/ariella_kaplan/1/
The Effect of Mindfulness on Cognition & Self-Monitoring After Acquired Brain Injury

Tessa Trumbauer1, BSEd, Kat H. O’Brien1, PhD CCC-SLP, Rebecca Shisler Marshall1, PhD CCC-SLP, Ariella A. Kaplan2, MED CCC-SLP
1Communication Sciences and Special Education, University of Georgia
2Shepherd Pathways, Atlanta, GA

Background

- Mindfulness programs have been explored as a possible intervention to address the concomitant cognitive, metacognitive, and emotional impacts of ABI
- Bishop and colleagues (2004) suggest that two components of mindfulness – namely, self-regulation of attention and orientation of experience – impact cognition and mood by promoting acknowledgement of present experiences
- The activation of various areas of the brain during sustained and switching attention suggests that mindfulness plays a role in developing more effective mental processing (Bishop et al., 2004; Kabat-Zinn, 2003)
- A systematic review conducted by Link and colleagues (2016) found that areas of the brains, left temporal lobe, hippocampus, right orbital frontal cortex, and right thalamus had increased gray matter density following mindfulness-based intervention for post-TBI individuals. In effect, areas vital for executive functioning, memory, self-awareness, and mood may improve in functionality following direct training in mindfulness
- Given that many of the deficits seen in post-ABI individuals mirror the deficits that mindfulness-based interventions target, research should focus on how mindfulness programs can fit into a clinical model or rehabilitation, in which time and resources may be limiting factors.

Objectives

Specific aims of this study are as follows:
1. To determine the feasibility of a mindfulness-based intervention program at an inpatient clinic for individuals with acquired brain injury.
2. To determine if mindfulness can be taught in the population of acquired brain injury in a three-week program combining in-person group training and individual practice.
3. To measure the impact of mindfulness-based intervention on:
   a. Areas of cognition (memory and attention) for individuals with acquired brain injury
   b. Self-monitoring for individuals with acquired brain injury
   c. Mood for individuals with acquired brain injury

The primary purpose of this poster is to report the findings of Aim 3.

Methods

Setting

A three-week mindfulness program was conducted at Shepherd Pathways, an outpatient rehabilitation facility serving individuals with brain and spinal cord injuries in Decatur, Georgia.

Participants were quasi-randomized based on time of admission into either the mindfulness group or the control group.

The control group receives treatment as usual.

Mindfulness Program

The three-week mindfulness program was adapted from Dr. Kabat-Zinn’s Mindfulness-Based Stress Reduction (MBSR) and was comprised of:
1. An in-person group mindfulness program that met twice a week for an hour;
2. Lab sessions, in which participants listened to audio and wrote journal entries on an iPad, were conducted three times a week for 45 min.
3. Analysis
   - Because of variability and non-normal distribution, nonparametric statistics were applied to pre- and post-differences through a Wilcoxon rank sign test.
4. Current analyses consider differences within group only.

The Ability to participate in all group and lab sessions

The need to moderate severe aphasia

Participants in this study had to meet the following criteria:
- Oriented times four
- Generally intact receptive language
- No more than a mild-moderate deficit in memory
- Ability to participate in all group and lab sessions
- No prior mindfulness training
- No moderate to severe aphasia

Demographics

<table>
<thead>
<tr>
<th>Age</th>
<th>Gender</th>
<th>Education</th>
<th>Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-35</td>
<td>6 males; 3 females</td>
<td>11.89 years (2.96)</td>
<td>29.18 years (3.22)</td>
</tr>
<tr>
<td>35-50</td>
<td>24 (8.91)</td>
<td>11.89 years (2.96)</td>
<td>33.52 years (2.74)</td>
</tr>
<tr>
<td>50-65</td>
<td>3 males; 2 females</td>
<td>13.2 years (2.4)</td>
<td>1 CSA</td>
</tr>
<tr>
<td>&gt;65</td>
<td>1 CSA</td>
<td>18.4 years</td>
<td>1 TBI</td>
</tr>
</tbody>
</table>

The groups were similar in terms of age, gender, education, and diagnosis.

Participants with brain injury were excluded.

Results

The Effect of Mindfulness on Cognition & Self-Monitoring After Acquired Brain Injury

Experimental Group

• Significant improvement within the mindfulness group was observed, measured for language and four participants continued a normal level of memory on post-test (RBMT).

Discussion

• A positive trend was observed in awareness of self-reported everyday memory problems (PRMQ). Participants endorsed more problems, suggestive of increased awareness.

Future Research

• In order to address Aims 1 and 2, we will analyze journal entries to learn more about participant’s experiences in reflecting on mindfulness. We will investigate dose effect to see if better attendance leads to better outcomes.

• We are continuing to collect data and recruit participants to balance groups by age and diagnosis. We are also running another experimental cycle to determine the direction of current trends.

• Future work will further develop the manipulation of this program and will be tested with individuals with chronic ABI.

Acknowledgments

Special thanks to all of our participants for their commitment to this project. We also extend our gratitude to Shepherd Pathways in Atlanta, including Susan Johnson, Dallas Robinson, Dr. Susan Sheehan, Mary Ellen Stover, and Victoria Shueller. Thanks also to Rebekah Rose for her assistance with study coordination and pre and post-testing.

Key References


Appendix A

- Participants with brain injury were excluded.

Appendix B