

Critical Appraisal Form-Quantitative Study

Carrie Brandt, Brittany Czerwinski, Nicole Houck, Wally Maziarz, Nam Phan, Jessica Silverman,
and Megan Waite

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Study Level of Evidence, What Type of Study?

Level I: RCT

Level II: Cohort trial Case-control trial Non-randomized control trial

Level III: Case-control no pre-post test

Level IV: Single case study Case series No comparison group

Level V: Descriptive study Narrative review Expert opinion

Purpose of Study: Is purpose clear? yes no

Describe researchers question/purpose:

"In our study, we sought to explore the effects of a mindfulness-based intervention on attention regulation in school age youths."

METHODS

Were there any biases or ethical concerns in the study design?

The study was limited to families, and those recruited were mostly of European American ethnicity, the study took place in the Pacific Northwest, and the majority of subjects came from 2 parent households.

POPULATION

Who was the sample, how many subjects?

- Families (i.e., parents and children) were recruited from a medium-size city in the Pacific Northwest
- N= 47 children (57% female)
- 98%= European American ethnicity
- Yearly household income ranged from US\$9,000 to US\$250,000, with a median of US\$46,500 Dyads were randomly assigned (balanced by child's gender) to either the MFSR intervention condition (n = 24) or the wait-list control condition (n = 23)

Inclusion Criteria:

- Children between 9 and 12 years
- Ability to read and comprehend English

Exclusion Criteria:

- Having a history of psychological diagnosis (i.e., posttraumatic stress disorder, major depressive disorder, or any form of an anxiety disorder)
- History of epilepsy or seizures
- Exclusion criteria for electroencephalography [EEG] data collection was conducted as part of the larger study

What was the intervention? Frequency, setting?

- Pre-post test were administered 2 weeks prior to the intervention and 2 weeks after the intervention.
- “The group consisted of a maximum of 24 parent–child dyads (i.e., 48 people), During the first 30 min of the class, the entire group met to practice, reviewed the previous week’s material, and reviewed the new topic for discussion that week. For the middle 30 min of the class, the parents and children split into separate groups in different rooms to practice sustained silent mindfulness activities (parent) and shorter child-friendly activities (child) relevant to the lesson topic of the week. After rejoining as a total group, the final 30 minutes of the class were used to summarize the lesson for the day, included a short practice or activity, and reviewed the home practice for the week. Formal mindfulness instruction (e.g., mindful breathing, basic yogic poses) and informal mindfulness instruction (e.g., mindful eating, mindful conversations) were taught every week. Each week participants were asked to practice at home the techniques learned during the session for approximately 15 to 20 minutes per day and record the number of minutes they spent practicing.”
- Intervention group: 8 consecutive weekly 90-minute sessions
- Local community wellness center

Relevant outcomes to OT:

1. This study confirmed that if an intervention is mindfulness-based, then it would improve the child’s attention regulation.
2. Mindfulness strategies help to distract attention away from internal reactions that could cause larger problems like distress, and instead focus on what is going on in the here and now. Technology may help with this, because it can distract a child’s attention in order to keep their mind off of an event that causes distress.
3. After mindfulness intervention participants were more able to use spatial intervention in completing a task.

How was this measured?

1. The child’s attention regulation was measured behaviorally with the Attention Network System (ANT) conflict monitoring subsystem, a technologically-based assessment. This type of monitoring measures how able a person is to self-regulate their attention when there are distractions present.
2. This outcome was also measured using the ANT conflict monitoring subsystem.
3. This was measured by using subsystem orienting scores on the ANT, because the scores were decreased, it showed that his intervention was helpful.

Were the tests valid? Explain

Yes, the ANT is a standardized test with established validity for measuring the variable it intends to measure.

Were the tests reliable? Explain

The ANT is a standardized test however the particulars of reliability are unknown.

RESULTS, CONCLUSIONS, CLINICAL IMPLICATIONS:

What were the findings? Was there:

Statistically significant change?

- Statistically significant intervention effect on conflict monitoring ($p = .02$), as both the MFSR and control groups showed decreases in conflict monitoring scores
- Significant, medium-size ($f^2 = .16$) intervention effects to the conflict monitoring subsystem of the ANT, such that intervention group decreased in conflict monitoring more than the control group.
- Intervention group orienting subsystem improved with a marginally significant effect of intervention ($p = .08$) in comparison to control group
- Marginally significant intervention effect on alerting scores ($p = .07$) compared to decrease scores in control group

Clinically significant change? Explain.

The study found that participation in a mindfulness-based intervention significantly improves children's attention regulation, as measured behaviorally in the ANT conflict monitoring subsystem. The study also found that by promoting attentional regulation specifically and self-regulatory capacity generally, mindfulness-based interventions such as MFSR, could prevent the development of psychosocial dysfunction and could also disrupt pathological developmental pathways.

What did the authors conclude?

The authors concluded that mindfulness-based interventions have the potential to improve attentional self-regulation for youths. The authors suggested that future research should consider incorporating measures of attention into interventions that use mindfulness training.

My Brief Summary:

What I see as study strengths:

Mindfulness-based interventions hold a lot of potential as an innovative and effective intervention approach. The results from the study confirmed the hypothesis, which was that participation in a mindfulness-based intervention greatly improves children's attention regulation as measured behaviorally in the ANT.

What I see as limitations:

The relatively small number of subjects limited the study. Additionally, a limitation to note is that participants in the intervention group had repeated exposure to study personnel by virtue of their participation in weekly MFSR classes, which could have affected the results of the study.

How is the study's findings relevant to OT?

These findings are relevant to occupational therapy because occupational therapists work with clients to prevent and treat psychosocial problems that arise due to a variety of reasons. Mindfulness-based intervention is one way OT's can address psychosocial problems that his or her client may be experiencing. For example, this type of intervention may be useful when a client's goal is to develop coping skills to handle stress associated with his or her disability. According to the study, educating the client on how to increase awareness on a selected somatic experience, while ignoring other irrelevant stimuli will improve his or her attention regulation. An increase in attention regulation will result in a decrease in stress and therefore improve the overall health and well-being of the client. Improving and maintaining health and

well-being is a core component of occupational therapy. Using mindfulness-based intervention to improve attention regulation is one way that occupational therapists can assist individuals in promoting psychosocial development, therefore improving their quality of life.

How do I intend to use these results?

As an occupational therapy student, I intend to use these results to further understand how attention regulation can impact psychosocial development. Promoting psychosocial development is crucial to preventing and treating individuals with psychiatric disabilities. I will also use these results in the future to determine whether or not mindfulness-based intervention would benefit a specific client. In addition, these results can facilitate further research on the effects of mindfulness-based interventions.