

Does Pain Severity Predict Engagement with Mind–Body Interventions in an Orthopedic Clinic?

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Background

What Is Known

Pain and anxiety are common in orthopedic clinical settings. Brief mind-body interventions, such as mindfulness and guided breathing, have been shown to reduce pain and distress and are practical to deliver in clinics using short, tablet-based interventions. Prior randomized controlled trials demonstrate that these interventions can improve patient-reported outcomes and increase interest in additional wellness resources.

What Is Missing

Although the effectiveness of brief mindfulness interventions is well supported, less is known about which patients are most likely to engage with optional follow-up resources. Most studies emphasize symptom reduction, with limited focus on behavioral engagement outcomes. In particular, the relationship between baseline pain levels and patient engagement has not been well examined.

Study Purpose / Research Question

The purpose of this study is to examine whether baseline pain severity predicts patient engagement with optional mindfulness-based resources following a brief tablet-delivered intervention in an orthopedic clinic

Methods

Participants

- Adult patients at the Tallahassee Orthopedic Clinic waiting for diagnostic imaging (X-rays)
- Participants enrolled as part of a randomized controlled trial conducted in a clinical setting

Materials / Measures

- Self-reported baseline pain severity collected prior to intervention
- Brief tablet-based mindfulness intervention (<5 minutes)
- Engagement outcomes assessed post-intervention:
 - Desire for additional mindfulness resources
 - Interaction with optional supplemental content

Procedures

- Patients completed baseline pain assessments while waiting for X-ray imaging
- Participants received a brief mindfulness-based intervention via tablet
- Optional mindfulness resources were offered following the intervention
- Engagement with resources was recorded

Data Analysis

- Secondary analysis of randomized controlled trial data
- Associations between baseline pain severity and engagement outcomes were examined using correlational analyses
- Engagement operationalized as desire for and use of additional resources

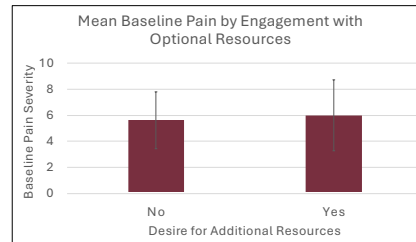


Figure 1. Mean baseline pain severity (Intensity_Pre) by desire for additional mindfulness-based resources. Error bars represent standard deviation.

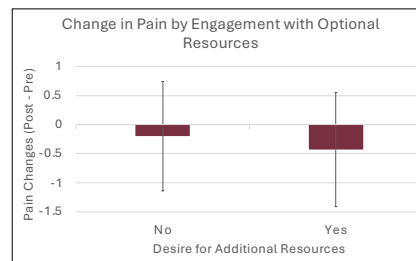


Figure 2. Mean change in pain following the mindfulness recording (post – pre) by desire for additional mindfulness-based resources. Negative values indicate pain reduction. Error bars represent standard deviation.

Results

- 73 participants completed the survey and responded to the optional resources question.
- Mean baseline pain severity (Intensity_Pre) was 5.73 ± 2.33 .
- 28.8% of participants reported a desire for additional mindfulness-based resources.
- Baseline pain severity was not significantly associated with desire for additional resources ($r = 0.08, p = 0.53$; Figure 1).
- Change in pain following the recording (post – pre) was also not significantly associated with desire for additional resources ($r = -0.11, p = 0.37$; Figure 2).

Interpretation

- Results suggest that baseline pain severity alone does not predict engagement with optional mindfulness-based resources.
- Engagement may be influenced by factors beyond pain intensity, such as emotional state, expectations, or prior exposure to mindfulness.
- These findings highlight the importance of examining behavioral engagement outcomes in addition to symptom reduction when evaluating brief clinical interventions

Discussion

- The present findings indicate that baseline pain severity is not a significant predictor of patient engagement with optional mindfulness-based resources in an orthopedic clinic setting.
- These results suggest that patient engagement with mind–body interventions may be influenced by factors beyond pain intensity alone.
- Engagement may reflect cognitive or contextual factors, such as patient expectations, emotional state, or perceived relevance of the intervention at the time of delivery.

Strengths and Limitations

- Strengths:** real-world orthopedic clinic setting; low-burden, scalable intervention; focus on patient engagement.
- Limitations:** secondary analysis limits control over measures; engagement assessed at a single time point; findings may not generalize beyond orthopedic clinic populations.
- Future Directions:**
 - Examine additional predictors of engagement (e.g., anxiety, demographics).
 - Assess longer-term engagement beyond the clinic visit.
 - Inform more personalized implementation of mind-body interventions in clinical care.

Connection to Prior Research

- Previous research on mind–body interventions has primarily focused on reductions in pain and anxiety, with less attention to behavioral engagement outcomes.
- The current findings align with existing literature demonstrating that brief mindfulness interventions are feasible and acceptable across diverse patient populations.
- By examining engagement rather than symptom reduction alone, this study extends prior work and highlights an important but understudied outcome in clinical intervention research.
- These findings emphasize the importance of including engagement metrics when evaluating brief clinical interventions.
- Understanding what drives patient engagement may improve the implementation and personalization of mindfulness-based resources in healthcare settings.
- Results suggest that offering optional mindfulness resources may be appropriate across patients with varying pain levels, rather than targeting based solely on pain severity.

References

