

# 4 Minute, Asynchronous Mindfulness Intervention in the X-Ray Waiting Room: Results from a Randomized Clinical Trial

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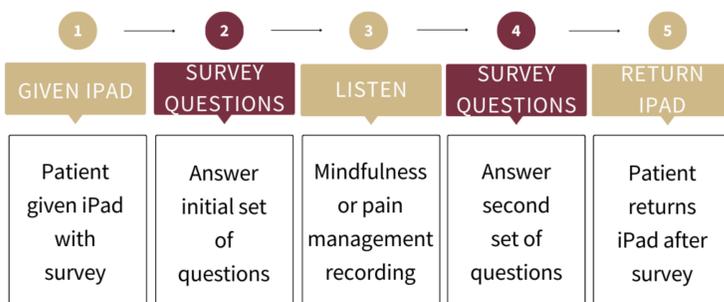
## Introduction/Background

- Mindfulness as a state, trait, process, type of meditation, and intervention has been proven to be beneficial across a diverse group of psychological disorders as well as supporting a general reduction in stress
- There is little known about the impact of brief, audio-recorded mindfulness interventions on patients' pain while in a clinic waiting room
- The hope is that this brief, audio-recorded session of mindfulness will expose the participants to the effects of mindfulness and help reduce pain intensity levels

## Methods

- Participants (n=159) were randomized to either a 4-minute mindfulness condition or a 4-minute injury management control condition (1:1). Both interventions were delivered asynchronously via audio recordings
- The mindfulness intervention included a 1-minute introduction to mindfulness, a 1-minute and 30-second mindful breathing practice, and a 1-minute and 30-second mindfulness of pain practice
- The injury management control intervention introduced a common pain coping technique called "P.O.L.I.C.E." (i.e., protection, optimal loading, ice, compression, and elevation)
- Pain intensity and pain unpleasantness were measured pre- and post-intervention using numeric rating scales (i.e., 0 to 10). Generalized linear mixed models (GLMM) adjusted for baseline scores were used to analyze outcomes

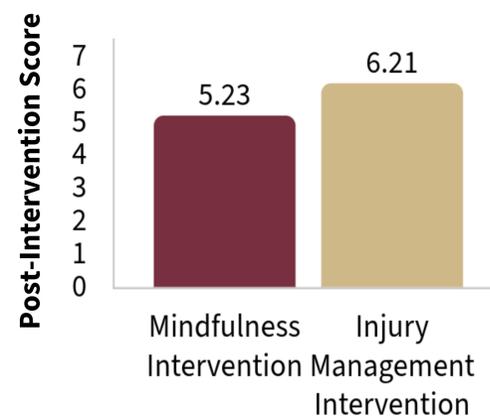
## Study Flow



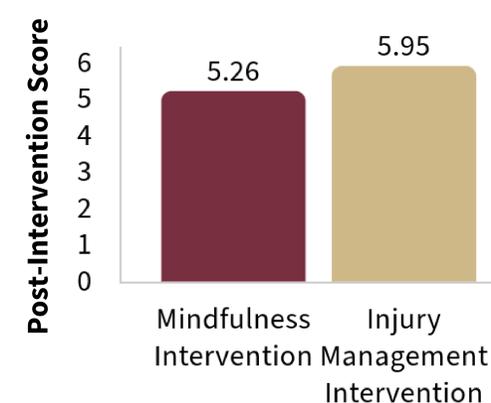
## Results

- 159 participants were included in the final sample, with 79 randomized to mindfulness and 80 to injury management
- Participants in the mindfulness condition reported significantly lower post-intervention **pain unpleasantness** (5.26 vs. 5.95,  $p=.021$ ) and **pain intensity** (5.23 vs. 6.21,  $p<.001$ ) compared to the control group
- Both conditions showed within-group pain reductions, but the decreases were greater in the mindfulness condition group ( $p<.05$ )
- Notably, 35% of mindfulness condition group participants experienced a **clinically meaningful pain reduction** ( $>15\%$ ), compared to 20% in the injury management group ( $p=.044$ )
- Additionally, more mindfulness participants expressed interest in further pain management resources (54% vs. 38%,  $p=.032$ )

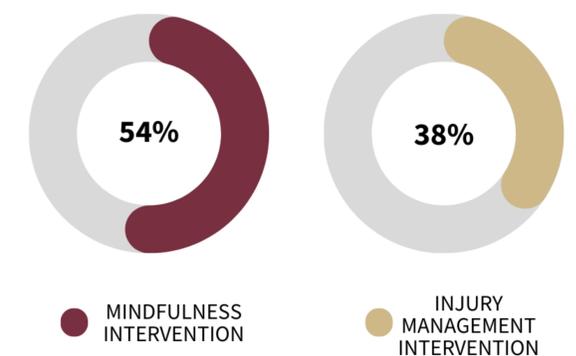
### Pain Intensity



### Pain Unpleasantness



### EXPRESSED FURTHER INTEREST IN PAIN MANAGEMENT REOURCES



## Discussion

- The purpose of this study was to evaluate whether a brief, asynchronous mindfulness intervention could decrease orthopedic patients' pain while they waited for an x-ray
- Results indicated that participants receiving the 4-minute mindfulness intervention reported significantly less pain unpleasantness and pain intensity relative to participants receiving a time- and attention-matched control condition that provided best practice information about injury management
- This brief intervention is a highly scalable approach to pain management that requires no clinician involvement and appears to enhance patients' motivation to seek additional pain management resources
- However, future clinical efficacy trials are needed to test this potential generalizability

## Strengths & Limitations

- Despite study strengths, including the randomized controlled design employing a time- and attention-matched control condition and a large sample size, two important limitations should be considered when interpreting these results
  - Individual participants' pain conditions, current pain medication usage, and prior mindfulness exposure were unknown
  - 29% of individuals invited to participate declined due to a lack of interest or being in too much pain, implying the acceptability of this intervention could be improved

## References

