

# A Pilot Study of Audiovisual Stimulation: Improving Sleep, Pain, and Well-Being in Military Healthcare Workers

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Nightly 16-minute audiovisual stimulation significantly improved depression, anxiety, pain severity, and insomnia in military healthcare workers over 3 weeks.

## BACKGROUND

- COVID-19 created sustained operational stress in military healthcare environments
- Globally healthcare workers experienced elevated sleep disturbance, pain, depression, and anxiety
- Non-pharmacological, scalable resilience interventions are critically needed
- Audiovisual stimulation (AVS) may regulate neurophysiological arousal and improve sleep and mood

## METHODS

### Study Design

- Prospective pilot intervention study
- Pre-post repeated-measures design

### Participants

- N = 19 military healthcare workers
- Recruited from large military medical treatment facility

### Intervention

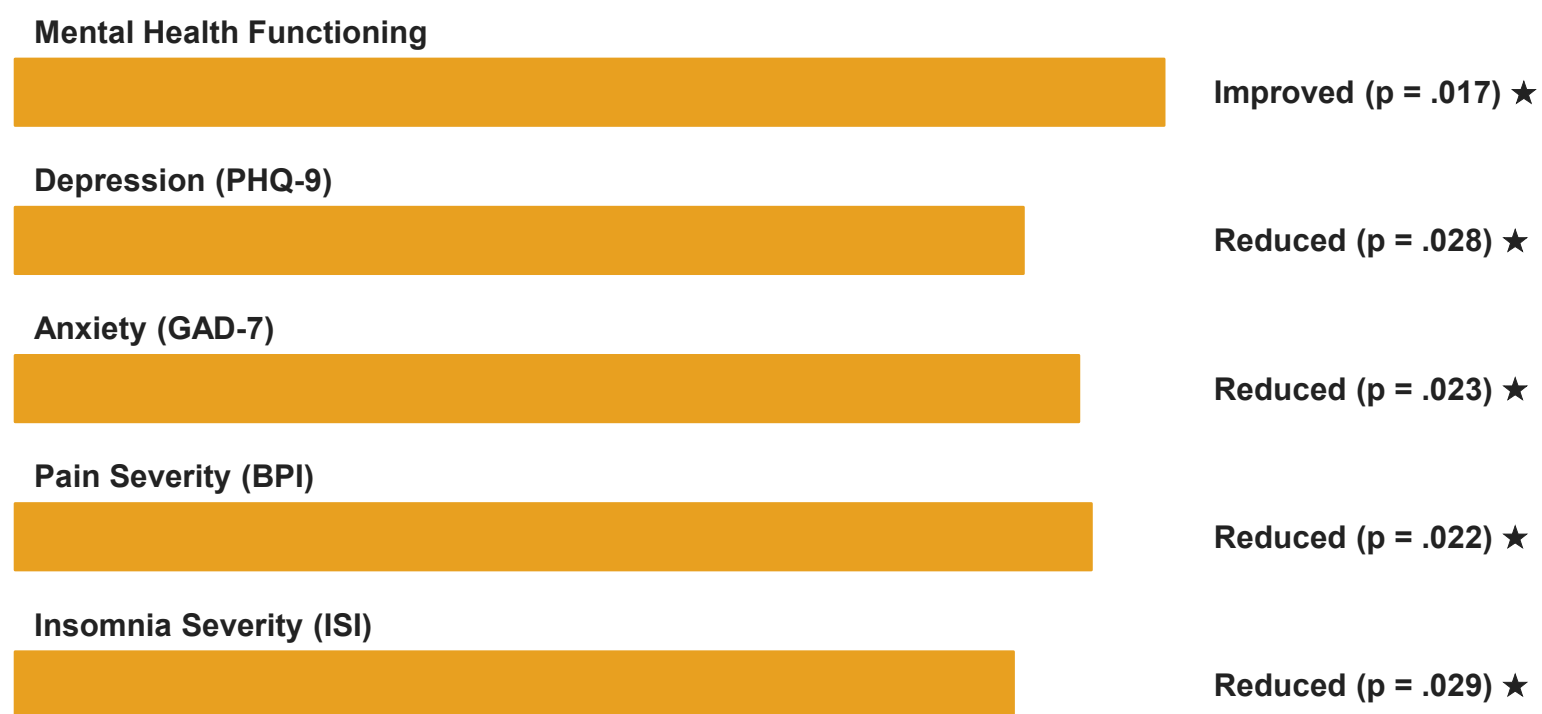
- AVS administered nightly for 16 minutes
- 12–21 sessions over 3 weeks

## CONCLUSION

- AVS is feasible and well-accepted among military healthcare workers
- Significant improvements observed across mood, pain, and sleep domains
- Findings support larger randomized controlled trials
- Non-pharmacological intervention option scalable for military healthcare settings

## RESULTS

### Primary Outcomes: Pre-Post Intervention Changes



### Objective Sleep Metrics



### Acceptability of Intervention Measure (AIM), Intervention Appropriateness Measure (IAM), and Feasibility of Intervention Measure (FIM) Scores

>4.0

Range 1 to 5 (Higher scores are better)

★ = p < .05 (statistically significant)  
★★ = p < .01 (highly significant)

## METHODS (cont.)

### Objective Sleep

- Measured via actigraphy

### Outcome Measures

- Brief Pain Inventory (BPI)
- Insomnia Severity Index (ISI)
- SF-8 Health Survey (SF-8)
- Patient Health Questionnaire-9 (PHQ-9)
- Generalized Anxiety Disorder-7 (GAD-7)
- PTSD Checklist-5 (PCL-5)

### Statistical Analysis

- Paired t-tests
- Wilcoxon signed-rank tests

## DISCLAIMERS

- The views expressed in this poster reflect the results of research conducted by the author(s) and do not necessarily reflect the official policy or position of the Defense Health Agency, Department of War, nor the U.S. Government.

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The study protocol (BAMC C22-142) was approved by the San Antonio Institutional Review Board in compliance with all applicable Federal regulations governing the protection of human subjects.

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