B-174 Transcending barriers to pain care in rural America:
A pragmatic comparative effectiveness trial of evidence-based, on-demand, digital behavioral treatments for chronic pain [833]

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BACKGROUND

Evidence-based behavioral treatments for chronic pain are largely inaccessible, as are mental health providers, especially in rural areas.

OBJECTIVES

To conduct a decentralized randomized controlled trial comparing two evidence-based chronic pain management programs, testing virtual reality (VR) vs. traditional methods
- 3D immersive Skills-Based Virtual Reality (**EaseVRx+**)
- 2D interactive online pain coping skills training (**painTRAINER**)

METHODS

- Patients recruited from 4 sources (**Figure 1**)
- **Inclusion criteria:**
  - ICD-10 code associated with chronic pain
  - Primary ZIP code defined as rural
  - Age ≥13
  - ≥4 pain on 0-10 scale
  - No history of seizure (contraindication to VR)
- **1:1 randomization** to 3D VR vs. 2D web app
- **16** REDCap surveys over **12** weeks
- **Measured improvement in pain intensity** (primary outcome) between baseline and week 8; assessed minimal clinically important difference (MCID) of 2 points
- **Secondary outcomes included**
  - PROMIS anxiety and pain interference
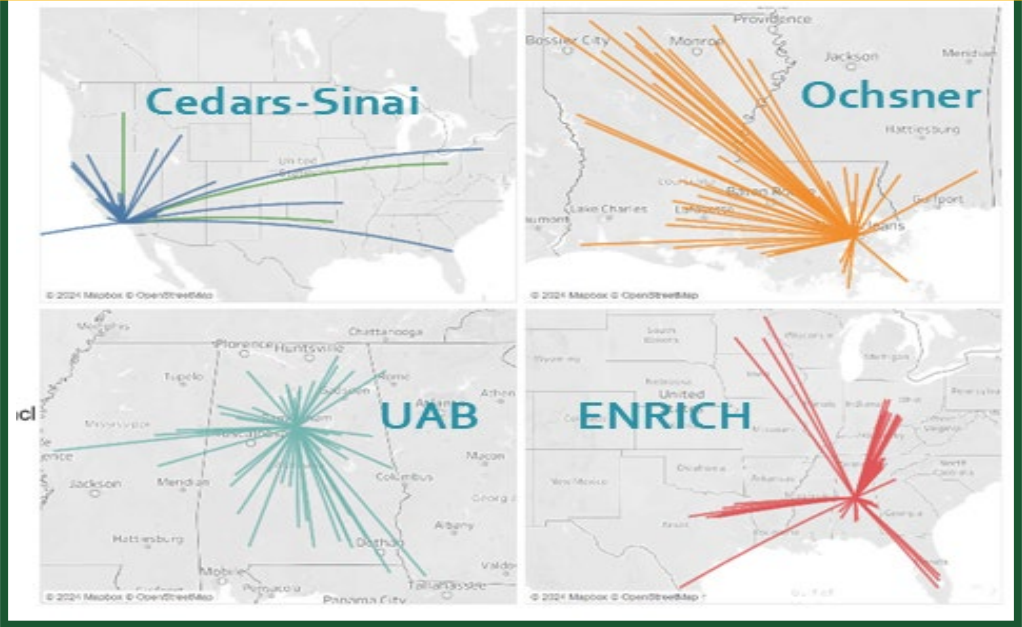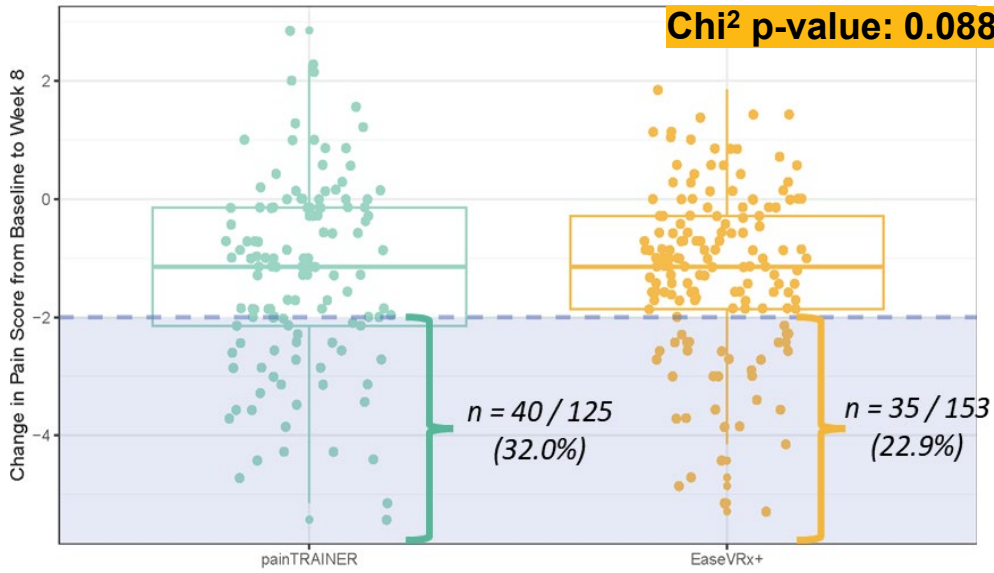 - Pain catastrophizing
  - Pain self-efficacy

RESULTS

- 330 participants (**169: EaseVRx+** and **161: painTRAINER**)
- **84.2%** participants completed trial, provided data for primary endpoint
- **Average pain score improved in both arms** (Mean[SD]: **1.22[1.48]** units)
- **No clinically significant difference:**
  - EaseVRx+ (22.9% achieving MCID ≥2)
  - PainTRAINER (32.0%) (p = 0.088) (**Figure 2**)
- **Baseline and week 8, mean (SD) changes for Ease VRx+ and painTRAINER**
  - PROMIS pain interference -3.2 (6.0) vs. -4.5 (6.3)
  - Pain catastrophizing -1.7 (3.2) vs. -1.8 (3.5)
  - PROMIS anxiety -0.6 (7.6) vs. -0.3 (7.6)
  - Pain self-efficacy for 0.6 (2.8) vs. 1.5 (2.7), respectively (**Figure 3**)

Figure 3: Mean Weekly Changes in Secondary Outcomes

Figure 1: Recruitment Sites

CONCLUSIONS

- **Trial displays effectiveness** of two autonomous (self-paced) digital behavioral treatments for chronic pain anchored in virtual reality and traditional cognitive behavioral therapy approaches
- **EaseVRx+** and **painTRAINER** both shown as
  - **Effective and accessible** behavioral pain treatment for chronic pain
  - Could **improve health equity** in underserved populations for management of chronic pain

Figure 2: ITT Analysis of Pain Intensity Between Baseline and Week 8

Chi² p-value: 0.088
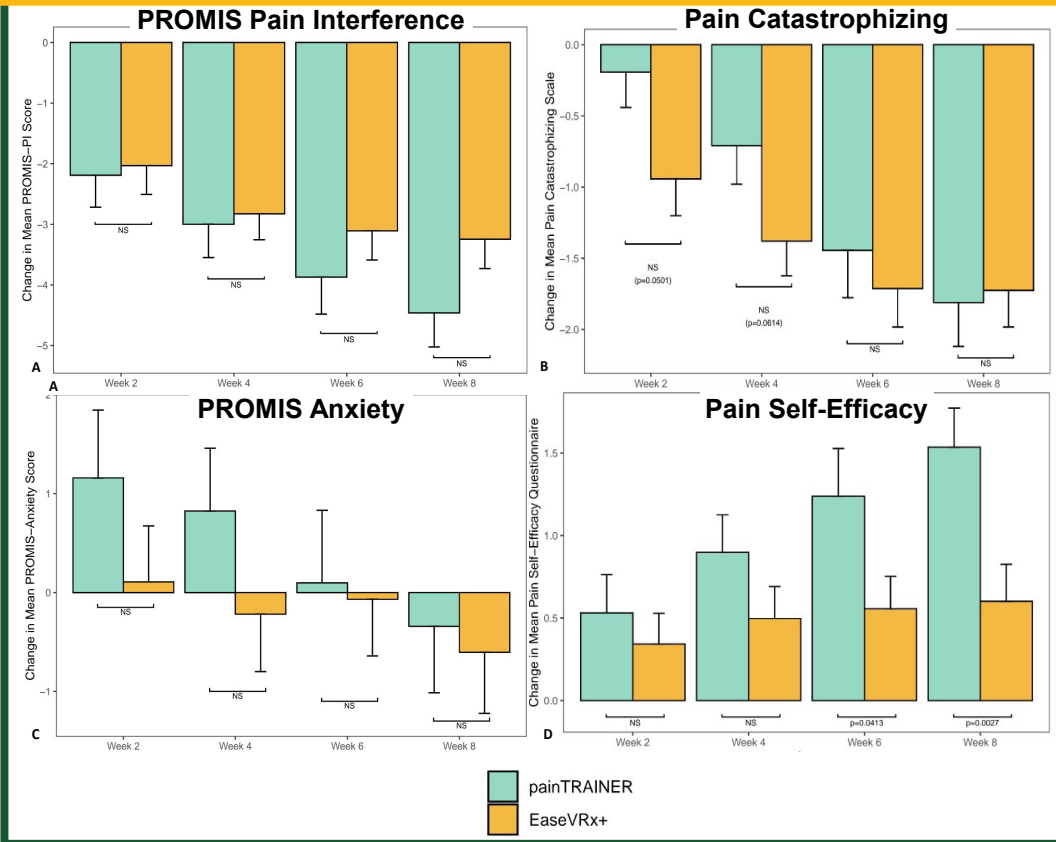
n = 40 / 125 (32.0%)

n = 35 / 153 (22.9%)

ITT: Intent-to-treat. MCID: minimal clinically important difference.
Note: ITT analyses of the primary endpoint required responses to at least >=4 of the 7 daily assessments.