

**Key Insights from the UG3:  
Personalized Auricular Point Acupressure  
for Chronic Pain Self-Management  
in Rural Populations  
and Path Forward for the UH3**

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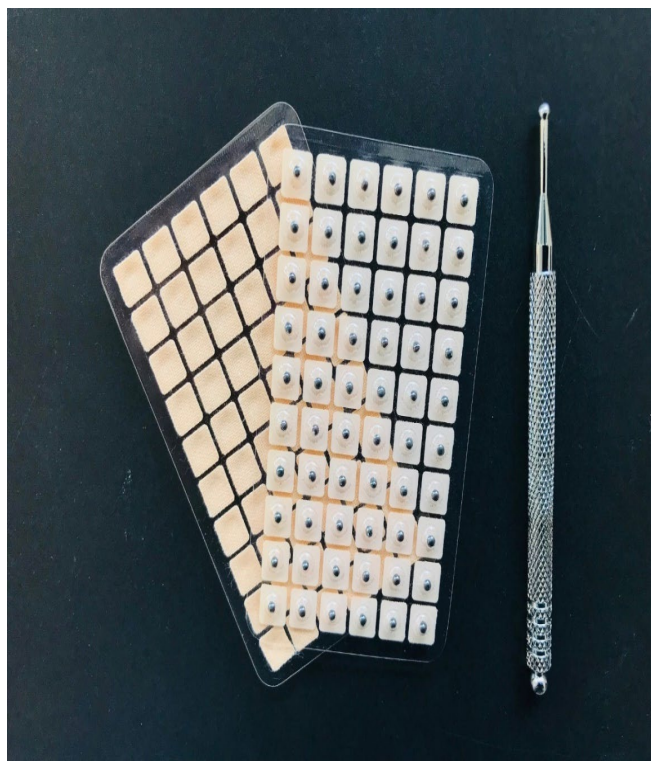


# Two Key Questions

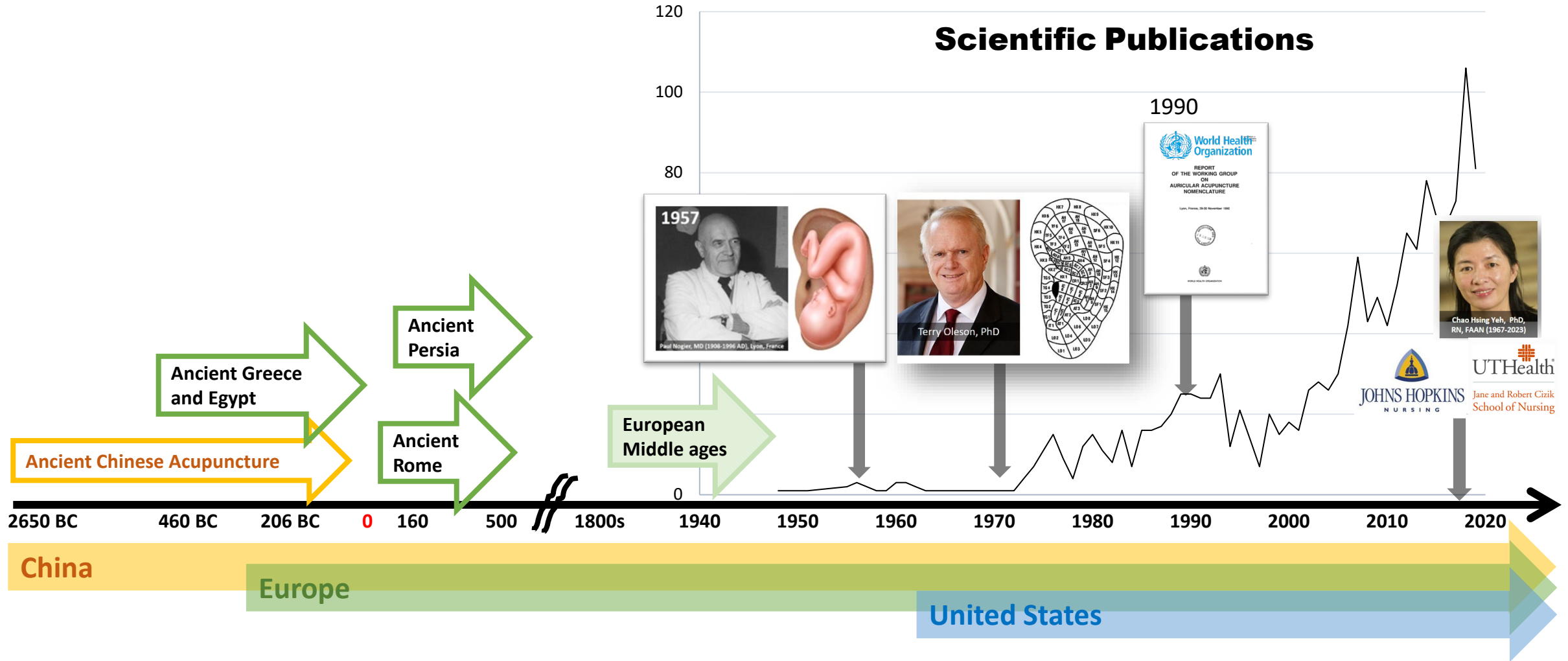
- **How can the Auricular Point Acupressure-Self-Management (APA-SM) program be tailored to meet the needs of diverse rural communities?**
- **What are effective strategies for integrating APA-SM into existing rural pain care?**

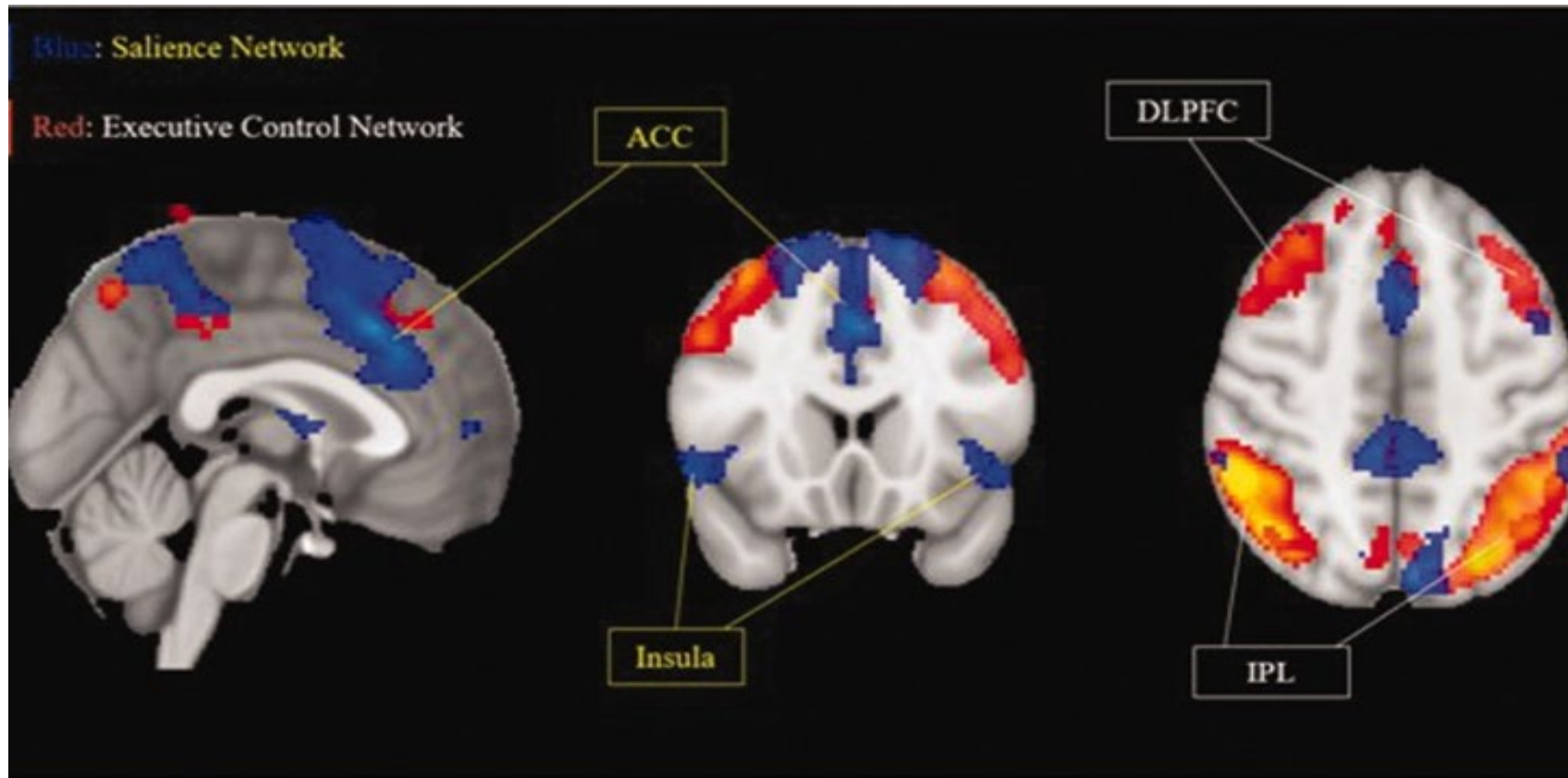


# What is Auricular Point Acupressure (APA)



# Auricular Medicine History

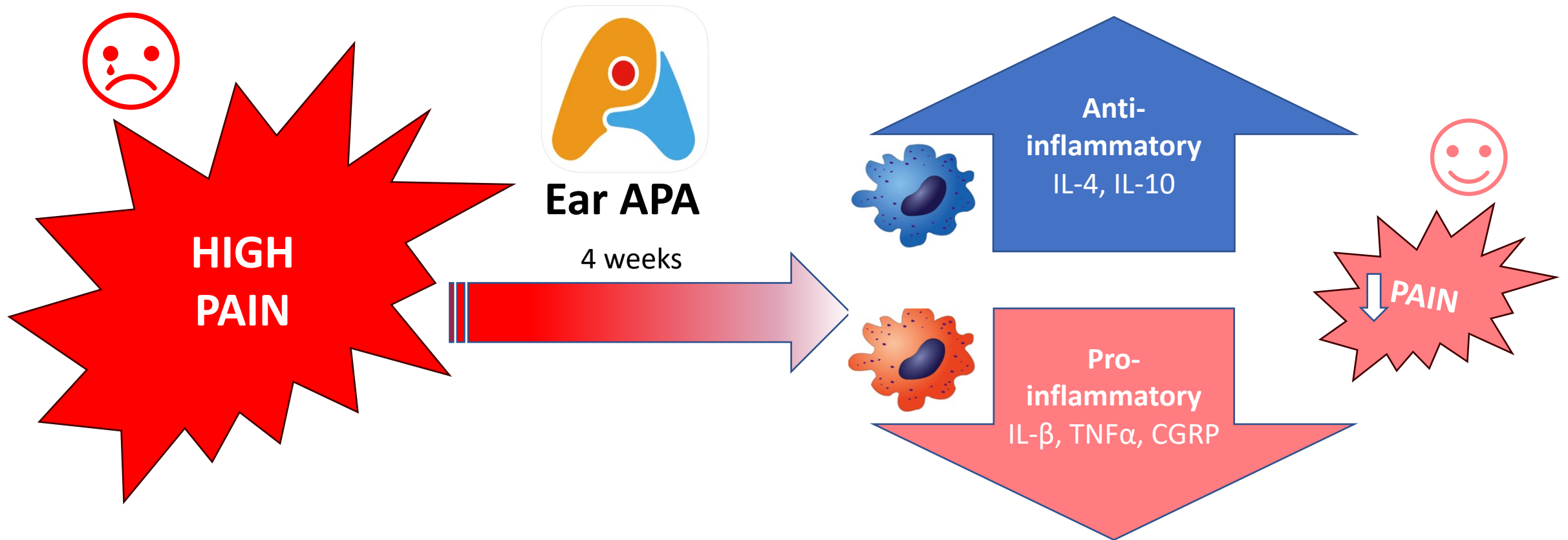




- **Functional MRI**
- **Dynamic Brain Activity Following Auricular Point Acupressure, 2020**
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7019394/>

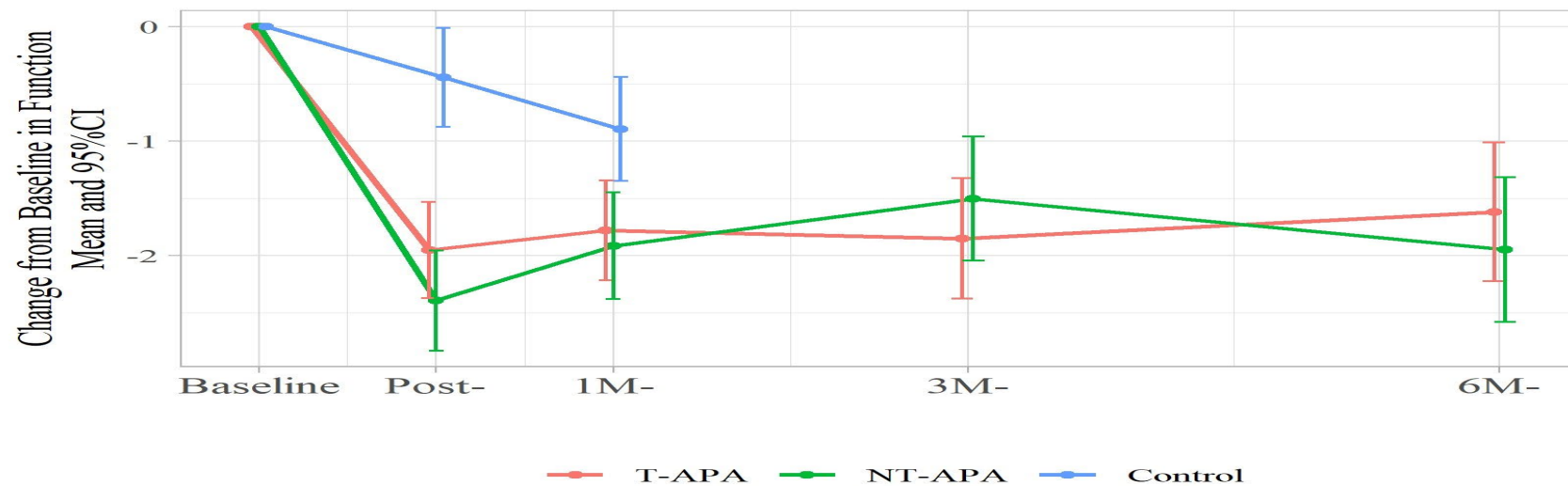
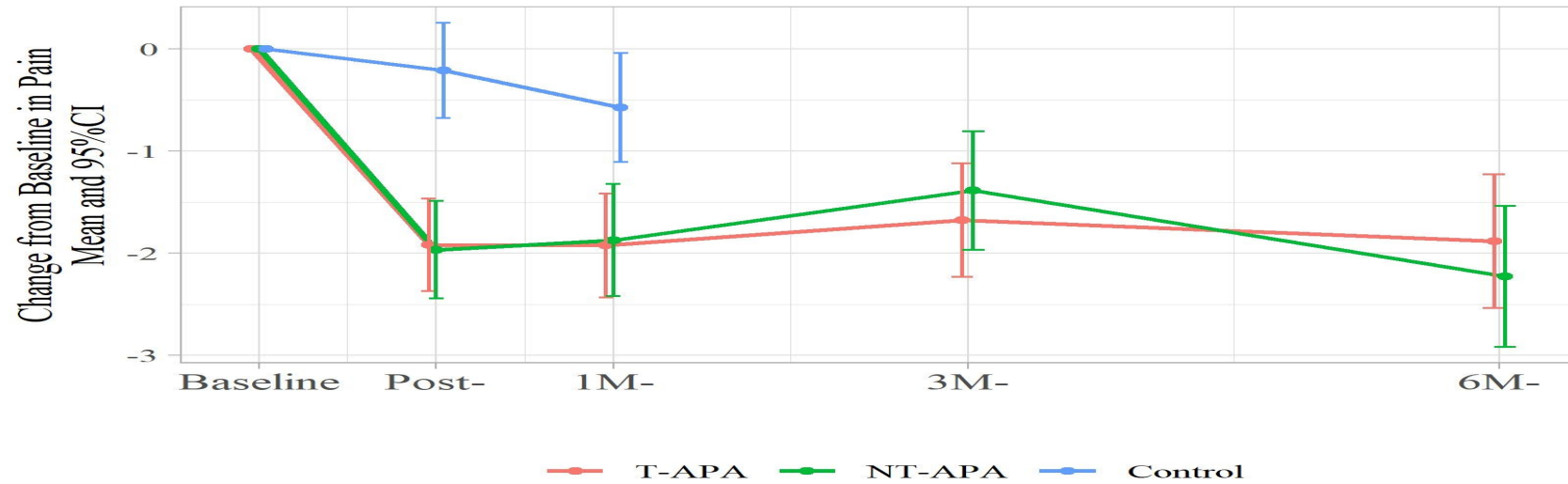
# Pain and Anti-inflammation

Lin et al., Evidence-Based Complementary and Alternative Medicine, 2015, 103570.  
<https://doi.org/10.1155/2015/103570>



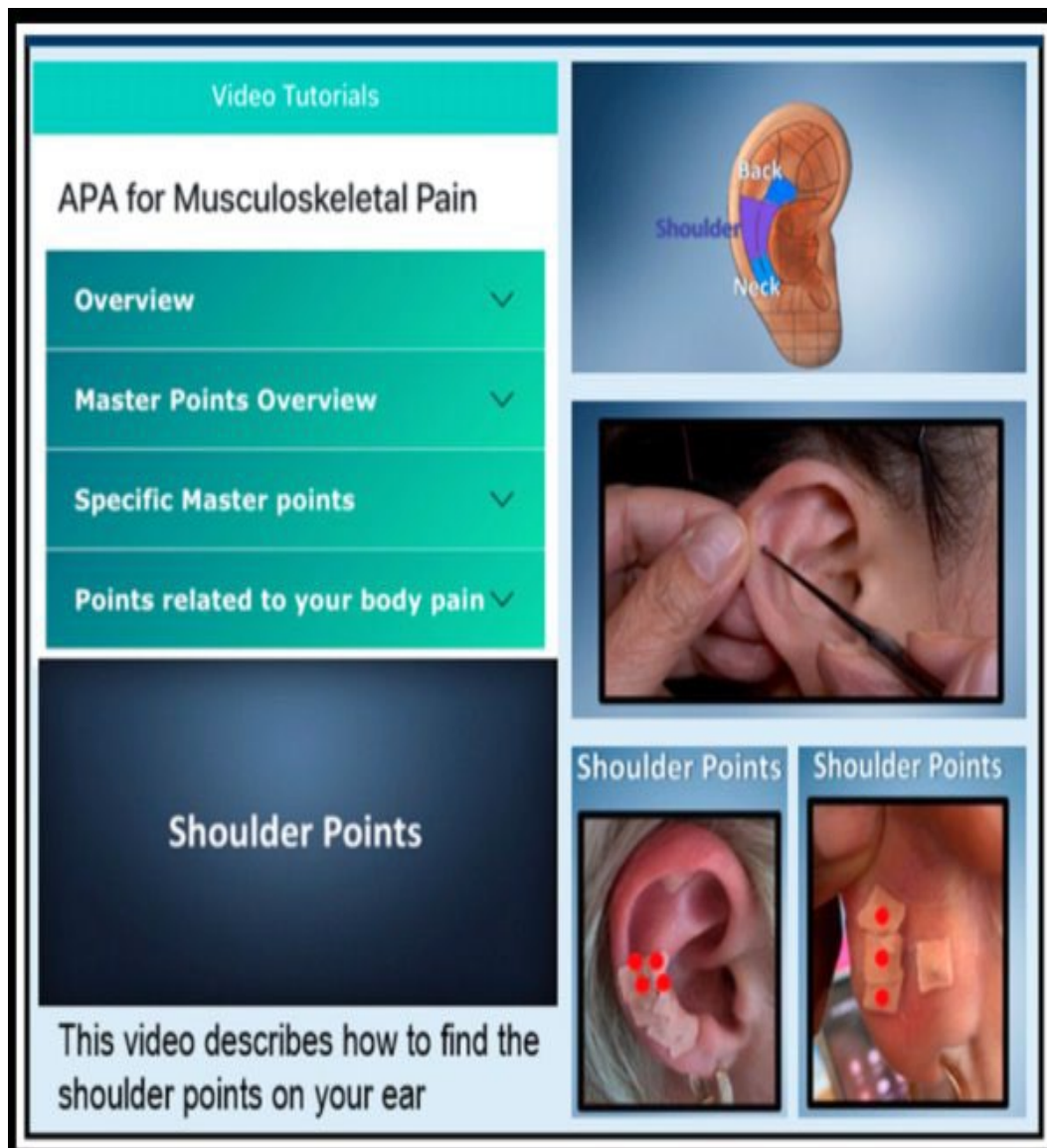
**APA decreases proinflammatory cytokines and increases anti-inflammatory cytokines**  
**Biological Correlates of the Effects of Auricular Point Acupressure on Pain, 2023**  
<https://pubmed.ncbi.nlm.nih.gov/36543665/>

# Change Patterns at Various Endpoints



<https://pubmed.ncbi.nlm.nih.gov/40152243/>

# APA Mobile Application



Healthcare (Basel), 2024 May; 12(10): 969.

PMCID: PMC1121327

Published online 2024 May 8. doi: [10.3390/healthcare12100969](https://doi.org/10.3390/healthcare12100969)

PMID: [38786380](https://pubmed.ncbi.nlm.nih.gov/38786380/)

## Adapting and Evaluating a Theory-Driven, Non-Pharmacological Intervention to Self-Manage Pain

Jennifer Kawi,<sup>1,\*</sup> Chao Hsing Yeh,<sup>1</sup> Lauren Grant,<sup>2</sup> Johannes Thurl,<sup>3</sup> Hulin Wu,<sup>4</sup> Paul J. Christo,<sup>5</sup> and Lorraine S. Evangelista<sup>6</sup>

Jesús Seco Calvo, Academic Editor

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Complementary Therapies in Medicine

Volume 81, May 2024, 103030

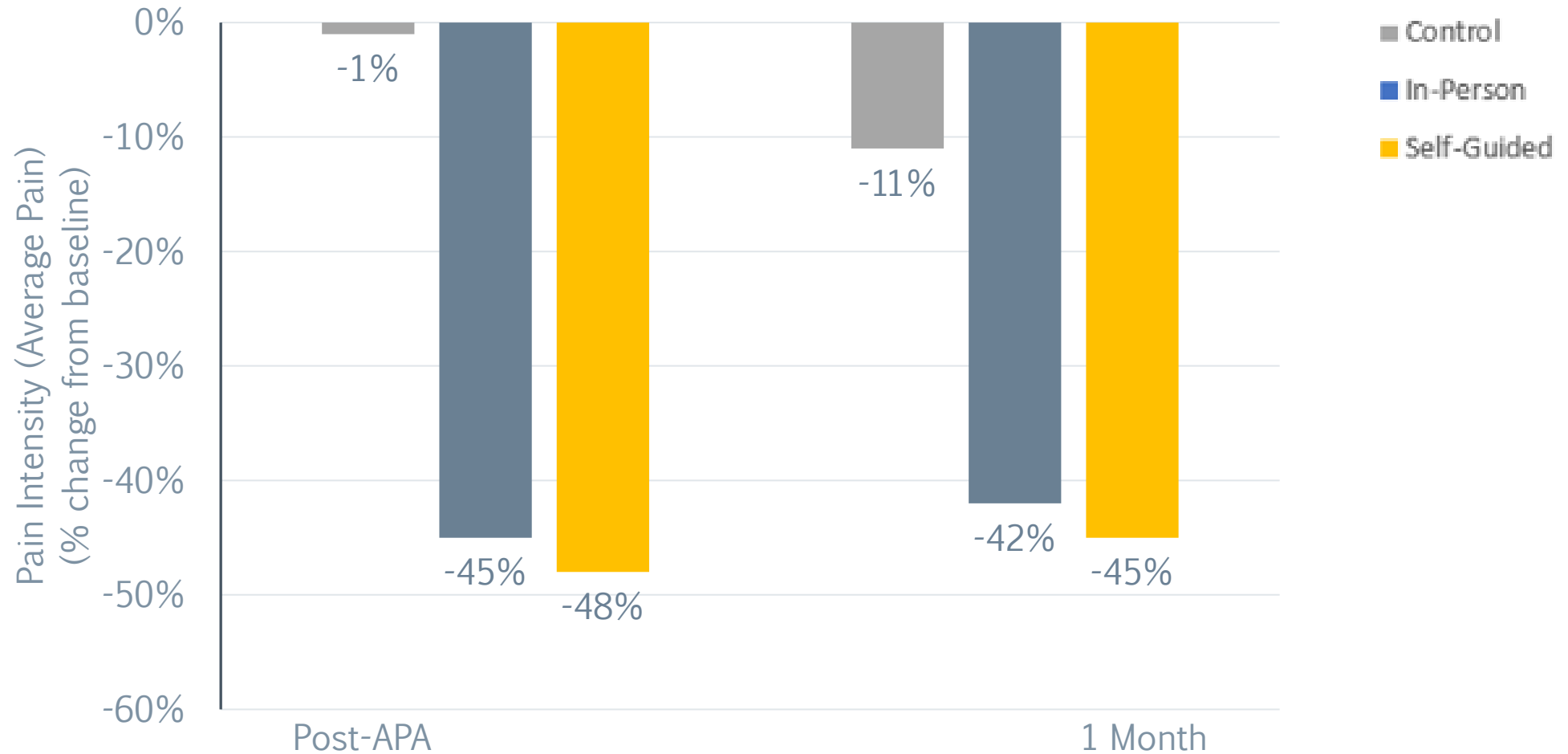


Retention, adherence, and acceptability testing of a digital health intervention in a 3-group randomized controlled trial for chronic musculoskeletal pain

Jennifer Kawi <sup>a</sup> , Chao Hsing Yeh <sup>b</sup>, Lauren Grant <sup>c</sup>, Xinran Huang <sup>d</sup>, Hulin Wu <sup>d</sup>, Chunyan Hua <sup>e</sup>, Paul Christo <sup>f</sup>

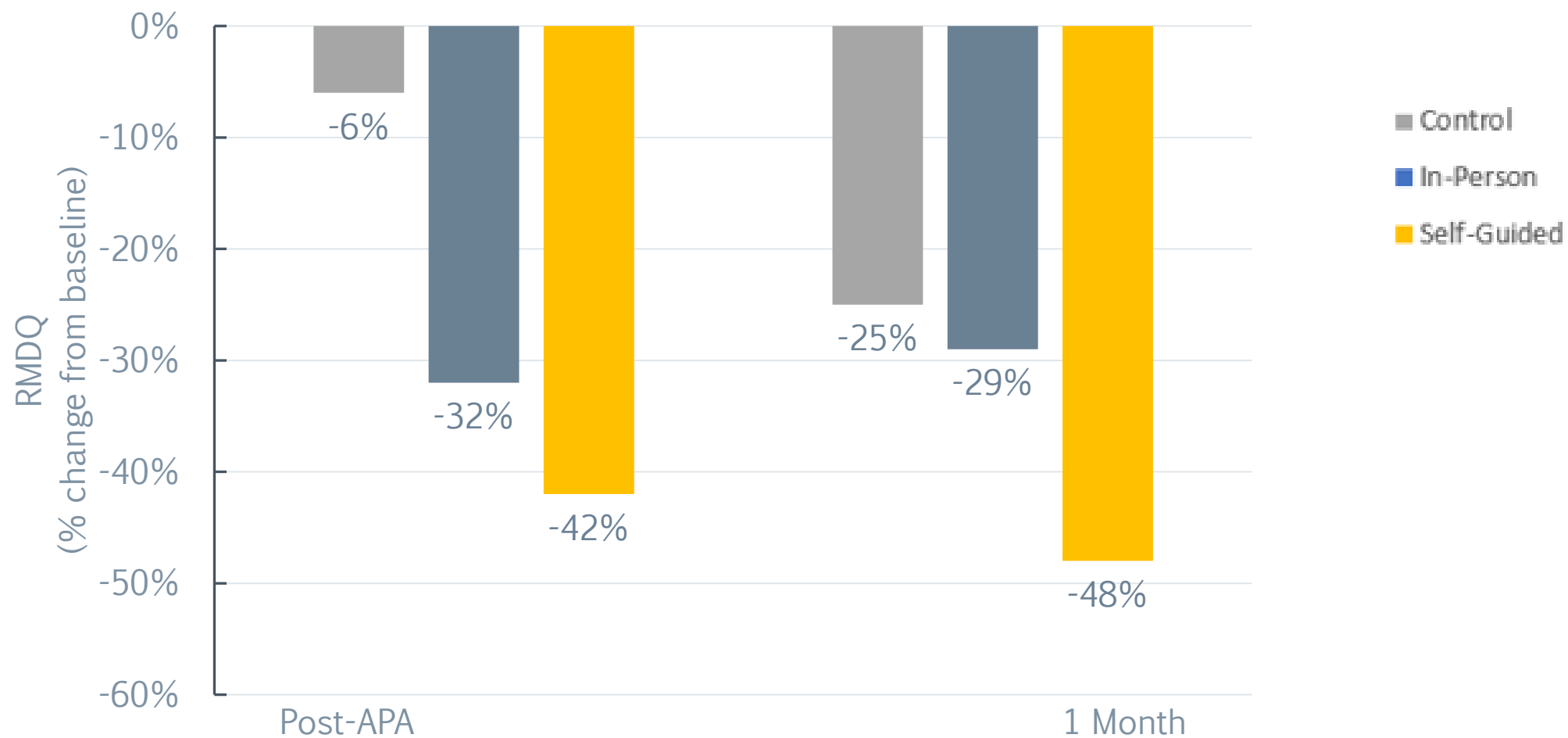
# Pain Intensity

Chao Hsing Yeh, Jennifer Kawi, et al., *International Journal of Environmental Research and Public Health*. 2022 Nov 11;19(22):14875



# Physical Function

Chao Hsing Yeh, Jennifer Kawi, et al., *International Journal of Environmental Research and Public Health*.  
2022 Nov 11;19(22):14875



# UG3

(9/2024-8/2025)

## Community Advisory Board

- **Goals: Identify and address challenges to adapting and sustaining APA-SM. Promote early buy-in, enhance networks, optimize engagement and advocacy.**
- **Convened quarterly meetings**

## 2 Study Aims

- **Elicit stakeholders' perspectives on the APA-SM program and its integration into rural pain care for program refinement.**
  - *Focus group interviews completed*
- **Pilot test the refined APA-SM program to explore participants' experiences and barriers in self-administering APA.**
  - *Participants with chronic musculoskeletal pain*

# Focus Group Study

- **Qualitative descriptive study**
- **Single IRB**
- **South Carolina and Texas between October to December 2024**
- **Purposive sampling based on inclusion criteria (rural):**
  - **Providers (1 group)**
  - **Administrators and policymakers (2 groups)**
  - **Patients (3 groups, bilingual)**
- **6 Focus group interviews using interview guide**
  - **Enrolled 27 > 24 interviewed**
- **Demographic data:**
  - **Mean age = 51**
  - **1/3 male**
  - **1/2 identified as Hispanic/Latino**
- **Thematic Analysis (Braun and Clarke's approach)**

# Findings from the Focus Group Interviews



**Building trust with rural communities, providing meaningful incentives, and having well-trained research staff**



**Communicating the value of APA and providing support through detailed information about APA, motivational messaging, and guidance on integrating APA into daily routines**



**Ensuring accessibility and usability by providing educational materials in diverse, appropriate formats and addressing barriers related to technology gaps and communication needs**



**Fostering partnerships with rural healthcare systems for effective implementation**

# Pilot Study

- **Qualitative descriptive study**
- **Single IRB**
- **South Carolina and Texas between January to February 2024**
- **Recruited 12 participants based on inclusion criteria > 1 dropped out**
  - **Chronic musculoskeletal pain**
  - **Pain at least 4/10**
  - **18 y/o and above**
- **2-week intervention > Semi-structured interviews using interview guide**
- **Demographic data:**
  - **Mean age = 52**
  - **91% female**
  - **1/2 identified as Hispanic/Latino**
- **Thematic Analysis (Braun and Clarke's approach)**

# Findings from the Pilot Study

- **Overall themes:**
  - **Regaining control over pain**
    - **Perceived pain relief**
    - **Self-confidence in pain management - Seed placement verification process**
    - **Reduced use of pain medications**
  - **Use of technology and other tools**
    - **Use of ear photos, smartphone app**
    - **Ecological momentary assessment**
  - **Motivational factors for APA-SM**
    - **Satisfaction with improved comfort**
    - **Instant communication with research staff and instructional support**
  - **Usability and challenges**
    - **Difficulty reaching auricular points on the back of the ear**
    - **Discomfort while sleeping due to ear sensitivity, aesthetics**
  - **Recommendations:**
    - **Clear instructional materials**
    - **Caregiver support during seed placement**
    - **Increased opportunities for live guidance through in-person or group training sessions**

# Key Insights

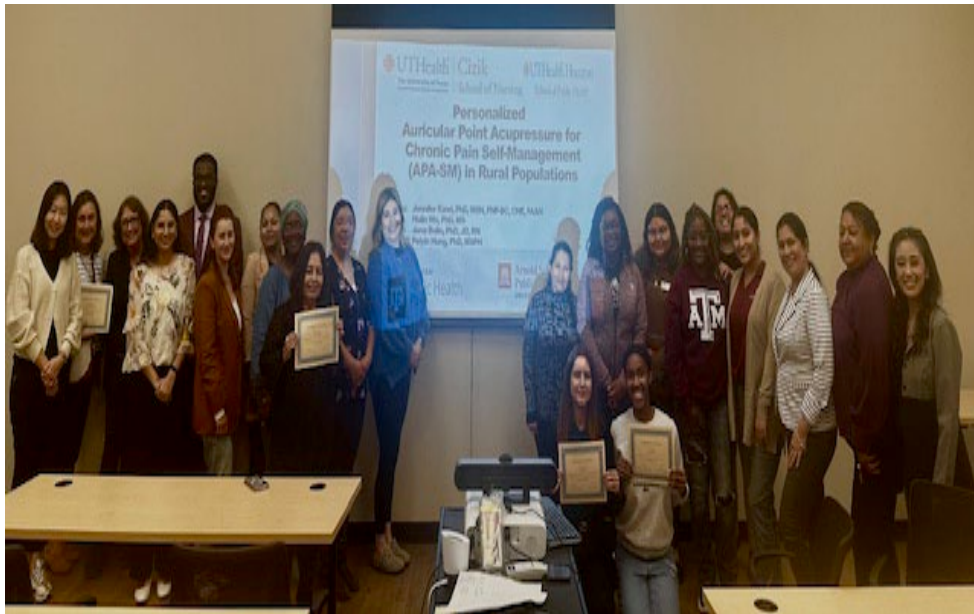
**Use of Bandura's Self-Efficacy Theory as a Framework**

**Inclusion of diverse rural populations**

*culturally relevant, accessible, mobile-based intervention can be transformative in pain management.*

<b>Trust-Building</b>	Engaged and empowered CHWs as key partners and intervention coaches
	Acknowledged participant comprehension of APA and shared goals
	Shared published results with providers and offered authorship opportunities
<b>Partnership</b>	Assigned study team liaisons to connect directly with clinic liaisons
	Partnered with healthcare facilities to align with their pain management priorities
	Secured MOUs with nontraditional partners
<b>Workflow Integration</b>	Streamlining rural clinic workflows
	Provided flexibility in referral pathways
	Facilitated secure communication for data sharing
<b>Community Outreach &amp; Training</b>	Conducted multiple APA training for providers and staff
	Hosted APA demonstration workshops at local clinics, rural health centers, and community events
	Messaged APA as a supplement, nonpharmacologic tool while supporting ongoing usual pain care
<b>Engagement &amp; Retention</b>	Provided timely, plain-language responses to participant queries
	Implemented barrier-targeted, incremental incentives
	Delivered bilingual and low-tech materials to enhance accessibility

# APA Training



## Moving Forward

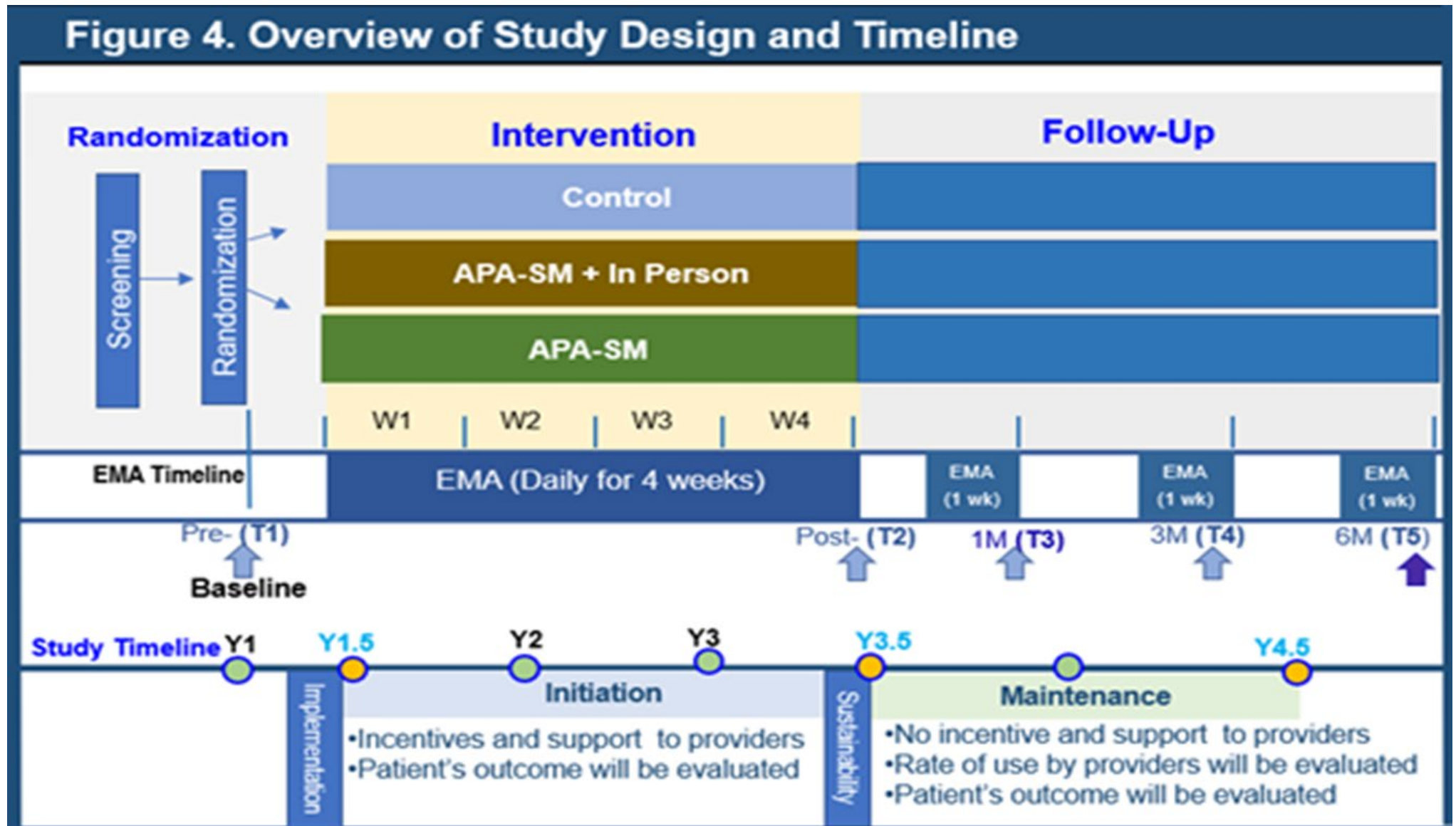
### UH3 Pragmatic Randomized Clinical Trial

- **September 2025**

### MOUs

- **Referral pathway**
- **Historical medical records, Claims Data**
- **Provider incentives per enrolled participant**
- **Workload and burden considered**
- **Expand reach**

# Study Design



# Specific Aims

- **UH3 Aim 1. Determine the effectiveness of APA-SM in chronic musculoskeletal pain (CMP) outcomes**
- **UH3 Aim 2. Examine implementation outcomes**
- **UH3 Aim 3. Assess the cost-effectiveness of APA-SM for CMP**
- **UH3 Aim 4. Identify the predictive factors for APA-SM treatment response**

# Outcomes

- **Primary outcome: pain impact (composite score of pain intensity, pain interference, and activity)**
- **Secondary outcomes: HEAL Clinical Pain Core common data elements, analgesic use**
- **Pragmatic outcomes:**
  - **Provider rate of referral for APA-SM**
  - **Provider satisfaction**
  - **Patient adherence and satisfaction**

# Rural Pain Research Challenges and Strategies



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