Music, Brain Health, and Dementia Summit RESEARCH THEMES / PRIORITIES

AARP headquarters, Washington DC (May 16-18, 2024)

<mark>7/11/24 DRAFT</mark>

Overall Goal of MDRN: To accelerate [*equitable, inclusive*] research [*grounded in clinical and community wisdom*] that aims to understand the mechanisms by which [*culturally-informed MBIs*] affect health and well-being [*in ways that are aligned with priorities*] of older adults living with AD/ADRD and their care partners. **Note**: suggested additions in *italics*.

1. **Theme: Mechanisms (neural and behavioral)**
   a. Evaluate NIH Toolkit biomarkers (18 votes)
      i. Identify appropriate biomarker and link neural mechanisms to Toolkit table
         1. data harmonization (front > back)
         2. theta / gamma activity > retaining memories
         3. stress > cortisol and inflammation
   b. Link neural mechanisms to different stages of dementia (11)
   c. Understand neural mechanisms of MBIs in healthy brains (10)
   d. Link neural mechanisms to specific behavioral and psychological symptoms of dementia [BPSD] (e.g., apathy, agitation) (7)
   e. Link neural mechanisms to specific components of music to help select music (6)
      i. E.g., rhythm, timbre – might be target active ingredients of a MBI, then important to know which neural mechanisms are activated. Example: rhythm-basal ganglia pathway
   f. Build enough evidence (e.g., neural mechanisms) for actionable goals (e.g., Medicare) (5)
      i. Use neurologic MT [music therapy] as an example
      ii. Use NIH Stage model
   g. Address modifiable risk factors - using wearable technology (e.g., actigraphy, MoBI) (3)
      i. Sleep, night awakening
      ii. Relaxation, mood, quality of life
      iii. HRV [heart rate variability] tracking
      iv. Physical activity, sensory stimulation,
      v. Social
   h. Make connections between surface level signal and deep structures, by combining EEG and fMRI (2)
   i. Use neural mechanisms to validate MBIs (1)
   j. Neural mechanisms of non-Alzheimer disease [AD] dementias (e.g., Lewy body dementia, frontotemporal dementia)

2. **Theme: Technology**
   a. Promote open, collaboration for technology design well-suited for music studies (10)
   b. Promote immersive, longitudinal, personalized and multidisciplinary studies (7)

  c. Establish best practices for detecting neurological states of the brain (7)

    i.Develop toolboxes that are validated and open access

  d. Offer workshops and training for music therapists and music-in-medicine researchers about available technology (7)

    i.3-7 day workshops, toolbox

  e. Real time visualization of biometrics (3)

  f. Workforce development of music therapists and dance therapists (1)

  g. Digital twin (1)

    i.refers to a multimodal model of a person that can be used to simulate intervention and their impact of brain health and wellbeing.

3. **Theme: Cultural Wisdom and DEI**

  a. Database of MBIs with consideration/evaluation of culture, heterogeneity, equitable, and training needs (21)

  b. Design our research with persons with dementia and care partners, caregivers, clinicians, allies, activists, organizations with culture bearers, etc. (15)

  c. Promote equity-informed research questions (10)

    i.Include time and funding to support listen and learning across communities and models

  d. Acknowledge that therapeutic uses of music have existed for millennia

    i.Honor the practice, wisdom, and traditions