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### Further Understanding the Efficacy of Music-Based Cognitive Remediation Therapy for Patients with Traumatic Brain Injury

Sruthi Nanduri  
*Rowan University*

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### Objective

To further assess the efficacy of music-based interventions in patients with traumatic brain injury and its therapeutic application to cognitive, motor and sensory deficits due to neurological sequelae

### Introduction

- Traumatic brain injury is a direct result of an external force disabling neurological and neurophysiological functioning
- Sensory, motor, emotional, language and cognitive functioning impaired
- Treatment is usually cognitive remediation therapy (CR)
- In correspondence, music enhances cognitive performance via neural plasticity
- Current literature shows preliminary evidence of the positive results of music in parallel with CR.

### Hypothesis

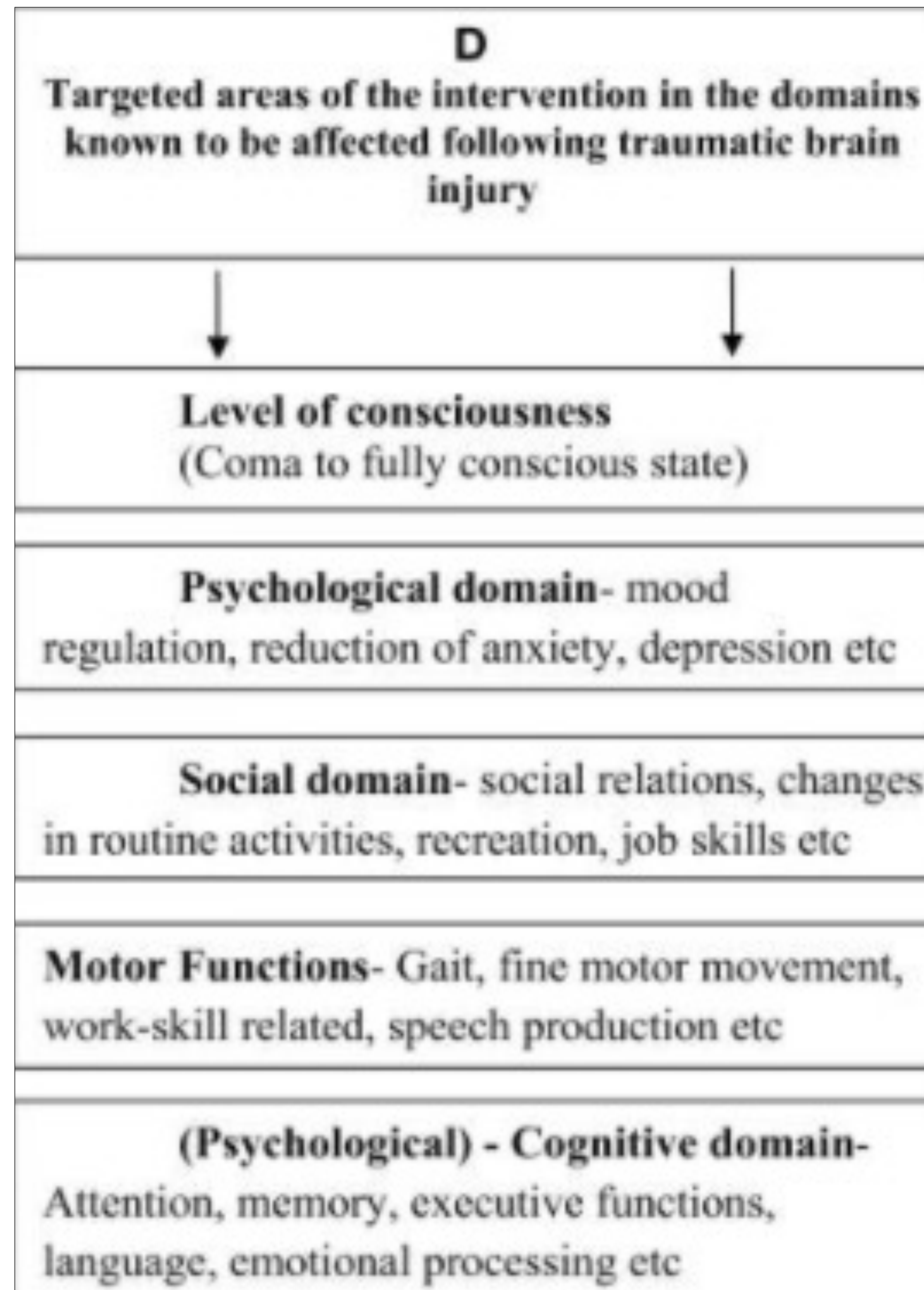
Music based cognitive remediation therapy will induce neural plastic change and influence emotional stability/control, as well as social enhancement in patients who have suffered traumatic brain injury.

### Methods

- Study Design: Literature Review of adult patients (ages 16-60) who have suffered adult traumatic brain injury
- Data Extraction/Extrapolation: Conduct pre-cognitive remediation therapy self evaluation in comparison to results at the end of therapy
  - Gather patient satisfaction data
- Perform neuropsychological testing including; neuroimaging, semi-structured interviews, fMRI and training logs throughout the course of the study.
- Subsequent analysis will be performed to understand potential limitations and significance of additive music therapy to cognitive remediation therapy.

### Limitations

- It is hard to quantify self-reported qualitative data
- Scientific evidence for the efficacy of music based - intervention to improve cognitive, sensory and motor functioning is limited
  - Symptoms among patients with TBI are not standardized
  - No control
- Further review, such as systematic review and/or meta-analysis would be a significant contribution to this topic



Hegde et al 2014

