Interdisciplinary TBI Treatment & Creative Arts Therapy Integration

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Paul Sargent M. D.
CDR, MC, USN
Dept. Head, Concussion Care Clinic
Naval Hospital Camp Pendleton
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Model of Influences on Neurobehavioral Outcome after TBI

Pre-Injury Factors
- Traumatic Brain Injury

Post-Injury Psychosocial Factors

Cognitive Disturbance
- Disturbed Consciousness
- Impaired Attention
- Slowed Processing
- Working Memory Problems
- Memory Disturbance
- Functional Communication Impairments
- Executive Dysfunction
- Depression
- Anxiety
- Irritability/Lability
- Rage
- Agitation
- Aggression
- Disinhibition
- Apathy
- Sleep Disturbance
- Headaches
- Pain
- Visual Problems
- Dizziness/Vertigo
- Seizures

Emotional Disturbance

Behavioral Disturbance

Physical Disturbance

(Adapted from Silver and Arciniegas 2006)
Creative Arts Therapy (CAT)
CAT Treatment Goals

- Pain/anxiety management
- Relaxation/stabilization of vital signs
- Self-awareness/expression
- Emotional regulation
- Appropriate communication
- Learning coping strategies
- Social engagement/group cohesion
- Positive sense of self/accomplishment
- Reintegration to self/family/community/country
# CAT Program Model

<table>
<thead>
<tr>
<th>WEEK #</th>
<th>GROUP TITLE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Movement, Music &amp; Meditation Group</td>
<td>Music therapy and wellness program co-facilitation using music to inform mind/body connection through kinesthetic awareness.</td>
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<tr>
<td>Week 2</td>
<td>Introduction to Music Therapy Group</td>
<td>Music to evaluate and edify auditory perception; emotional regulation, relaxation, diaphragmatic breath and entrainment via music listening; and increased task attention and auditory tolerance through drumming.</td>
</tr>
<tr>
<td>Week 3</td>
<td>a. Music Therapy: Jam Group &lt;br&gt; b. Individual Encounters</td>
<td>a. Music to assist with social engagement, effective communication skills (verbal and non), and problem solving through active music making and songwriting. &lt;br&gt; b. Further exploration of music to meet patient-preferences, interests, needs, and goals in a 1:1 setting.</td>
</tr>
<tr>
<td>Week 4</td>
<td>a. Creativity &amp; Closure Group &lt;br&gt; b. Spousal/Family Sessions</td>
<td>a. Music therapy and wellness program co-facilitation to process experiences in creative arts therapies and wellness programming using improvisational music and creative writing collectively to create final expressive works spoken to live music improvisation. &lt;br&gt; b. Music for appropriate communication, active listening, positive familial interaction, and encouragement of overall healthy family dynamics.</td>
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Music for Neuroplasticity

Music on the mind

When we listen to music, it’s processed in many different areas of our brain. The extent of the brain’s involvement was scarcely imagined until the early nineties, when functional brain imaging became possible. The major computational centres include:

- **CORPUS CALLOSUM**: Connects left and right hemispheres.
- **SENSORY CORTEX**: Tactile feedback from playing an instrument and dancing.
- **MOTOR CORTEX**: Movement, foot tapping, dancing, and playing an instrument.
- **AUDITORY CORTEX**: The first stages of listening to sounds. The perception and analysis of tones.
- **PREFRONTAL CORTEX**: Creation of expectations, violation and satisfaction of expectations.
- **HIPPOCAMPUS**: Memory for music, musical experiences and contexts.
- **NUCLEUS ACCUMBENS**: Emotional reactions to music.
- **VISUAL CORTEX**: Reading music, looking at a performer’s or one’s own movements.
- **AMYGDALA**: Emotional reactions to music.
- **CEREBELLUM**: Movement such as foot tapping, dancing, and playing an instrument. Also involved in emotional reactions to music.
Music Therapy in Medicine

UH Richmond leading the way in fighting opioid epidemic with music therapy

BY: Corrina Pysa
POSTED: 5:15 PM, Nov 10, 2017
UPDATED: 5:18 PM, Nov 10, 2017
Music therapy applied to complex blast injury in interdisciplinary care: A case report

Abstract: Music therapy has a long history of treating the physiological, psychological, and neurological injuries of war. Recently, there has been an increase in the use of music therapy and other creative arts therapies in the care of combat injured service members returning to the United States from Iraq and Afghanistan, especially those with complex blast-related injuries. This case report describes the role of music therapy in the interdisciplinary rehabilitation of a severely injured service member.

http://www.pbs.org/national-memorial-day-concert/features/music-therapy/
CAT Research

Music Therapy Neuroimaging Study
Impact of music on emotional regulation for service members with PTSD. *(In process)*

Music Therapy, Biofeedback & Multidisciplinary Treatment
An exploration of the intersection for complementary alternative medicine (CAM) and traditional treatment. *(In process)*

Art therapy for PTSD and TBI: A senior active duty military service member’s therapeutic journey
*Published in Arts & Psychotherapy*

Active-duty military service members’ visual representations of PTSD and TBI in masks
*Published in the International Journal of Qualitative Studies*
RCT Research: Music Therapy For Emotional Health

• MT for Depression: A RCT
• Music therapy clinicians who work with persons who have depression may be interested in a new study that showed statistically significant changes with music therapy intervention.
• Erkkila et al. (2011) studied the effect of individual music therapy in a RCT study of 79 participants. Participants in the MT group (n=33) received up to 16 music therapy sessions (bi-weekly, 60 minutes) that included music listening, improvisation, active music playing, and verbal reflection. The authors label this as a psychodynamic approach.
• Numerous outcome scales were utilized including MADRS, the HADS-A and the GAF. Results indicated significant improvements in depression symptoms, anxiety symptoms, and general functioning for the music therapy group.
• This was overall a well-explained study. The authors are extremely clear about their study procedures, their statistical analysis, and their limitations. Although a music therapy protocol is not included, the authors are clear about the role of the therapist and the types of exercises that were used in the music therapy sessions. Overall this was a very clear and well-written study that was completed with a good sample size.
• Reference:
Intrepid Spirit NHCP

Ground Breaking May 2017

Ribbon Cutting April 2018
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<tr>
<th>State Licensure &amp; Credentialing</th>
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<tr>
<th><strong>Music Therapy</strong></th>
<th><strong>Art Therapy</strong></th>
<th><strong>Dance Therapy</strong></th>
<th><strong>Drama Therapy</strong></th>
<th><strong>Poetry Therapy</strong></th>
<th><strong>Psychodrama</strong></th>
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<tr>
<th>Minimum Education Level Required to Practice</th>
<th>Bachelor’s</th>
<th>Master’s</th>
<th>Master’s</th>
<th>Master’s</th>
<th>Bachelor’s + Master’s</th>
<th>Master’s in relevant field</th>
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| Education Levels Offered | Bachelor’s, Master’s, PhD | Master’s, PhD | Master’s, PhD | Master’s, PhD | NA | NA |

| Minimum Credentials or Certification Required to Practice | Music Therapist – Board Certified (MT-BC) | Registered Art Therapist (ATR) | Registered Dance/Movement Therapist (R-DMT) | Registered Drama Therapist (RDT) | Certified Applied Poetry Facilitator (CAPF) | Certified Psychodramatist (CP) |

| Credentialing Agency | The Certification Board for Music Therapists (CBMT) | Art Therapy Credentials Board, Inc. (ATCB) | Dance/Movement Therapy Certification Board (DMTCB) | NADTA | The Int’l Federation for Biblio-Poetry Therapy (IFB/PT) | The American Board of Examiners (ABE) |

| Training Required for Credentials | 1,050 hr supervised practicum during Bachelor’s + Exam | 700 hr supervised practicum during Master’s, 1000 paid clinical hrs post-graduate w/ 100 hrs supervision | 200 hrs supervised fieldwork, 700 hr practicum w/ 70 hr supervision during Master’s | 800 hr supervised practicum during Master’s, 1000 paid clinical hrs post-graduate | CAPF + CPT 440 hrs training/supervision, RPT 375 hrs training/supervision | 780 hrs training by other certified individuals, 52 wks experience w/40 hrs supervision (waived for Master’s level mental health degree), Written & on-site exams |

| Additional Credentials Available | N/A | Registered Art Therapist – Board Certified (ATR-BC) Exam required | Board Certified Dance/Movement Therapist (BC-DMT) 3640 paid hrs + Exam required | Registered Drama Therapist/Board Certified Trainer (RDT/BCT) 5 yrs experience as RDT + Exam required | Certified Poetry Therapist (CPT), Registered Poetry Therapist (RPT) Master’s + Licensure in a mental health field required | Practitioner-Applicant-for-Trainer (PAT), Trainer, Educator and Practitioner (TEP) |

| Continuing Education Required | 100 CEUs every 5 years | 100 CEUs every 5 years ATR-BC only | 100 CEUs every 5 years BC-DMT only | 30 CEUs every 2 yrs for RDT/Attendance at a BCT training 1x during 2 yr cycle | 20 CEUs every 2 yrs | NA |

| State Licensure Available | GA, ND, NV, NY, OR, RI, UT, WI | KY, MD, MS, NJ, NM, NY, WI | NY, WI | NY | NA | NA |

| Code of Professional Practice/Ethics | Yes | Yes | Yes | Yes | Yes | Yes |