



## ***Inspiration, Motivation, and Collaboration***

### **The 2020 MTAO Conference and AGM**

Saturday, February 29, 2020

Carleton Dominion-Chalmers Centre (Dominion-Chalmers United Church)

355 Cooper St. Ottawa, ON

#### **KEYNOTE PRESENTATIONS**

##### **Music-Based Speech Rehabilitation**

Cheryl Jones, RP, MMT, MTA, NMT-Fellow, PhD

The loss of speech abilities, whether through an acquired brain injury or a neurodegenerative disease, can result in significant impact on the life of an individual. Speech impairment can limit or prevent a person from communicating their needs, expressing thoughts, can lead to a sense of isolation, and can be frustrating for the individual and their care-givers. Music-based speech rehabilitation can be a unique and effective tool to support a range of speech goals. This presentation will discuss aphasia, describe typical speech impairments, and explore music-based speech rehabilitation. Case study examples and videos will be included.

**Biography:** *Cheryl Jones earned her PhD at the University of Toronto and her Master of Music Therapy at Wilfrid Laurier University. Her research interest is music-based cognitive rehabilitation following acquired brain injury (ABI). Cheryl has taught in the music therapy departments at Concordia University and Wilfrid Laurier University and has been an invited guest lecturer at numerous Canadian universities and at conferences, including national and international. Her clinical work has been featured in two CBC documentaries and in a book, Allison's Brain. Cheryl serves on the Advisory Council for the Academy of Neurologic Music Therapy. She maintains a full time clinical practice in Ottawa, working on rehabilitation and psychosocial goal areas with individuals who have sustained an acquired brain injury.*

##### **Innovative Children's Programs Created by Certified Music Therapists**

Noreen Donnell, MMT, RP, MTA and Adrienne Pringle, MMT, RP, MTA

ComMusicate™ and Sing it Girls!® are licensed programs created to assist certified music therapists in providing excellent services to meet clients needs. Techniques and interventions successfully trialed during many years of work with client resulted in the creation of these two programs. ComMusicate™ is a music-based group intervention program designed to enhance and improve speech, language, and communication skills. Created by a certified music therapist, and in consultation with registered speech-language pathologists, ComMusicate™ provides therapists, educators, and parents with techniques and methods to target communication goals. Sing it Girls!® is an interactive group vocal program for girls ages 7 to 14 who worry or have experienced anxiety. We know a lot of young women love to sing and



this program integrates strategies for building self-esteem, resilience and calming tools with an engaging singing program. Here girls are learning to nurture their love of music while taking care of themselves. In this presentation we will share the core components of each program, give examples of how this has helped individuals that we work with and share with MTAs how they can access these programs for use with their clients.

**Biography:** *Noreen Donnell holds both Bachelor and Master degrees of Music Therapy from Wilfrid Laurier University, is a certified music therapist, and a Registered Psychotherapist with the College of Registered Psychotherapists of Ontario. An avid composer, Noreen loves to create music for a variety of purposes. She is a member of the Songwriters Association of Canada, the Ontario Music Therapy Association, and the Canadian Association for Music Therapists. In her 25+ years working with children, she's had the opportunity to connect with, and learn from colleagues and professionals in related professions, including several skilled Speech Language Pathologists. This powerful collaboration motivated her to create ComMusicate™.*

**Biography:** *Adrienne Pringle is the Director of Beyond the Studio and Co-Founder of the Sing it Girls!® program. Her twenty year career highlights working as a therapist, educator, lecturer, researcher, clinical supervisor and performer. A proud east coaster, Adrienne began her music education in voice at Mount Allison University, and earned her BMT and MMT from Laurier. She is a Registered Psychotherapist with CRPO and recently completed the CBT Certificate through the school of Social Work at Wilfrid Laurier University. She is the past President of the Canadian Association of Music Therapists (CAMT) and music therapist at Carpenter Hospice. Adrienne is a professional supervisor and supervises student practicum and internships in hospice, community agencies and long term care. Adrienne's passion is using voice, song and music to support emotional and physical health across the life span. Most recently, Adrienne created the Singing Well bereavement program, her research in collaboration with Dr. Laurel Young was published in Bereavement Care, Summer 2018.*

### **How Music Induces Interbrain Synchronization in Clinical Settings**

Kyurim Kang, MM, PhD Candidate

Music arouses emotions and is also one of the most powerful tools to bring people together. Music listening or playing can help to build social interaction. Findings have indicated that physiological indicators can align spontaneously and contemporaneously between people during social interaction. EEG research has shown this also for music-based interaction, how interbrainwave synchronization emerges while performers in music ensembles interact musically with each other. In such context music drives a mutually calibrated state of emotional and physiological 'synchronization'. Theories have ascribed these states as an expression of empathy. Physiological signals of synchronization have been observed in heart rate between mother and child, electrodermal activity between patient and therapist, or higher order brain networks between speaker and listener. It has also been suggested that empathy states may facilitate group cohesion and cooperative behavior.



The research investigating ‘physiological empathy’ applied to clinical neurodevelopmental or neurorehabilitation settings is very limited. However, an appraisal of the literature would suggest that music may be a potent language to drive interpersonal synchronization socio-emotionally and physiologically. Furthermore, in clinical populations, especially with severe disabilities, verbal communication may be very limited to express mutual empathy in words. Therefore, new research that monitors interpersonal, physiological synchronization in clinical settings could be important to objectively assess the extent of how participants in a therapy context (e.g., clients, caregiver, therapist) become connected in empathic interaction and if intentions and actions of clients with limited or no verbal capabilities are being communicated and comprehended in a way that elicits an empathic synchronized brain response in their caregivers. If physiological markers in clinical settings can emerge, then music-based interventions may be one of the most effective tools to elicit them. Pilot and a current study data will be presented to show rationale, experimental design, and preliminary evidence for clinical interbrain synchronization.

***Biography:*** *Kyurim (Kyu) Kang is a Ph.D. Candidate in the Music and Health Sciences program at the University of Toronto. Her current research focuses on interbrainwave synchronization with electricalencephalography (EEG) among children with disabilities, their parents, and music therapists during music therapy and storytelling sessions. Moreover, she is participating in the project “Rhythmic Priming and Speech Intelligibility in People with Parkinson’s Disease.” Kyurim received her Bachelor of Music in Music Therapy from West Texas A&M University in 2011, and Master of Music in Music Therapy from Colorado State University in 2015. Her Master’s thesis was titled “Musical Neglect Training for Unilateral Visual Neglect from Right Hemisphere Stroke.” During her internship at Fairview Developmental Center, Costa Mesa, California, in 2011, she worked with various populations, including those with developmental disabilities and intellectual disabilities. She also has experience with neurological disorders, such as Parkinson’s disease and stroke, while working in music and exercise groups at Colorado State University during her Master’s. Also, she is currently attending the music and exercise group for elderly people at St. Paul’s Church in Toronto.*

### **The Innovative Music Therapy Program for Children’s Well-being and Personal Growth**

Larissa Zoubareva, MA, MMT, RP, MT-BC, MTA, NMT-Fellow

This presentation introduces a developmental music therapy model which is based on the ‘gene-environment correlation’ using the epigenetic framework where a child’s development is the result of ongoing, bidirectional exchanges between heredity and all levels of their environment. This program is an example of the integration of spiritual holistic and innovative scientific evidence-based approaches including Bonny Method of GIM and Neurologic Music Therapy. Participants can learn how in a creative nurturing musical environment, classical music could be a tool for regulating the ‘turn on’ or ‘turn off’ gene expression which needs to be triggered through positive reinforcement. This presentation in a lecture format can evoke the



interest of other music therapists to this model for children's and adolescents' development, mental health, and personal growth. Settings for this program have included community centres, private schools, special education units, correctional facilities, and psychiatric institutions.

***Biography:*** Larissa Zoubareva is a board-certified music therapist – Music Therapist Accredited with a private practice in the Greater Toronto Area. Much of her work has been with children's holistic wellness and mental health. She has also worked in-depth with hospitalized oncology and palliative care patients.



## **POSTER PRESENTATIONS**

### **Exploring the Role of Music Therapy Interventions to Address Anxiety in Various Populations**

Ritika Arora<sup>1</sup>, BHSc (candidate), Rachael Finnerty<sup>23</sup>, RP, MTA, MMT, MA

Anxiety comprises one of the most prevalent mental health concerns in North America, and is characterized by overwhelming feelings of worry and fear that cause distress or interfere with daily functioning. Many primary studies have demonstrated the efficacy of music therapy interventions to treat anxiety and related disorders.

**Methods:** A comprehensive literature search was performed in the PubMed, Embase, PsychINFO and ClinicalTrials.gov databases using the following keywords: “music therapy interventions”, “anxiety”, “trait anxiety”. The initial search yielded 45 results. Studies examining anxiety pre-surgery, anxiety associated with a specific event, and/or using a definition of music therapy not compliant with the worldwide standardized criteria were excluded.

**Results:** 11 studies were included in the review, and 10 studies showed that music therapy interventions were effective in reducing anxiety levels. A pooled sample size of 465 participants were examined, including individuals with anxiety disorders, thought disorders, obsessive compulsive disorder, migrant farmworkers, prison inmates and terminally ill patients. Anxiety was measured pre and post music therapy sessions using standardized measures such as the Beck Anxiety Inventory. Improvisation was the most commonly used intervention, being implemented in 25% of the studies. The length and number of music therapy sessions varied considerably across all studies, ranging from a single session lasting 20 minutes to 15 sessions lasting 60 minutes each. Most interventions were conducted in middle-aged adult populations.

**Conclusions:** The present literature review indicates that music therapy interventions are a promising avenue for addressing anxiety concerns in various populations. Future studies should examine younger populations, use larger sample sizes and include a control group.

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<sup>2</sup>*School of the Arts, McMaster University, Hamilton, Ontario, Canada*

<sup>3</sup>*Music Therapy Academy, Hamilton, Ontario, Canada*

**Biography:** *Ritika is in her final year of the Honours Bachelor of Health Sciences program at McMaster University. She is currently conducting research projects focused on improving wellbeing for undergraduate students, through music therapy approaches as well as resilience-based interventions. She is interested in pursuing postgraduate training in the field of public health and/or health psychology.*



**Exploring the Role of Music Therapy Interventions in Treating Stress and State-Anxiety:  
A Literature Review**

Sharon Chernyak<sup>1</sup>, Zachary Rezler<sup>1</sup>, Annilee Baron<sup>2</sup>, MTA, NMT,  
Rachael Finnerty<sup>2</sup>, RP, MTA, MMT, MA

Stress and state anxiety, affecting millions of individuals worldwide, are mental health concerns on the rise amongst youth and adults in North America. The terms are often interchangeable, collectively defined as acute states of fear, nervousness or discomfort, and arousal of the autonomic nervous system during instances of perceived threat. As the need for practical treatment options continues to grow, music therapy (MT) may prove to be a viable intervention. As such, an understanding of its role and efficacy in treating stress and state anxiety on both a psychological and physiological basis is required.

**Methods:** A comprehensive literature search was performed in the PubMed, Embase, PsycINFO and ClinicalTrials.gov databases using the following keywords: “music therapy”, “stress”, and “state anxiety”. The initial search yielded 239 results. Studies employing music interventions not overseen by a board-certified music therapist were excluded.

**Results:** 20 studies met the predetermined inclusion criteria, of which 17 (85%) showed statistically significant results for MT interventions in reducing stress and state anxiety levels. 6 studies incorporated physiological measures of stress and state anxiety (30%), with 83% showing statistically significant improvement of at least one parameter. A variety of physiological measures were assessed, including salivary cortisol, blood pressure, and heart and respiratory rate. Over the 20 studies, a pooled sample size of 891 participants of various ages, backgrounds, and diagnoses were examined. Stress and/or state anxiety were measured pre- and post- MT sessions using standardized measures such as the State-Trait Anxiety Inventory (STAI), and in some cases, additional physiological parameters. A plethora of MT interventions were utilized, with Guided Imagery and Music (GIM), improvisation, and progressive muscle relaxation (PMR) techniques being among the most common.

**Conclusions:** This literature review demonstrates MT interventions to be promising avenues of treatment for stress and state anxiety in various populations. Future studies should aim to narrow their focus to age-specific populations, such as youth who are currently at the highest risk for stress and state anxiety. Additional research focuses should include comparative analyses for different MT interventions and comparisons of efficacy to more widely accepted therapeutic models, such as verbal therapy, for treating stress and state anxiety.

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<sup>2</sup>*McMaster University; Ontario Music Therapy Academy, Hamilton, Ontario, Canada*

**Biography:** Sharon Chernyak and Zachary Rezler are in the third year of their Health Sciences degree at McMaster University. Their exposure to the field of music therapy through music therapy courses offered at their university piqued their interest in the field's unique impact in healthcare. In partnership with McMaster and the Music Therapy Academy, the two undergraduate students have composed a literature review surrounding music therapy



*interventions for treating stress and state anxiety. Under the supervision of Rachael Finnerty and Annilee Baron, two credentialed music therapists and McMaster sessional instructors, Sharon and Zachary are also helping coordinate a campus-based study to assess the efficacy of music therapy interventions in treating stress and state anxiety.*

### **Inspiring the Next Generation: Accessible Advocacy for Youth**

Hayley Francis Cann, BMT, MTA, NMT

How did you learn about music therapy? If your story is anything like mine I did not discover music therapy as a profession until I was a senior in high school researching programs to study in University. As practicing music therapists, we are constantly advocating for our growing profession and connecting with people in creative ways. The 2020 MTAO conference is centred around inspiration, motivation and collaboration. How do we inspire a new generation of therapists? How do we motivate more people to learn about clinical music therapy? How can we as a body of therapists collaborate to make music therapy a more accessible topic of conversation in our communities? The book I am proposing to present, “*Mandy’s Mom, the Music Therapist,*” is the amalgamation of two things I understand to be true as a human being and as a music therapist: 1) We learn and shape our initial opinions about the world as children based on the things we read, watch, and hear, and 2) Many people do not know what music therapy is, how it is implemented, and that it exists as an achievable, evidence-based profession. As a passionate advocate for this growing field, I wondered how I could combine and combat these two realities. This book is my answer. This presentation will take the form of a book reading over a period of time that allows for guided and informal discussion with participants. This will be an interactive space where I can present my work and receive feedback and answer questions.

***Biography:*** Hayley Francis Cann provides music therapy services to Katarokwi/Kingston, ON and Area. Throughout her life, Hayley enjoyed performing in various ensembles and choirs in the community and volunteering at hospitals and seniors homes. This lead her to pursue a career involving music and connecting with people. She studied at Acadia University to obtain a Bachelor of Music Therapy (BMT). In this programme she received advanced training in piano, guitar, and voice, as well as saxophone as her principle instrument. In June 2017 Hayley became an accredited music therapist recognized by the Certification Board for Music Therapists (CBMT) and the Canadian Association of Music Therapists (CAMT). In May 2018, Hayley became a recognized Neurologic Music Therapist (NMT) with The Academy of Neurologic Music Therapy specializing in music therapy approaches for rehabilitation. She has clinical experience with seniors including dementia and Alzheimer’s, individuals with developmental disabilities, and rehabilitation including stroke, acquired brain injury, multiple sclerosis, and amusia to name a few. Hayley is currently pursuing a Masters of Science in Aging and Health at Queen’s University to further explore the aging process and collaborate with professionals in the healthcare industry on ways to promote wellbeing during the aging experience. Through her work as an accredited music



*therapist, Hayley aims to provide an authentic experience that is respectful toward all people no matter their age or diagnosis.*

**Indigenous Music, Land-based Ways and Music Therapy in Canada:  
Stories of Music as Healing**

Kaitlyn McLagan, MMT, MT-BC, MTA

Through reconciliation, Canadian Settlers are beginning to have awareness that the voices of Canadian Indigenous peoples should be heard. This case study, using narrative inquiry and informed by Indigenous methodologies, is a personal pursuit of learning, growth and relationship that highlights threads of learning from an in-person conversation with Daniel Dunn (pseudonym) from Beaver Lake Cree Nation. Daniel Dunn shared personal stories and perspectives around music, healing and the relationship between music and healing. The aims of this study are: to encourage future conversation between music therapists and Indigenous music makers, to acknowledge the presence of music in Indigenous ceremony and healing before the Eurocentric formalization of music therapy, to continue the ongoing dialogue between Indigenous and Settler people in Canada.

***Biography:** Kaitlyn McLagan is a recent graduate from Wilfrid Laurier University Masters of Music Therapy program. Kaitlyn has music therapy experience working with individuals across the lifespan; from infancy to older adults. She has supported inpatients, outpatients, and family members in hospitals with a focus on psychosocial needs. Adult and adolescent mental health are areas of interest for Kaitlyn, and she has facilitated individual and group music therapy sessions in mental health settings. Kaitlyn is currently working as a Music Therapist in long-term care across the greater Toronto area. She enjoys working with older adults; listening to their stories, acknowledging their wisdom, and witnessing their expertise while encouraging creativity and new experiences through music.*

**A Cross-cultural Investigation of Neurologic Music Therapy (NMT) Interventions on Cognitive Improvement in Patients with mild-to-moderate Alzheimer's Disease and Mild Cognitive Impairment (MCI): A Prospective Study**

Bing Li, MME<sup>1</sup>; Michael Thaut, PhD<sup>1</sup>

The positive effect of music therapy for patients with dementia has been frequently documented in the clinical research literature, including areas of cognitive function, daily living skills, and behavioral and psychological symptoms. Laboratory experiments also suggest music-enhanced cognitive changes, particularly for memory. However, from a research perspective, several systematic reviews with meta-analysis reported low-quality evidence on the cognitive improvement. From current clinical studies, some common limitations can be identified, including: 1) a lack of randomization process and control groups; 2) small sample sizes; 3) minimal or no description of the intervention protocol; 4) a lack of theoretical foundation and the process of protocol development; and 5) interventions may not be led by certified music



therapists. Therefore, to better understand the effectiveness of music therapy, more randomized control studies with replicable protocol are needed.

The perspective RCT study aims at investigating the effectiveness of Neurologic Music Therapy (NMT) interventions on cognitive improvement for patients with mild-to-moderate Alzheimer's disease (AD) and Mild Cognitive Impairment (MCI). The study will be conducted in different cultural contexts, namely Canada and (mainland) China. Participants will be randomly assigned to four groups: 1) cognition-emphasized NMT interventions; 2) sensorimotor-emphasized NMT interventions; 3) receptive music listening; and 4) usual care. Outcomes will be measured by Montreal Cognitive Assessment (MoCA), Digit Span Test (forward and backward), and Neuropsychiatric Inventory (NPI). This poster focuses on presenting the process of developing intervention protocols under the NMT framework, and how research findings from neuroscience are used to guide the protocol development.

*<sup>1</sup>Music and Health Research Collaboratory, University of Toronto*

**A Study Protocol for a Systematic Literature Review: A Comparative Analysis of Biomarkers as Diagnostic Tools for Psychological Stress in Music-Based and Music Therapy Interventions**

Melanie M. Wong<sup>1</sup>, Talha Tahir<sup>2</sup>, Michael M. Wong<sup>3</sup>,  
Annilee Baron<sup>4</sup>, Rachael Finnerty<sup>4-5</sup>

**Introduction:** Psychological stress is a significant public health concern as it is associated with various comorbidities and long-term health implications. Music-related interventions have become increasingly popular therapies of choice in alleviating psychological stress and improving one's physical and mental wellbeing. This protocol outlines our process for conducting a systematic review to identify all neuroendocrine biomarkers used to evaluate psychological stress in music and music therapy-based interventions.

**Methods and Analysis:** A systematic literature review will be conducted in accordance with the PRISMA guidelines for reporting. Searches will be performed within the PubMed, MEDLINE and Web of Science databases to identify all randomized control trials assessing psychological stress in participants engaging in music and music therapy-based interventions. Criteria for search methods and article eligibility were determined *a priori*. Articles that meet all eligibility criteria after full-text screening will undergo risk of bias assessment using the ROBINS-I tool and quality assessment following the GRADE guidelines.

**Discussion and Registration:** This protocol has been submitted for registration in the PROSPERO database. The results are intended to improve our understanding of the use of biomarkers as diagnostic tools for psychological stress in music-related interventions, such as music therapy, as well as determine the most appropriate biomarker for analyzing the stress-response.

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<sup>4</sup>Music Therapy Academy, Hamilton, Ontario, Canada. <sup>5</sup>Faculty of Humanities, McMaster University, Hamilton, Ontario, Canada.

**Biography:** *Melanie Wong is a fourth-year undergraduate student in the Health Sciences program at McMaster University. She has a passion for music and its applications in both recreational and clinical settings. In her free time, she enjoys making mandala ink drawings, celebrating Toronto Raptors victories, and spending time with the people she loves.*

### **Impact of Music Therapy on Cognition and Mood in Dementia**

Divya Prasad, B.Arts. Sc, MSc in Neuroscience (candidate)

Rachael Finnerty, RP, MTA, MMT, MA

Background: Dementia is a syndrome that leads to the deterioration of cognitive abilities and affects behaviour (World Health Organization, 2019). It is estimated that by 2050, 152 million people will be affected by dementia. While there is no known cure, music therapy (MT) has recently been suggested as a potential intervention for dementia. We investigated the impact of MT on the cognitive abilities and mood of persons with dementia (PWD).

Method: This research study utilized a crossover randomized controlled trial design. Eight PWD (all 60+ years) participated and were assessed at baseline on cognitive ability, using the Mini Mental State Exam (MMSE), and mood, using the Positive and Negative Affect Schedule (PANAS). Participants were then randomly assigned to and took part in a MT intervention or a “friendly visit” (FV) control session. After, participants were re-assessed using the MMSE and PANAS. The next week, participants took part in the opposite group session (either MT or FV) and the same procedure was utilized.

Results: Comparisons between pre- and post- MMSE scores were not significant in either session (MT -  $p = 0.617$ , FV-  $p = 0.423$ ). Similarly, comparisons between pre- and post- PANAS scores in the FV session were not significant ( $p=0.481$ ). Changes in the PANAS scores pre- and post- MT intervention were significant ( $p=0.007$ ).

Implications: Results suggest that MT may be effective in improving the mood of PWD. Further investigation is necessary in order to validate our findings and determine the effectiveness of using MT as an intervention for dementia.

**Biography:** *Divya Prasad is a first year MSc student in the neuroscience graduate program at McMaster University. She is working under the supervision of Dr. Benicio Frey at St. Joseph's Healthcare, studying women's mental health throughout pregnancy and postpartum. Divya recently graduated with a Bachelor of Arts and Sciences, completing her thesis project under the supervision of Professor Rachael Finnerty. Through the study, the impact of music therapy on the cognitive abilities and mood of persons with dementia was investigated. She is looking forward to sharing the findings and learning more about the incredible research happening in the field of music therapy.*