Music Therapy in New Jersey

Acquired Brain Injury and Rehabilitation

A variety of events such as accidents, stroke, neurological disorders or injuries may cause an acquired brain injury. There are several music therapy programs designed for active military members and in VA settings, where many veterans suffer from traumatic brain injury (TBI), music therapy is provided. With TBI there are many areas that may need to be addressed, such as motor skill impairment, cognitive impairment, memory impairment, sequencing and planning difficulties, visual scanning impairment, speech apraxia (inability to create the sounds to form words), gait impairment, dysarthria (respiratory/phonation restrictions), inability to maintain attention, loss of emotional coping skills, and socialization impairment. Individuals experiencing TBI may have needs in combinations of these areas.

Music therapy can utilize its unique approach to address:

-individualized goals tailored to what is beneficial for each person;
-needs in more than one area at the same time;
-individualized goals in both group and individual sessions;
-different levels of need for the individual at any given time;
-the need for socialization opportunities;
-cognitive functioning impairment;
-facilitation of and motivation for physical rehabilitation;
-recovery of speech and communication skills;
-emotional well-being and self-worth;
-PTSD and depression;
-all needs in the least restrictive environment; and
-need for skills to maintain independence to the greatest extent possible.

How do music therapists use music to achieve these benefits?

-evoking all the senses through music in a multi-modal approach;
-aiding communication both verbal and non-verbal;
-activating response or alternatively providing relaxation;
-stimulating cognitive functioning in both hemispheres to remediate speech/language skills;
-stimulating memory through familiar songs;
-enabling motor function to achieve coordinated movement, such as steady gait;

-gaining personal insights, coping and problem solving strategies through songwriting or lyric analysis;
-providing a means for self-expression and/or self-advocacy through songwriting and improvisation;
-facilitating self-expression through songs that have special meaning;
-stabilizing emotions;
-facilitating interactive music;
-motivating participation and interactions;
-providing a medium to connect and interact with family and others socially; and,
-adapting to whichever methodology is best for the client, thus truly making music therapy an encompassing approach.

What is the research behind using music therapy?

Researchers and several organizations perform meta, or combined studies comparison reviews involving music therapy research in order to evaluate the efficacy of music therapy. The results of high-quality systematic reviews and meta-analyses are considered to be more definitive than individual studies in determining efficacy. Cochrane Reviews are considered by many to be the “Gold Standard”, or the authoritative word in the medical conversation on a particular topic. Scoping reviews use the same type of methodology as systematic reviews; but are exploratory in nature and have a broad scope in exploring the research question. They may encompass all types of literature, not just research studies.

2021 Systematic Review

A systematic review (Machado Sotomayor et al., 2021) of 58 studies published from 2015- 2020 on the effects of music therapy with patients who have Parkinson's disease states:

> The results display a great diversity of evidence, confirming positive effects on various spheres. All mentioned patients with Parkinson's disease had experienced different music therapy programs. Some studies focused on the motor component, which can be addressed through listening, body rhythm, and rhythmic auditory stimulation. Other studies confirm effects on communication, swallowing, breathing, and the emotional aspect through programs that focus on singing, either individually or in groups, in order to improve the quality of life of people with PD. It was concluded that music therapy programs can achieve improvements in various areas of patients with Parkinson's.

2021 Systematic Review and Meta-Analysis

A systematic review and meta-analysis (Mishra et al., 2021) of 6 studies for role of music therapy in traumatic brain injury led to authors' conclusions:

> Pooled results from 6 studies demonstrated statistically significant improvement in the stride length and executive function outcome in patients with TBI after music therapy rehabilitation. The improvement effect on cadence and gait velocity was not statistically significant and no significant effect of music therapy was found on memory in these patients.

2021 Systematic Review

A systematic review (Bower et al., 2021) of 46 studies that utilized EEG, MEG, fMRI, and fNIRS scanning techniques in children aged 0-18 years led the authors to conclude:

> While the ability to process fundamental musical elements is present from birth, infants and children process music more slowly and utilize different cortical areas compared to adults. Brain injury in childhood occurs in a period of rapid development and the ability to process music following brain injury will likely depend on pre-morbid musical processing. Further, a significant brain injury may disrupt the developmental trajectory of complex music processing. However, complex music processing may emerge earlier than comparative language processing, and occur throughout a more global circuitry.

2021 Systematic Review

In a systematic review (Daniel et al., 2021) of 8 studies examining the effects of music-supported therapy (MST) on recovery for stroke patients, the authors concluded:

> MST has the ability to create significant improvement in the lives of recovering stroke patients. The use of MST can yield positive outcomes and sustained recovery for stroke patients and is clinically feasible. Rhythmic stimulation can synchronize movement and increase the flexion of the joints needed to recover. Daily listening to music improves the emotional state of the patient, enabling them to feel an increased motivation to recover and a more positive quality of life.
>
> MST and its diverse methods of implementation are noninvasive, relatively inexpensive, and effective interventions in improving stroke patient recovery and overall function. It is recommended that these clinical treatments be further studied in larger, more diverse patient populations and considered in routine clinical practice and treatment. MST can confer significant improvements in gait function and ambulation in stroke patients. Given its clinical feasibility, MST - including RAS, R-MT, and MMF - is worth continuing to study as a valuable component in post-stroke recovery and rehabilitation.

2021 Systematic Review

In a 2021 systematic review (Lopes and Keppers, 2021) of 10 music-based therapy (MBT) studies involving 429 individuals with multiple sclerosis, the authors concluded:

> MBT is a safe and effective approach for clinical rehabilitation of MS patients that leads to positive results regarding motor function. However, regarding mental fatigability and memory, the data were conflicting and the evidence was unclear. Although generalization of these findings may be restricted by the small sample size, this systematic review showed that MBT can be indicated for improving motor factors, even in a neurodegenerative disease like MS. It is essential to better define these approaches using elements of music that were cited as strategies in this current review. It is relevant to identify more standardized methods to apply in each clinical context. The role of music needs to be better understood and included in a multidisciplinary approach for different MBT settings. This can help to further explain the role of music in relation to brain neuroplasticity changes and thus confirm the strong relevance of MBT in clinical practice.

2019 Scientific Conference Presentation of a Systematic Review

In a systematic review with meta-analysis (Šuriņa et al., 2019) of music therapy for stroke patients presented at the International Scientific Conference of the Society, Integration, Education, the authors found that:

> ....gait exercises, combined with rhythmic auditory stimulation, provide statistically significant improvement, compared with gait exercises alone. Concerning the use of rhythmic auditory stimulation and other music therapy interventions for arm function rehabilitation, a statistically significant improvement was not detected.

2017 Cochrane Review

From a Cochrane review (Magee et al., 2017) of 29 trials that tested the effects of music interventions on walking, moving, communicating, thinking, emotions, pain, and well-being, it was concluded:

> Music interventions may be beneficial for gait, the timing of upper extremity function, communication outcomes, and quality of life after stroke. These results are encouraging, but more high-quality randomised controlled trials are needed on all outcomes before recommendations can be made for clinical practice.

2014 Summary of Systematic Reviews

In a National Center for Biotechnology (NCBI) - National Institutes of Health (NIH) summary of systematic reviews (Kamioka et al., 2014) to determine the effectiveness of music therapy (MT) including mental disorders, the authors concluded:

> This comprehensive summary of SRs demonstrates that MT treatment improved the following: global and social functioning in schizophrenia and/or serious mental disorders, gait and related activities in Parkinson's disease, depressive symptoms, and sleep quality. MT may have the potential for improving other diseases, but there is not enough evidence at present. Most importantly, a specific adverse effect or harmful phenomenon did not occur in any of the studies, and MT was well tolerated by almost all patients.

2012 Systematic Review

In a systematic review (Hurkmans et al., 2012) wrote:

> The purpose of this review was to assess the effects of musical elements in the treatment of neurological language and speech disorders. A systematic search of the literature yielded 15 studies that met inclusion criteria.
>
> Measurable improvement was reported in studies where musical components were used in the treatment of neurological language and speech disorders. However, the methodological quality of studies was rated low. Therefore no conclusions can yet be drawn with regard to the effect of the use of musical elements in the treatment of individuals with acquired neurological disorders. Mechanisms of recovery remain unclear: two of the three studies that examined mechanisms of recovery via neuroimaging techniques supported the role of the right hemisphere, but reports are contradictory and exact mechanisms of recovery remain indefinable. Shortcomings in the current research can be overcome by following standards as outlined by the discussion section in this article.

1996 Scoping Review

In a scoping review (Knox & Jutai, 1996) of the available information on the use of music therapy interventions to promote health and improve functioning in military service members, the authors concluded:

Music has long been used with the military to enhance quality of life, and today music therapy interventions are used to promote health, enhance quality of life, and improve functioning in military personnel. Evidence on the use of music interventions with military service members is still emerging, but results from this scoping review suggest that music therapy may be a viable and effective option for treating service members with PTSD, TBI, and other conditions. The anecdotal reports, white papers/ briefs, case studies, historical reviews, clinical program descriptions, and research studies included in this review suggest that music therapy interventions are well received by both active duty and veteran service members, and that active music therapy interventions like drumming are regularly used to increase emotional expression and/or regulation, increase socialization, and decrease loneliness. Music therapy services are offered in both group and individual format, and other objectives addressed in music therapy include improvements in speech, motor, and cognitive functioning, decreasing discomfort, improving PTSD symptoms, and reducing anxiety and depression. Publications related to music therapy and military personnel have increased since 2015, but research is still inconsistent. Several gaps have been identified, including the need for clinical research, the need for specific intervention research, and the need to explore military service members' perspectives on the impact of music therapy interventions. Music therapy with military populations appears promising, but more is needed to ensure that the complex needs of military personnel are adequately met.

How Does Music Therapy Compare to Other Approaches?

There are many aspects of functioning that can be affected when a person has impairments within the brain, whether these impairments are caused by disease, accident or medical event. The degree of disruption and the aspects of functioning are individualized. Whether these are cognitive, behavioral, motor, or speech and language, music therapy may be used. Other interventions may focus on a specific need while music therapy can address multiple needs at the same time. Further, music therapy has been found to be cost effective for patients with traumatic brain injury (TBI) in a coma to improve physiological parameters of systolic & diastolic blood pressure, heart rate and respiratory rate (Froulan et al., 2020), and reducing anxiety in patients with stroke (Dolgari et al., 2011). Siponkoski et al. (2020), state that “our study suggests that neurological music therapy is a very promising, unique, and highly applicable tool in TBI neurorehabilitation, with power to enhance high-level cognitive functions and induce fine-grained neuroplasticity changes in the recovering brain.”

Current music therapy program models for active duty military address cognition and memory, motor control and response, speech and language, headaches (pain), behavioral health (emotional regulation and expression), PTSD, hypervigilance, sleep disturbance, and social isolation (Bronson et al., 2018). Music therapy is client centered and not tied to one method, so music therapists can use various methods to address individual needs while other professionals may be confined to a specific theoretical approach.

Music mnemonics may aid in both achieving memorization goals as well as exercising memory processes for general cognitive functioning (Knott, 2017), and the use of rhythm and melody can stimulate the brain, activating neurons and creating new pathways/connections. Singing in choirs led by a music therapist is used to help patients with stroke regain vocabulary and articulation, people with Parkinson's disease improve speech and voice skills (Monroe et al., 2020), and people with aphasia regain functional communication (Zumbansen et al., 2017). A secondary benefit to these types of social experiences is improved mood and quality of life.

Music therapy can enhance the effects of traditional treatments of patients with stroke: when patients using standard treatments of drug, rehabilitation, and routine walking training add music therapy, they can achieve significant improvements in gait, walking ability, lower limb motor function, balance ability and treatment satisfaction (Wang et al., 2021); Co-treatments of music therapy and physical therapy can also improve the rate and recovery of gross motor functions of patients with stroke (Yakupov et al., 2019); and physical and occupational therapies plus music therapy can result in decreased anxiety, depression and gains in strength compared to just physical and occupational therapies treatments (Raglio et al., 2017).

What do people say about music therapy?

Dr. Oliver Sacks, at the Hearing before the Senate Special Committee on Aging entitled, "Forever Young: Music and Aging," stated: "The power of music is very remarkable.... One sees Parkinsonian patients unable to walk, but able to dance perfectly well or patients almost unable to talk, who are able to sing perfectly well... I think that music therapy and music therapists are crucial and indispensable in institutions for elderly people and among neurologically disabled patients." (AMTA)

Patients in neurological rehabilitation for stroke and receiving standard care plus music therapy (Poćwierz-Marciniak & Bidzan, 2017) self-reported a higher quality of life for the aspects of:general health, vitality, mental health, communication, emotional condition, and alertness compared to a similar group who only received neurological rehabilitation with standard care.

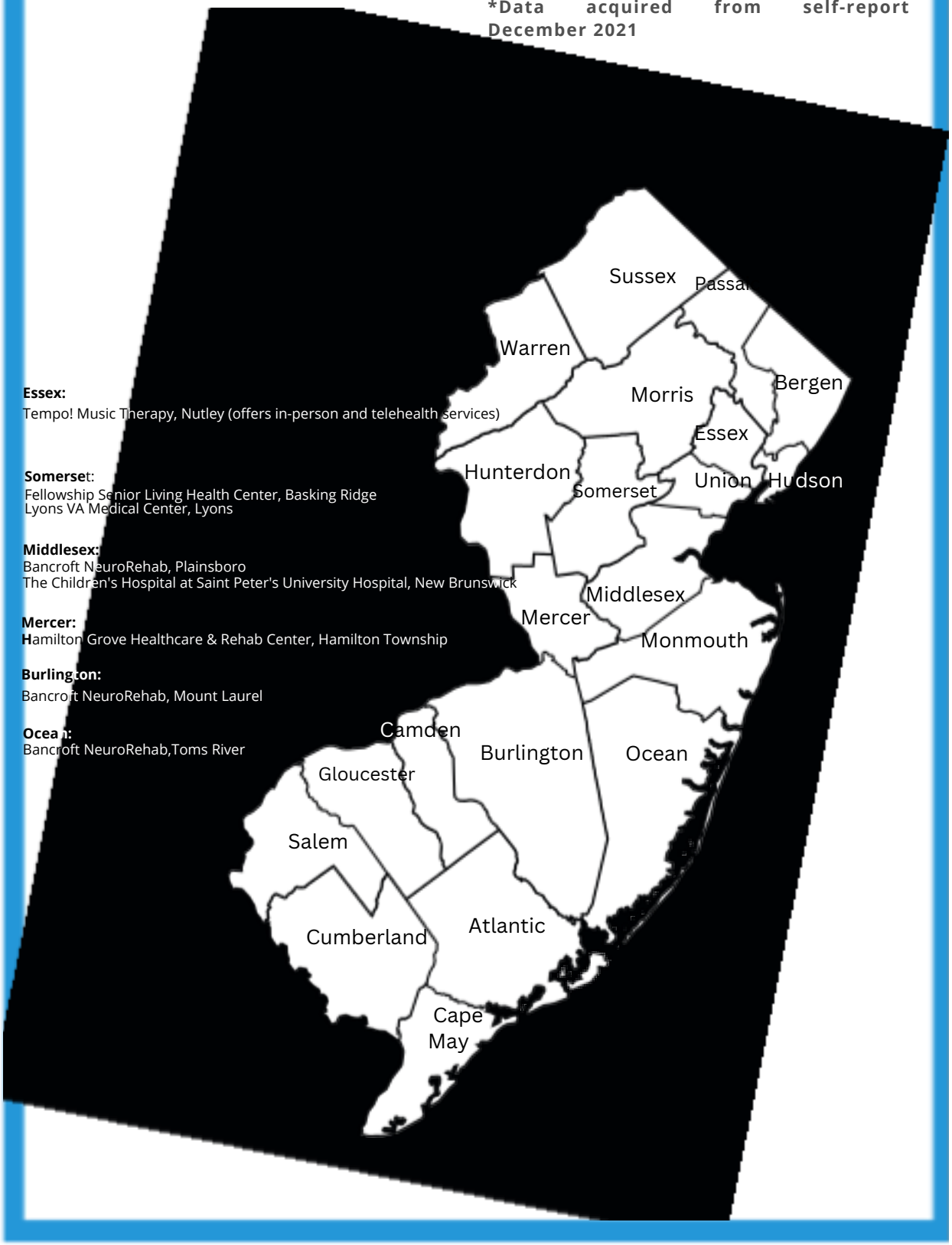
In a study of people with chronic stroke conditions or Parkinson's disease (Rosin et al., 2015), after 20 weeks of functional oriented music therapy (focus on body functions), both groups self-reported a better social life, increased concentration and improved self-esteem. In addition, the chronic stroke participants specifically reported a significant increase in ability to read, to sleep, to concentrate and had a better perception of time and better memory. The participants with Parkinson's disease reported beyond the generalized earlier comments improved collaboration skills, stability, hand-functions, and auditory skills, awareness of body positions, trunk rotations, respiratory coordination and complete body coordination improvement. After a 10 week break, these benefits persisted and self-esteem continued to improve with added abilities to sort noise, to concentrate, better perception of time and increased endurance.

Perceptions of people with stroke and Parkinson's disease who participated in a choral singing music therapy group (Fogg-Rogers et al., 2016), were that the choral singing was an enjoyable activity that helped them improve communication skills, reduce their social isolation and have an overall effect of improved mood.

Ray Khan, a martial arts teacher, electronic sound artist, former public school teacher, and personal trainer suffered traumatic brain injury (TBI). "Ray Khan encourages people with TBI to get involved in music therapy as one of the constructive ways to cope with symptoms." (Martial Arts Teacher, 2021)

Finding a Music Therapist In NJ

Institutions, facilities and businesses that offer music therapy services
***Data acquired from self-report December 2021**



Essex:
Tempo! Music Therapy, Nutley (offers in-person and telehealth services)

Somerset:
Fellowship Senior Living Health Center, Basking Ridge
Lyons VA Medical Center, Lyons

Middlesex:
Bancroft NeuroRehab, Plainsboro
The Children's Hospital at Saint Peter's University Hospital, New Brunswick

Mercer:
Hamilton Grove Healthcare & Rehab Center, Hamilton Township

Burlington:
Bancroft NeuroRehab, Mount Laurel

Ocean:
Bancroft NeuroRehab,Toms River

Finding a Music Therapist In NJ

Find a private practice music therapist on the NJ Association for Music Therapy (NJAMT)

Check a music therapist's MT-BC status on the CBMT website.
Note: you will need the music therapist's full name.

Find a music therapist AMTA on the national website.

In New Jersey music therapy services may be funded through:

Individuals with Disabilities Education Act (IDEA) Part B & Part C

State, foundation or community grants

Medicaid waiver
Although New Jersey does not offer Medicaid waivers for music therapy services, New Jersey has utilized state and county agency funds and population specific waivers (i.e., autism, developmental disabilities) to cover the provision of music therapy interventions in a variety of settings.

Division of Developmental Disabilities (Health and Human Services) Requires pre-approval.
As an adult, if you receive music therapy outside the home and you qualify for Medicaid, you may qualify to have the music therapist paid directly from the Division of Developmental Disabilities under the Supports Program.
For children under age 21, DDD has proposed a pilot program to provide music therapy as an adjunct service.

Select private Insurance (with pre-approval)
Companies like Blue Cross Blue Shield, United Healthcare, Cigna, and Aetna have all paid for music therapy services at some time. Success has occurred on a case-by- case basis when the therapist implements steps within the reimbursement process and receives pre-approval for music therapy services.

Private Payment

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