Music Therapy and Music Medicine for Children and Adolescents

Olivia Swedberg Yinger, PhD, MT-BC*, Lori Gooding, PhD, MT-BC

KEYWORDS

• Music therapy • Music medicine • Child and adolescent psychiatry • Mental health • Research

KEY POINTS

- Neuroimaging research indicates that listening to preferred music activates reward circuitry in the brain and active musical participation engages more areas of the brain than passive listening.
- Music therapy is an established health care profession in which music is used within a therapeutic relationship with a music therapist to accomplish nonmusic goals.
- Emerging research indicates probable effectiveness of specific approaches to music therapy with children and adolescent mental health consumers; however, further research is necessary.

INTRODUCTION

Defining Music Therapy and Music Medicine

The American Music Therapy Association (AMTA) defines music therapy as: "…the clinical and evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program."[1] Music therapists use music within a therapeutic relationship to attend to individuals' physical, emotional, cognitive, and social needs. Although music therapists work with various populations, including individuals of all ages with medical/surgical needs or intellectual disabilities, more music therapists work with persons who have behavioral/emotional disorders than any other single population.[2]

Funding Sources: Johnson & Johnson/Society for the Arts in HealthCare (O.S. Yinger); National Institute of Aging (L. Gooding).
Conflict of Interest: None.
University of Kentucky School of Music, College of Fine Arts, 105 Fine Arts, Lexington, KY 40506-0022, USA
* Corresponding author.
E-mail address: olivia.yinger@uky.edu

Child Adolesc Psychiatric Clin N Am 23 (2014) 535–553
http://dx.doi.org/10.1016/j.chc.2013.03.003 **childpsych.theclinics.com**
1056-4993/14/$ – see front matter Published by Elsevier Inc.

Music therapists must complete either a 4-year undergraduate program or a 2-year graduate equivalency program in music therapy at an AMTA-approved college or university. Music therapy degree programs include course work in musical foundations, clinical foundations, and music therapy foundations and principles, as specified in the AMTA Professional Competencies. In addition to course work, music therapy degree programs include 1200 hours of clinical training, culminating in a supervised internship, which typically lasts for 6 months. After completing an AMTA-approved degree program, prospective music therapists are eligible to take the national board certification examination to earn the credential Music Therapist-Board Certified (MT-BC). The MT-BC credential is granted by the Certification Board for Music Therapists (CBMT), a separate, accredited organization.[3] After becoming board certified, training in advanced music therapy competencies is offered through mandatory continuing education courses, with the option for training at the master's and doctorate level. Music medicine, which constitutes the bulk of the literature on the use of music to accomplish nonmusic objectives, is defined as passive listening to prerecorded music provided by medical personnel.[4,5] In music medicine treatment, listening interventions are often administered via headphones, and patients may or may not be involved in selecting the music.[5] Although music-based interventions are used in both music medicine and music therapy, it is important to understand the difference between the 2, because of variations in the level of training in musical foundations and their therapeutic applications, with music therapists receiving specialized training in these domains.[5] Although training and certification are required to practice music therapy, no such specialized training and certification exists for the practice of music medicine.

Mechanism of Therapeutic Action: Music and the Brain

To understand the reasons behind the effectiveness of music in augmenting treatment of children and adolescents receiving psychiatric treatment, it is important to first understand the effects of music on the brain. Recent research on the effects of music on cognition, emotional processing, anxiety, and stress has shed light on how music therapy can enhance mental health treatment. There is no single center for musical processing in the brain. Music listening engages multiple areas of the brain, both subcortical (including the medial geniculate body in the thalamus and the amygdala) and cortical (such as the left and right primary auditory cortex). Musical participation also engages the cerebellum, basal ganglia, and cortical motor area.[6,7]

The fact that active musical participation engages more areas of the brain than passive music listening may explain in part why numerous studies have shown music therapy to be more effective than music medicine at augmenting treatment of neuropsychiatric disorders.[7] It seems that active musical participation or engagement with the therapist are integral in the success of music therapy, in addition to the music itself. The effectiveness of music therapy is in part caused by the effects of music on the brain, and in part by the interaction between the client and the music therapist.

Stefan Koelsch[8] provided an overview of ways in which music modulates attention, emotion, cognition, behavior, and communication. Readers wishing to learn in greater detail about the effects of music, and specifically music therapy, on the brain are referred to the works of Koelsch, Lin, and Taylor, among others.[6–8]

Neuroimaging techniques are helping researchers understand ways in which music listening and participation affect neural plasticity.[6–8] Recent neuroimaging studies have shed light on the activation of the reward circuit in the brain and the role that dopamine plays in musical response. In a study by Blood and Zatorre,[9] in which participants listened to self-selected music that gave them chills while undergoing positron emission tomography (PET) scans, increases in cerebral blood flow were