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### Music Therapy as a Support Model in Massachusetts Special Education:

#### **A Literature Review**

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GEXTH 7017: Thesis Seminar

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April 16, 2024

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**Abstract:** Mental health directly impacts student propensity for making academic progress in the public education system. For children with disabilities, it is especially vital to develop and implement techniques within special education that deliver personally tailored benefits. According to the United States Department of Education, music therapy offers highly effective support to a wide range of students within the school setting so that they may achieve academic success and be supported in their social/emotional development (U.S Department of Education, 2011; AMTA, 2021). In examining the multifaceted ways that music therapy can offer support within the structure of education and mental health, this thesis (I) reviews current literature surrounding the efficacy of music therapy to address common issues in special education and (II) advocates for increasing the service of board certified music therapists as a routinely used resource within the Massachusetts special education system.

*Keywords:* music therapy, education, individuals with disabilities education act, attention deficit hyper activity disorder, free appropriate public education, children

The author identifies as a white woman and mother from New England of mixed *European ancestry.* 

#### Music Therapy as a Support Model in Massachusetts Special Education:

#### **A Literature Review**

Students with disabilities confront significant challenges in accessing the education system (Rhim et al., 2024). In 2023, the Massachusetts Department of Elementary and Secondary Education (DESE) was called into question by the United States federal government, which launched a formal review investigating whether the agency has a system in place to adequately ensure compliance with special education laws (Camacho, 2023). The Individuals with Disabilities Education Act (IDEA) and Massachusetts special education laws, protect vulnerable students by requiring the provision of a free appropriate public education (FAPE) to students with identified disabilities (United States Department of Education, 2011). To accommodate these students, Massachusetts schools commonly employ licensed or certified special education service providers such as occupational therapists, speech and language therapists and school counselors (Massachusetts Department of Elementary and Secondary Education, 2013).

Employing certified therapists within the structure of education provides Massachusetts schools with supportive interventions rooted in research . Expressive therapy modalities such as music therapy can be brought into schools as a result of licensure, offering additional resources to students in need. Research (Austin, 2008; Bruscia, 2012; Jautre, 202; Sholeh et al., 2021; Frydman et al., 2022; Jung, 2023) shows music therapy to be effective in addressing a broad range of physical and mental health issues that a broad range of students (with and without disabilities) face when tasked with progressing in the Massachusetts education system. Students who benefit from the support of occupational therapists can also benefit from music therapy interventions aimed at improving strength and range of motion (Jautre, 2021). Similarly, music

therapy targets speech and language areas in supporting functional communication and speech articulation (Bruscia, 2012). From a mental health perspective, it has been well documented that music therapy supports social and emotional health in children (Austin, 2008; Bowlby, 1952; Frydman et al., 2022; Sholeh et al., 2021); and theorists since the mid-20<sup>th</sup> century have agreed that music is inseparable from human emotion and experience (Jung, 1958; Plato, 2007; Stamou, 2022;).

In examining the multifaceted ways that music therapy can offer support within the structure of education and mental health, this thesis reviews current literature surrounding the efficacy of music therapy to address common issues in special education and advocates for increasing the service of board certified music therapists as a routinely used resource within the Massachusetts special education system. In the pages that follow, several of the challenges facing special education will be addressed by way of music therapy and its ability to: (a) provide students with the therapeutic accommodations necessary for satisfying Individualized Education Programs (IEP) and achieving a free appropriate public education (FAPE), (b) support school counselors in providing adequate mental health services, and (c) support educators by decreasing the frequency of behavioral/emotional disruptions while increasing student engagement.

#### **Literature Review**

#### **Music Therapy Supports Student Individualized Education Programs**

Individualized Education Programs (IEP) are designed but not always implemented (Blackwell et al., 2019). More than 177,000 students in Massachusetts have an IEP; a number that reflects 19% of the state's student enrolment (Jung, 2023). An IEP is a tool required by the

Individuals with Disabilities Education Act (IDEA) and Massachusetts special education laws, which serves as a guide for providing free appropriate public education (FAPE) to students with identified disabilities.

Because of IDEA, children who have been identified with disabilities are able to remain in the general education setting that their local schools provide, rather than be separated into special education schools or facilities (U.S. Department of Education, 2022). Research suggests that students who are granted accommodations within their neighborhood schools contribute to increased rates of high school graduation and post-secondary school enrollment. Furthermore, these students have a better chance of becoming candidates to receive future employment opportunities available to students with disabilities (U.S Department of Education, 2022).

Under the IDEA, music therapy has been recognized as an effective service modality in special education settings (Coleman et al.; 2003, IDEA, 1997). Moreover, integrated creative arts therapy programming that uses musical intervention within IEP design has resulted in significant improvements in student outcomes, such as self-regulation, engagement, behavioral organization, and purposeful communication (Frydman et al., 2022).

Music therapy intervention can offer support to students struggling with emotional and behavioral disorders, as well as students diagnosed with autism spectrum disorder (ASD), cognitive delays (CD), attention deficit disorder (ADHD), learning disabilities, and other physical and health impairments (POHI) (Sze, 2004). Sze's study also demonstrated the way educators can learn and apply evidence based music therapy strategies to support (a) speech and language impairments, (b) orthopedics and health impairments, (c) cognitive disabilities, (d) attention deficit/hyperactivity disorders and learning disabilities, (e) gifted and talented, and (f) emotional and behavioral disorders in the classroom. Notably, the U.S Department of Education (2022) encourages the application of evidence-based music therapy research within the structure of special education, as a way of advancing the efficacy of educational intervention, and the consequential path to academic success (U.S. Department of Education, 2022). By supporting students in their development of social and language skills, as well as strengthening cognitive, learning, perceptual, motor, and emotional development, music therapy is able to target a wide range of challenges that students and IEP teams face when structuring an educational program (Sze, 2004). Because an IEP acts as a roadmap for both educators and students; effectively addressing a child's unique needs so that they can make progress within the education system is imperative (Yell et al., 2020).

In Senkal et al.'s 2021 study, the authors described the efficacy of Orff Music Therapy in treating children with intellectual disabilities (ID). Auditory processing skills are effectively addressed by the Orff method and since auditory processing disorder (APD) has been related to the same kind of neurodevelopmental disorders as ID, Orff Music Therapy has strong therapeutic potential to serve children with those challenges (Senkal et al., 2021).

Orff Music Therapy is a developmental method of music therapy and was developed by Gertrude Orff (Orff, 1980). The key principles of the Orff method revolve around supporting musical play, improvisation, instrumentation, and multi-sensory music-making. The structure promotes exploration, and the development of social skills as children interact with their peers within the safety of the musical environment, planting the seed for meaningful relationship building (Senkal et al., 2021). Additionally, a child's full capacity of senses are engaged within the music making, for example, playing a drum so that marbles fly off of it, thus hearing music and seeing the effect of the rhythm on another object. This element of playing and engaging the senses serves to elicit interactions from the child even if they are not quite able or willing to fully participate in the music making experience (Voigt, 2003). The Orff method lends itself to be inclusive to children with developmental disabilities, inviting them to become active participants in the music making (Senkal et al., 2021).

Orff Music Therapy supports children with ID related to autism spectrum condition (ASC), psychiatric diseases, as well as developmental and behavioral disorders. Furthermore, there are statistically significant results when using music therapy interventions in each of these cases (Senkal et al., 2021).

Auditory processing skills play an integral role in a child diagnosed with ID's ability to cope with the challenges associated with their disability. If a child who has ID can learn how to actively listen, they can then go on to develop the communication skills necessary for forming meaningful relationships and learning to navigate daily interactions with others. Children with ID do not have the persistent limitations that go along with APD, thus their auditory skills have the potential to be strengthened. Through the collection of data from 58 children between the ages of 11–13 who had been diagnosed with ID and were enrolled in a special education and rehabilitation center in Adana, Turkey between 2016-2019, researchers found a significant improvement in the musical assessment as well as a significant increase in the sensitivity of Linguistic Organization (LO) scores. Because music and language function in a similar manner, and phonological awareness is linked to musical understanding, the ability to practice phonological codes within the context of music therapy provides children with an opportunity to develop skills essential for learning to read; an ability that is considered to be more important than intelligence, language skills and phonemic awareness (Senkal et al., 2021).

#### Music Therapy for Attention Deficit Disorder

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ADHD is categorized as "a neurodevelopmental disorder defined by impairing levels of inattention, disorganization, and/or hyperactivity-impulsivity (American Psychiatric Association, 2016). ADHD negatively impacts an individual's daily functioning, specifically pertaining to academic, occupational and social functions (Sholeh et al., 2021). According to the National Survey of Children's Health (CAHMI, 2022), 12.8% of children in Massachusetts are currently diagnosed with ADHD, a number that is slightly above the 10.5% national average. Because ADHD is one of the most prevalent childhood psychiatric disorders (NSCH, 2022; Sholeh et al., 2021), along with anxiety (9.4%), behavior problems (8.9%) and depression (4.4%) (CDC, 2023), implementing effective interventions, within the structure of a school day, that target the challenges associated with such conditions is imperative (Kolbert et al., 2017).

In Sholeh et al.'s (2021) study of music therapy as a method of enhancing the self-esteem of students diagnosed with attention deficit hyperactivity disorder (ADHD), the authors utilized qualitative case studies to collect data from students with ADHD in elementary education. Research found that primary education played a vital role in a student's development of skills necessary for making educational progress. These cognitive, affirmative, and psychomotor skills rely upon a student's ability to learn and engage in the classroom, an environment that can be a challenge for children struggling with ADHD (Sholeh et al., 2021)

Because attention deficit hyperactivity disorder symptoms disrupt a student's ability to function in a classroom environment, these students are often at risk for academic failure, rejection from peers, and a loss of self-esteem (Sholeh et al., 2021). Self-esteem is an important component of a child's personality, impacting their daily life, thus playing a significant role in a child's ability to succeed in a classroom. A child with healthy self-esteem has a positive attitude towards learning, demonstrating confidence in their ability to comprehend lessons and navigate social situations, as well as an enthusiasm for approaching new challenges. Children with low self-esteem, however, demonstrate avoidant tendencies, opting out of classroom engagement for fear of feeling ashamed in front of their peers. These students have difficulty forming meaningful relationships and are at risk of falling behind academically (Sntamaria-Villar et al., 2021).

Music Therapy offers an effective method for improving the self-esteem of students diagnosed with ADHD, thus providing students with the social and emotional foundation needed to develop the skills necessary for gaining self-awareness, completing tasks, making decisions, controlling impulsivity, and developing a positive attitude towards learning. This is supported by Camilerri's 2007 study which described a group songwriting structure intended for use with at-risk children within the school setting (Camilerri, 2007) as well as the Pearce et al study investigating the act of singing and its relation to social bonding (Pearce et al., 2015).

In Camilerri's (2007) chapter of *Healing The Inner City Child: Creative arts therapies with at-risk youth* (Camilerri, 2007), the author described a method of songwriting, therapeutic in nature, that employed the process of interpersonal songwriting with personal expression. The structure offered children an opportunity to express themselves and culminated in an experience that promoted feelings of empowerment and a sense of accomplishment. The safety that the music therapy space provides allows students to become vulnerable and present, a respite from the often chaotic environment of an under-resourced inner city school. This sense of safety promotes the development of social skills that are necessary for success in their classrooms. This notion is supported by findings that show music therapy to be effective in lowering anxiety, stress and depression (Sholeh et al., 2021). Within the structure of group songwriting, social skills are addressed through the process of musical and cognitive analysis. Moreover, the structure prompted conversations surrounding difficult topics so that healing could take place (Camilerri, 2007).

While the songwriting process described in Callimerri's chapter focused on the development of social skills, Camilerri noted several other populations who can benefit from songwriting. Notably, children and adolescents who are abused and/or bereaved, students who are emotionally impaired, and students in special education, a category that reflects children challenged with a ride range of psychiatric diagnoses, including autism spectrum disorder (ASD) (CAHMI, 2022).

#### **Music Therapy for Autism Spectrum Disorder**

Autism spectrum disorder affects a child's ability to communicate and navigate social interactions (American Psychiatric Association, 2016). One of the foundational principles believed by most theorists of music therapy is that the ability to receptively or expressively engage in music is a basic component of the human condition (Alvin et al., 1991). This capacity for understanding music is an important notion in the treatment of children with disabilities, because the intrinsic musicality that children possess can survive neurological, cognitive, psychological and emotional challenges, while offering opportunity for progress in the face of obstacles (Birnbaum et al., 2023).

In Geretsegger et al.'s (2014) study, the authors illustrated how music therapy proved to be an effective intervention in providing musical experiences as a foundation for relationships to develop, thus supporting core challenges associated with ASD, such as communication and expression. The study, which included 165 participants, provided evidence that music therapy can address important challenges associated with ASD, exceeding 'placebo' and standard care in its efficacy pertaining to social interactions and therapy. Moreover, music therapy exceeded 'placebo' and standard care in secondary outcome areas such as social adaptation, joy, and quality of parent-child relationships.

The findings in this study demonstrated the capacity that music therapy has to address common challenges faced by students enrolled in the Massachusetts public education system (U.S. Department of Education, 2022). By applying musical intervention, a music therapist is able to directly target ASD related objectives such as verbal communication, initiating behavior, and social-emotional reciprocity (Geretsegger et al., 2014).

#### **Music Therapy Supports School Counselors: Targeting Student Mental Health Challenges**

Mentally healthy students have an increased likelihood of maintaining consistent school attendance, actively participating in academics and school activities, forming healthy and meaningful relationships with peers, and developing adaptive problem-solving skills and coping strategies. (AMTA, 2021; Armbruster, 1999; Bowlby, 1952; Burke Harris, 2018). Moreover, mental health services in a school environment result in a decrease in student behavioral incidents, emotional problems, disciplinary actions, and out-of-district special education referrals (Christian et al., 2018).

According to the Center for Disease Control (CDC, 2013), the early detection of mental health issues is crucial in supporting students in achieving school success, since a child's mental health directly impacts their academic and social/emotional development (Christian et al., 2018). The CDC (2013) reports that children ages 3–17 in the United States have been diagnosed with anxiety, depression, ADHD, behavioral or conduct problems, ASD, and other childhood mental disorders. Moreover, as of 2021, suicide (typically a result of mental illness in combination with substance abuse), was the second leading cause of death for United States youth between the ages of 10–24 (CDC, 2020) While the need for mental health services continues to increase in

school-age children (Christian et al., 2018), school counselors (SC) are increasingly failing to provide adequate mental health support to students in need. This failure to accommodate student mental health needs within the school environment often results in SC's referring students in need of specialized education to mental health professionals in the community, a resource families often do not follow through with attaining (Kolbert et al., 2017).

Among the most prevalent psychological conditions impacting students are major depressive disorder (MDD) and anxiety, afflicting a combined 13% of Massachusetts children and adolescents (CAHMI, 2022). Left untreated, these disorders can have detrimental consequences, threatening cognitive, social and emotional development and eventually, persisting into adulthood (Belski et al., 2022). Evidence suggested music therapy to be an effective intervention in improving the symptoms of depression and/or anxiety, especially desirable in its nonpharmacological nature.

In Belski et al.'s (2022) study of the effectiveness of music therapy in improving depression and anxiety symptoms among children and adolescents, the authors conducted a systematic review to address gaps in previous literature and thoroughly investigated if music therapy offers clinical support to children struggling with symptoms of marked depression and/or anxiety. Adapting from the Cochrane Systematic Review (Albers et al., 2017), the Belski et al. (2022) classified music therapy interventions into either receptive (non-verbally responding to music listening, i.e., dancing, writing, reflecting), active (i.e., song-writing, improvisation, recreation), or a combination of both methods (Belski et al., 2022). The intervention was compared with (a) no treatment or wait-list control; (b) treatment-as-usual (TAU) control; (c) psychological treatment control or attention-control condition; or (d) a disorder-specific psychological treatment.

Belski et al. (2022) reflected that there is evidence to suggest music therapy is effective in improving depression symptoms in children and adolescents. Music therapy interventions demonsted statistically significant improvement in depression symptoms in four out of the six trials, as well as show significant statistical improvement in symptoms of anxiety in one out of the two trials. The authors noted the literature in support of typical psychotherapy and pharmacotherapy interventions in the treatment of symptoms of anxiety and depression, and emphasized the challenges surrounding children and their family's access and adherence to psychotherapy, as well as the risk for adverse drug events being common, and impeding their effectiveness (Belski et al., 2022).

#### **Music Therapy Supports Regulation**

Creating effective interventions to support children and adolescents in their development of emotion regulation (ER) skills is imperative for maintaining classroom structure. ER can be defined as the specific processes involved in an individual's ability to cope with varying degrees of emotional arousal (Moore et al., 2015). In a study conducted by dos Santos et al. (2018), music therapy is presented as an underutilized tool for eliciting information from individuals who may not benefit from talk therapy alone, resulting in a more comprehensive collection of data, reflected in the complexity and reach that music can provide. The authors conducted their research at a school in Eersterust, South Africa– an under resourced institution in an area exhibiting high rates of crime, unemployment, drug addiction and gang violence. The six participants who were referred to the study had histories of aggression towards parents, peers, and teachers. The musical interventions carried out during the group therapy sessions shared common goals, such as learning to listen to one another, follow musical changes, initiate creative material, and work as a team. The group therapy model is particularly appropriate for children at this stage of development (Ahonen-Eeerikäinen, 2007), thus offering a safe space for students to explore relationships and identity, as well as providing an opportunity to create something meaningful (dos Santos et al., 2018).

Preschool children can also benefit from goal driven musical intervention. In a study by Moore et al. (2015), the authors explored the idea that music can be used as a therapeutic tool to support ER in preschool-aged children. The process of learning to regulate emotions in a healthy way is a lifelong practice, however the mental health risk factors involved in atypical ER development are significant. The authors offered the Therapeutic Function of Music (TFM) as an effective method that provides children with opportunities to practice handling heightened emotions such as surprise, excitement, or fear, for example, within the context of a structured and interactive adult-child experience.

Music often functions as a vehicle for inspiring emotions, of particular note by the midevil philosopher, Boethius (1989), who concluded "music is so naturally united with us that we cannot be free from it even if we so desired" (Boethius, 1989, p. 20). From the perspective of emotional regulation, Boethius' notion of the relationship between music and emotion can be used as an effective tool in providing structure within a classroom. A term coined as Allostatic Load (Guidi, 2020) refers to the psychological toll that chronic stress can have on the nervous system and the body's ability to regulate and return to a state of homeostasis. When children survive prolonged adversity and traumatic experiences, their capacity to self-regulate can be disrupted and their stress-response system can become maladaptive (Burke, 2018). Just as Boethius believed in the power that music has to illicit emotion and reshape the mind (Boethius, 1989), TFM implements musical intervention to illicit a stimulating (high arousal) and calming (low arousal) effect in preschool-aged children, and the relative components of each (Moore et

al., 2015). In his consideration of Boethius's treatise, translator Calvin Bower (1966) maintains, "one's actions can be greatly influenced by music: the calm can be enraged, the enraged can be made calm" (Bower, 1966, p 375.) Music therapy has the capacity to provide vital in-themoment support for children experiencing dysregulation in addition to providing opportunity for accessing coping strategies during musically simulated high and low arousal experiences (Moore et al., 2015).

#### **Music Therapy Increases Student Engagement**

Building and sustaining healthy meaningful relationships is necessary for human survival (Pearce et al., 2015). In a classroom setting populated by students with a wide range of abilities, it is often the students with disabilities who are at risk for facing barriers to academic success (Wilkerson, 2014). In the Pearce et al. (2015) study, the authors examined the act of singing and its relationship to social bonding, noting the human capacity for singing to be a cross-cultural attribute. Notably, neuropeptides, endorphin and oxytocin, are released by the human brain during bonding experiences, such as romantic relationships or a mother embracing her infant. These same neuropeptides exist among participants involved in synchronous activities that involve some level of exertion, such as rowing, dancing, or singing in a group. Moreover, authors of this study contended that a growing body of evidence suggests that synchronous activity increases prosocial behavior among participants, creating feelings of belonging and a sense of community (Pearce et al., 2014).

To study the effect that singing has on the development of positive relationships, the researches followed groups of adults in both singing and non-singing classes, and used a rating system for participants to reflect upon how close they felt to other members of their group at various timepoints (after one, three, and seven months) (Pearce et al., 2014). The researchers

measured participants endorphin release at various points during the process as well Though results indicated similar levels of closeness at the completion of the study, the singing groups bonded more quickly at a statistically significant rate.

The term "ice-breaker effect" refers to the efficiency of the act of singing in promoting accelerated attachment between unfamiliar individuals. This offers an dynamic method of mutual understanding without the time commitment that typically goes along with getting to know someone (Pearce et al., 2014). This study demonstrates the way singing can function as a mechanism for meaningful connection, allowing for large groups to work together more effortlessly and participants to have the opportunity for establishing healthy relationships within a wider network. This is of particular use with children who have histories of trauma or who have identified disabilities, because not only do they have a deep seated need to be valued and validated, but they are the students at greatest risk for complicated mental health challenges that can negatively affect their well-being, often leading to violence, addition, self-sabotage and/or school drop-out, if those needs are not addressed (Perry et al., 2021).

#### Discussion

At a time when schools across America face an unprecedented mental health crisis (AAP, 2021) and their students are burdened with progressing in a learning environment that must accommodate a growing number of students with psychiatric disorders (CAHMI, 2022), the clinical use of music is a means to a solution that is deeply overlooked. Though often considered a form of entertainment, research shows that music functions more accurately as a science (Stamou, 2022). The ancient Greeks likened astronomy and music to be closely related fields of study, one studying relationships between observable celestial objects, and the other studying

relationships between the concealed, internal objects inside us (Paulnack, 2004). Music is a fundamental component of human evolution, a basic need that is core to the human experience and reflective of thousands of years of neurobiological growth (Schulkin et al., 2014). Neglecting the clinical use of music in the Massachusetts public school system robs students of accessing their own evolutionary keys to development, overlooking broad neurological systems and cognitive structures intrinsic to life and essential for learning. Plato contended,

Music is a moral law. It gives a soul to the universe, wings to the mind, flight to the imagination, a charm to sadness, and life to everything. It is the essence of order, and leads to all that is good, just and beautiful, of which it is the invisible, but nevertheless dazzling, passionate, and eternal form. Plato (as cited in Watson, 1994) (p. 45)

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#### THESIS APPROVAL FORM

Lesley University Graduate School of Arts & Social Sciences Expressive Therapies Division Master of Arts in Clinical Mental Health Counseling: Music Therapy, MA

Student's Name: <u>Bonnie Diamond</u>

**Type of Project: Thesis** *Literature review* 

Music Therapy as a Support Model in Massachusetts Special Education: Title: <u>A Literature Review</u>\_\_\_\_\_

**Date of Graduation:** \_\_\_\_\_5/18/24 In the judgment of the following signatory this thesis meets the academic standards that have been established for the above degree.

Basel Zayed Thesis Advisor:

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