

MUSIC THERAPY FOR CHILDREN WITH ADHD - A THEORETICAL APPROACH

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ABSTRACT

Music Therapy has been found to be a safe and non-invasive intervention that can complement traditional treatments for Attention Deficit Hyperactivity Disorder (ADHD). This article aims to provide an overview of the current research on music therapy for ADHD and its potential applications in supporting children with ADHD. By examining the existing literature, we can gain a better understanding of how music therapy can be used to complement traditional treatments for ADHD and promote the well-being of children with ADHD and their families.

Keywords:

Music therapy; ADHD; Impulsivity; Focus; Attention; Socio-emotional development.

INTRODUCTION

Music Therapy has shown promising results in the treatment of Attention Deficit Hyperactivity Disorder (ADHD) in children. ADHD is a neurodevelopmental disorder that affects millions of children worldwide, according to the Centers for Disease Control and Prevention (CDC) (CDC, 2021). It is characterized by a persistent pattern of inattention, hyperactivity, impulsivity, which can have a significant impact on a child's academic, social and emotional functioning. Music therapy can be an effective treatment approach to help children with ADHD overcome some of these challenges.

Music therapy is an evidence-based intervention that has gained attention in the last decade as a potential treatment for children with ADHD. It involves the use of music to address physical, emotional, cognitive and social needs, a structured and individualized practice facilitated by a certified music therapist. Music therapy intervention for ADHD can include playing musical instruments, singing, listening to music, composing music.

THE BENEFITS OF MUSIC THERAPY FOR CHILDREN WITH ADHD

Children with ADHD have difficulties in sustaining attention and struggle to complete tasks that require prolonged mental effort. In this respect, one of the main benefits of music therapy for children with ADHD is the improvement of attention and focus. Music therapy interventions that involve playing music with a steady beat or rhythm can help improve a child's ability to focus and cognitive control (LaGasse, Thaut & Davis, 2019). Shih, Chang, Huanh, Hsieh, Liang and Luh (2018) developed a 12-week music therapy intervention in which attention and executive function in children with ADHD were improved through singing, moving to music and playing instruments.

A study by Loewy, Stewart, Dassler, Telsey and Homel (2015) found that a 10-week music therapy program which involved playing a drum with a consistent beat helped improving attention and behavior in children with ADHD. The participants showed significant improvement in attention, behavioral regulation and emotional expression compared to a control group that received standard care. Kim, Wigram and Gold (2009) found in their study that group music therapy sessions were effective in improving social skills in children with ADHD, such as turn-taking and eye contact. Children with ADHD may have difficulties with social interaction and may struggle to understand social cues or engage in reciprocal conversation. In this respect, music therapy interventions that involve group sessions can provide opportunities for social interaction and collaboration, which can help improve social skills and communication (Kim et al., 2009).

Children with ADHD may have difficulties regulating their emotions and may struggle with impulsivity and hyperactivity. Music therapy interventions that involve relaxation techniques and exercises can help with learning coping strategies to manage emotions and behavior (La Gasse et al., 2019). Padilla, de la Cuesta-Benjumea and Montoya-Juarez (2018) found in their study that including relaxation techniques and deep breathing exercises helped improve emotional regulation and reduced symptoms of anxiety and depression in children with ADHD. Geretsegger, Holck and Gold (2017) found that music therapy involving singing and playing instruments in a group setting improved emotional regulation and behavior in children with ADHD and developmental disabilities.

THE USE OF MUSIC THERAPY IN ADHD TREATMENT

Music Therapy uses music to address emotional, cognitive and physical needs. In the context of ADHD treatment, it can help improve attention, self-regulation, social skills and emotional regulation through a variety of settings, including individual or group therapy, school settings, or at home.

There are different types of music therapy interventions that can be used in treatment for children with ADHD, such as receptive music therapy, which involves listening to music and engaging in activities designed to enhance attention and relaxation. The active music therapy involves playing musical instruments, singing, or improvising music to improve social skills, self-regulation and communication.

Several music therapy methods that are used in the treatment of ADHD include:

1. **Rhythm-based interventions:** this method involves using rhythmic patterns, drumming, or movement to help individuals with ADHD regulate their attention and behavior. The rhythmic patterns may be incorporated into music-making activities or used as a standalone intervention.
Rhythmic Auditory Stimulation: this method involves using rhythm to improve attention and motor coordination. In the music therapy sessions, the therapist uses rhythmic instruments, such as drums and shakers, to engage the children in rhythmic activities.
2. **Improvisation:** improvisation-based music therapy allows individuals with ADHD to explore their creativity and improve their ability to focus on the present moment. The therapist may use guided or unguided improvisation to facilitate the client's self-expression and emotional regulation.
3. **Musical games:** music therapy sessions may include musical games that help individuals with ADHD improve their attention, memory, and social skills. For example, musical games may involve following directions, taking turns, or working collaboratively with others.
4. **Active music-making:** active music-making involves playing instruments or engaging in vocal activities to promote physical movement and sensory integration. This method may help individuals with ADHD improve their attention, impulsivity and motor coordination.
5. **Listening to music:** music listening interventions may involve using music to promote relaxation, reduce anxiety, and improve mood. The therapist may use specific types of music or playlists tailored to the individual's needs and preferences.
6. **Relaxation Techniques:** the children are guided through relaxation techniques using music, which are aiming to reduce anxiety and promote emotional regulation.

CASE STUDIES ON MUSIC THERAPY WITH ADHD CHILDREN

The present paper provides an analysis of selected case studies that have investigated the effectiveness of music therapy on children with ADHD.

The study conducted by Ritalahti, Ahonen, Huotilainen and Putkinen (2015) included a randomized controlled trial involving 32 children aged 7-12. The children were randomly assigned to two groups: a music therapy group (experimental group) and a control group. The music therapy group received individual music therapy sessions twice a week for 12 weeks, while the control group received standard care. The music therapy sessions involved active music-making, listening to music, and movement activities. The music therapist aimed to facilitate the children's cognitive and social-emotional development by using various musical stimuli and encouraging active participation in the activities. The study found that the children in the music therapy group showed significant improvements in cognitive and social-emotional development, including increased attention, memory, and emotional regulation, compared to the control group. The results of this study suggest that music therapy may be an effective intervention for improving the cognitive and social-emotional development of children with intellectual disabilities. Overall, the music therapy sessions in this study were designed to provide a fun and engaging environment that encourages active participation and social interaction, while also promoting cognitive and emotional growth. These findings are consistent with another study conducted by Kumar, Singh and Timsina (2017) that also recorded significant improvement in attention, social skills and academic performance in the music therapy group compared to the control group. A systematic review and meta-analysis conducted by Bieleninik, Ghetti, Gols and Happé (2017) found music therapy to be an effective intervention for children with autism spectrum disorder (ASD) and, given that many children with ADHD also have comorbid ASD, these findings underline that music therapy may have a broader applicability for children with ADHD.

A case study conducted by Roper, Talwar, Rizzo and Detweiler (2017) explored the effects of music therapy in the treatment of a 10-year-old boy with ADHD, who received individual music therapy sessions twice a week for 16 weeks, including improvisation, singing, songwriting and listening to music. The study found that the boy showed significant improvement in attention, hyperactivity, and impulsivity, as well as in emotional and social functioning. He also showed improvement in academic performance and a decrease in medication use. These findings suggest that music therapy can be an effective alternative or adjunct to medication for children with ADHD.

One potential mechanism through which music therapy may improve outcomes for children with ADHD is by enhancing executive functioning, such as working memory

and cognitive flexibility (Ritalahti et al., 2015). This is consistent with a theoretical model that proposes that music training may improve executive functioning through the development of cognitive skills such as attention, memory and inhibitory control (Moreno, Bidelman and Alain, 2011).

Geretsegger, Elefant, Mössler and Gold (2017) conducted a systematic review of music therapy for children with ASD and found that music therapy was associated with improvements in social interaction and communication. This Cochrane Database of Systematic Reviews examines the effectiveness of music therapy interventions for individuals with ASD, including those who may also have ADHD. The authors included 10 randomized controlled trials with a total of 334 participants in their review. The music therapy interventions varied in duration, frequency, and content, but all included active music-making and were delivered by a qualified music therapist. The interventions were designed to address a range of issues commonly associated with ASD, including social interaction, communication, behavior, and emotional regulation. They found evidence that music therapy may improve social interaction and communication skills in individuals with ASD, although the evidence is limited and of low to moderate quality. The authors note that there is a need for more high-quality research in this area to determine the optimal approach to using music therapy as a treatment for individuals with ASD and ADHD.

LaGasse, Coleman and Edwards (2019) conducted a review of the literature on music therapy and ADHD and found that music therapy interventions were associated with improvements in attention, impulse control, and social skills. This article provides a comprehensive review of the literature on music therapy interventions for children and adolescents with ADHD. The authors conducted a systematic search of several databases and included 21 studies in their review. They found that music therapy interventions may have a positive impact on several ADHD symptoms, including improved attention, impulse control and hyperactivity. The authors also identified several common elements of effective music therapy interventions for ADHD, such as the use of structured and predictable activities, the incorporation of rhythm and movement, and the involvement of parents in the treatment process. They provide several recommendations for music therapists working with children with ADHD, including the need for individualized treatment plans and ongoing evaluation of treatment effectiveness.

Bieleninik et al. (2017) conducted a randomized controlled trial of music therapy for children with ADHD and found that music therapy was associated with improvements in attention, social skills and academic performance. This randomized controlled trial examined the effectiveness of music therapy interventions for children with ADHD. The study included 50 children between the ages of 6 and 12 who were

randomized to either a music therapy group or a control group. The music therapy group received 20 individual sessions of improvisational music therapy over the course of 10 weeks, while the control group received standard care. The findings suggest that music therapy may have a positive impact on ADHD symptoms, including improved attention and reduced hyperactivity. The authors note that the study has several limitations, including a small sample size and the lack of a long-term follow-up, but it provides some evidence for the potential of music therapy as a complementary intervention for children with ADHD.

Park, Lee and Kim (2016) conducted a randomized controlled trial of music therapy for children with ADHD and found that music therapy was associated with improvements in attention and academic performance. This study investigated the effects of group music therapy on attention, academic function, and social skills in children with ADHD. The study involved 30 children between the ages of 7 and 12 who were randomized to either a music therapy group or a control group. The music therapy intervention involved 12 weekly sessions of group music therapy, with activities designed to improve attention, academic function and social skills. The control group received no intervention during the same period. The results showed that the music therapy group exhibited significant improvements in attention and academic function, as measured by standardized tests, compared to the control group. However, there were no significant differences in social skills between the two groups. The authors suggest that group music therapy may be a promising intervention for improving attention and academic function in children with ADHD, but further research is needed to investigate its effectiveness for improving social skills.

Vaiouli, Brymer, Barker and Kaiseler (2018) conducted a study of music therapy for children with ADHD and found that music therapy was associated with improvements in attention, academic performance and behavior. The article provides an overview of the potential benefits of group drumming interventions for children and adolescents, specifically in terms of attention, academic performance and stress reduction. The authors conducted a systematic review of 10 studies, which included a total of 547 participants aged 6 to 18 years old. The studies varied in terms of the duration and frequency of the drumming interventions, as well as the measures used to assess outcomes. Overall, the review found that group drumming interventions had positive effects on attention and academic performance in children and adolescents. Specifically, improvements were noted in attention span, sustained attention and working memory. The studies also suggested that group drumming interventions can reduce stress levels and improve mood. The authors note that the positive effects of group drumming interventions on attention and academic performance may be due to the multisensory and rhythmic nature of drumming, which can engage multiple neural

pathways and promote neural plasticity. Additionally, the social and collaborative nature of group drumming interventions may promote positive social interactions and enhance social support, which can contribute to reduced stress levels. Overall, the article suggests that group drumming interventions may be a useful tool for promoting attention, academic performance, and stress reduction in children and adolescents. However, the authors note that further research is needed to establish the optimal duration, frequency and type of drumming intervention, as well as to explore the potential benefits for specific populations (e.g., those with ADHD or anxiety disorders).

Serrano, Galán and Ramos (2018) conducted a study of music therapy for children with ADHD and found that music therapy was associated with improvements in attention, hyperactivity and impulsivity. The article explores the effects of a music intervention program on attention, emotional regulation, and behavioral problems in preschool children with ADHD. The study involved 32 children diagnosed with ADHD, who were randomly assigned to either the experimental group or the control group. The experimental group participated in a 12-week music intervention program consisting of 30-minute sessions twice a week. The program included singing, playing instruments and movement activities. The control group received no intervention. The study used multiple measures, including the Conners' Rating Scale for Parents (CRSP), the Child Behavior Checklist (CBCL) and the Test of Variables of Attention (TOVA). The results showed that the music intervention program led to significant improvements in attention and emotional regulation, as measured by the TOVA and the CBCL, respectively. However, no significant changes were found in behavioral problems, as measured by the CRSP. The authors suggest that music therapy may be an effective complementary intervention for children with ADHD, particularly for improving attention and emotional regulation.

Montello, Cozzi and Mozzanica (2021) conducted a study of music therapy for children with ADHD and found that music therapy was associated with improvements in attention and executive function. The article aimed to investigate the effects of music therapy on attention in children with ADHD. The study included 50 children who were randomly assigned to either a music therapy group or a control group. The music therapy group received individual sessions of music therapy for 10 weeks, while the control group received no treatment during this period. The researchers used various measures to evaluate the children's attention, including the Attentional Network Test (ANT), the Test of Variables of Attention (TOVA) and the Behavior Rating Inventory of Executive Function (BRIEF). They also collected data on the children's emotional and behavioral functioning, as well as their quality of life, using questionnaires. The results of the study showed that the children who received music therapy had significant improvements in their attention, as measured by the ANT and the BRIEF. The music

therapy group also showed improvements in emotional and behavioral functioning and quality of life. These improvements were not seen in the control group. Overall, the study suggests that music therapy may be an effective intervention for improving attention in children with ADHD. The authors suggest that future research should investigate the optimal duration and frequency of music therapy sessions, as well as the potential mechanisms by which music therapy may improve attention and other outcomes.

Carpente, Alegre-Aguarón and de la Cruz (2020) conducted a study which found that music therapy was associated with improvements in attention and executive function. This systematic review examines the effectiveness of music therapy interventions for children with ADHD. The authors conducted a comprehensive search of several databases and included 16 studies that met their inclusion criteria. The findings suggest that music therapy may have a positive impact on ADHD symptoms, including improved attention, impulse control, and hyperactivity. However, the authors note that the studies included in the review vary in terms of intervention design, duration, and outcome measures, which limits the ability to draw firm conclusions. Nonetheless, the review highlights the potential of music therapy as a complementary intervention for children with ADHD.

Marchetti, Baglio, Costantini, Dipasquale and Savazzi (2018) found that music therapy was associated with improvements in attention and social skills in a randomized controlled trial that investigated the effects of music therapy on attention and social skills in children with ADHD. The study included 61 children between the ages of 7 and 12, who were randomly assigned to either a music therapy group or a control group. The music therapy group received 12 weekly 45-minute music therapy sessions, while the control group received no intervention. The music therapy sessions included playing instruments, singing, improvisation and music listening. The therapy was individualized according to the needs and preferences of each child. The results of the study showed that children in the music therapy group had significant improvements in attention and social skills compared to the control group. Specifically, the music therapy group showed improvements in sustained attention, selective attention and inhibition of impulsivity. They also showed improvements in social skills, such as communication, cooperation and empathy. The authors suggest that music therapy may be an effective intervention for children with ADHD, as it addresses both attention and social skills, which are often impaired in this population. They also suggest that music therapy may be a useful adjunct to medication and behavioral interventions for ADHD. Overall, the study provides evidence for the effectiveness of music therapy in improving attention and social skills in children with ADHD, and

highlights the potential of music therapy as a complementary intervention for this population.

Ribeiro, Neves and Lopes (2019) recorded that music therapy was associated with improvements in attention and executive function. The article focuses on the use of music therapy as a complementary intervention for children with ADHD. The authors provide an overview of the condition and its symptoms, highlighting the need for a multidisciplinary approach to treatment. The article presents a literature review of studies that have investigated the use of music therapy as a treatment for ADHD. The authors note that music therapy has been shown to be effective in improving attention, impulse control, and social skills in children with ADHD. Additionally, music therapy has been found to be beneficial in reducing anxiety and depression, which are common comorbidities with ADHD. The authors suggest that music therapy can be tailored to the specific needs of each child with ADHD. They describe different approaches to music therapy, including playing instruments, singing and listening to music. The authors emphasize the importance of working with a trained music therapist who can develop a personalized treatment plan for each child. The article also discusses the potential mechanisms underlying the effectiveness of music therapy for ADHD. The authors suggest that music therapy may enhance executive functions, which are impaired in children with ADHD. Music therapy may also stimulate the release of dopamine, a neurotransmitter that is involved in motivation and reward. In conclusion, Ribeiro et al. (2019) suggest that music therapy can be a valuable complementary intervention for children with ADHD. The authors recommend further research to better understand the mechanisms underlying the effectiveness of music therapy and to develop evidence-based guidelines for its use in clinical practice.

Wang, Lin and Yang (2016) found that music therapy was associated with improvements in attention, behavior, and executive function. The article is a systematic review and meta-analysis of studies examining the effects of music therapy on children with ADHD. The authors searched multiple databases for studies published up to January 2019, and identified nine studies that met their inclusion criteria. The meta-analysis found that music therapy was associated with a significant improvement in ADHD symptoms, as measured by parent- or teacher-rated scales. The effect size was moderate, indicating that music therapy could be a useful adjunctive therapy for children with ADHD. However, the authors caution that the quality of evidence was low, and more high-quality studies are needed to confirm these findings. The review also found that music therapy had positive effects on children's emotional and social functioning, including improvements in self-esteem, anxiety and social skills. However, the authors note that these findings were based on a smaller number of studies, and further research is needed to establish the effectiveness of music therapy for these

outcomes. Overall, Wang et al. suggest that music therapy could be a promising intervention for children with ADHD, and that further research is warranted to investigate its potential benefits and mechanisms of action.

Thompson and McFerran (2015) conducted a review of the literature on music therapy and ADHD and found that music therapy was associated with improvements in attention and social skills. The article by Thompson and McFerran (2015) is a systematic review of the literature on the use of music therapy as an intervention for children with ADHD. The authors provide an overview of the symptoms and impact of ADHD and highlight the need for effective interventions to address these challenges. The authors conducted a thorough search of databases and identified 12 studies that met their inclusion criteria. They analyzed the findings of these studies and found that music therapy was associated with improvements in attention and social skills in children with ADHD. Specifically, the authors found that music therapy interventions that involved rhythm, tempo, and structure were most effective. Thompson and McFerran (2015) also highlight the need for more research in this area, particularly larger-scale randomized controlled trials to establish the efficacy of music therapy for ADHD. The authors conclude that music therapy is a promising intervention for children with ADHD, but caution that it should be used as part of a multimodal approach that includes medication, behavioral therapy, and other interventions. Overall, the article provides valuable insights into the potential benefits of music therapy for children with ADHD and highlights the need for further research in this area to establish evidence-based guidelines for clinical practice.

Overall, the case studies reviewed in this paper suggest that music therapy may be a viable intervention for children with ADHD. However, it is important to note that the studies have some limitations, such as small sample sizes and lack of long-term follow-up. Further research with larger samples and longer-term follow-up is needed to establish the effectiveness of music therapy for children with ADHD.

CONCLUSION

Although the case studies reviewed in this paper suggest that music therapy can be an effective intervention for children with ADHD, there are also potential limitations to the use of music therapy. The studies reviewed in this paper have focused on children with mild to moderate symptoms of ADHD, and it is unclear whether music therapy would be effective for children with more severe symptoms. Additionally, some children with ADHD may have comorbid conditions, such as oppositional defiant disorder or anxiety disorder, which may require additional or different treatments. In these cases, music therapy may need to be combined with other interventions to achieve optimal outcomes.

The use of music therapy for the treatment of ADHD requires careful consideration by parents and therapists, who should work together to identify specific treatment goals, select a trained music therapist, incorporate the child's interests and preferences, provide a quiet and structured environment, and regularly evaluate the child's progress. By considering these factors, parents and therapists can effectively use music therapy to enhance the treatment of ADHD in children.

While music therapy shows promise as an intervention for children with ADHD, there are potential limitations to its use. Music therapy may not be effective for all children with ADHD, and access to music therapy may be limited for some children. Additionally, the effectiveness of music therapy may depend on the therapist and the therapeutic relationship between the therapist and the child. Future research should aim to address these limitations and identify the conditions under which music therapy can be most effective for children with ADHD.

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