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A Comparison of Music Therapy Approaches Utilized with Persons Diagnosed with Autism Spectrum Disorder (ASD)

Sally M. Gibson
University of Dayton

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**A Comparison of Music Therapy
Approaches Utilized with Persons
Diagnosed with Autism Spectrum
Disorder (ASD)**



Honors Thesis

Sally M. Gibson

Department: Music

Advisor: Susan C. Gardstrom, PhD, MT-BC

April 2022

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Abstract

Music therapy is a clinical practice wherein music is used in the context of a therapeutic relationship to address client needs relating to their physical, emotional, cognitive, social, and spiritual health and wellbeing. Two contrasting approaches to music therapy treatment have been identified by Bruscia (2014) as *outcome-oriented* and *experience-oriented*. Both approaches provide opportunities for clients to reach their health-related goals, but the planning and implementation of therapy is different from each approach. The purpose of this project was to examine how these two orientations are represented in the professional literature related to autism spectrum disorder (ASD). This paper includes a description of music therapy practice, a description of ASD and how music therapy has been employed with individuals diagnosed with ASD, and a review of the literature on how music therapy is currently carried out with individuals diagnosed with ASD.



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A Comparison of Music Therapy Approaches Utilized with Persons Diagnosed with Autism Spectrum Disorder (ASD)

Music therapy is a clinical practice wherein music is used in the context of a therapeutic relationship to address client needs relating to their physical, emotional, cognitive, social, and spiritual health. Two contrasting approaches to music therapy treatment have been identified by Bruscia (2014) as *outcome-oriented* and *experience-oriented*. Both approaches provide opportunities for clients to reach their health-related goals, but the planning and implementation of therapy is different from each approach.

Because music therapy has emerged as one of many viable treatment options for individuals with autism spectrum disorder (ASD), it is important for music therapists to understand ways in which music therapy can be successfully carried out when working with clients diagnosed with ASD. The purpose of this project is to examine current literature related to music therapy as treatment for ASD through the lens of both the outcome-orientation and the experience-orientation to gain a better understanding of how both of these theoretical approaches are represented in the professional literature related to ASD.

This paper is unique in the fact that it categorizes music therapy practice based on the outcome- or experience-oriented approach. Although the terms *outcome-oriented* and *experience-oriented* are not commonly used in music therapy literature, they provide important context and distinguish between different approaches of practice.

Understanding these two approaches and how they can each be used, either with the therapist practicing from only one orientation consistently or shifting between these discrete approaches, can positively impact music therapy clinical practice.

I begin with a detailed description of music therapy, including the outcome- and experience-oriented approaches. This is followed by a detailed description of ASD, including common nonmusical treatments that are employed presently. I then go on to explain why music therapy may be included in the treatment of individuals diagnosed with ASD and how it may be incorporated in an individual's overall course of treatment. The paper concludes with a review of literature relating to music therapy practice with individuals diagnosed with ASD. This section is organized by practice orientation within the categories of the four music therapy methods.

For this study, I searched for materials through the EBSCO database, gathered sources from bibliographies at the end of studies, and gathered additional resources from research advisors. The literature review included in this paper describes both experimental and quasi-experimental studies, as well as experimental and descriptive case studies. I chose these writings from scholarly, peer-reviewed journals and edited collections, including only those that had a direct relevance to the research topic. Once these sources were obtained, I examined them individually to determine their relevance, and then annotated each of them for future detailed review.

Music therapy in the treatment of people diagnosed with ASD has evolved over time, as have the approaches that music therapists take in working with these individuals. Currently, many music therapists practice from different theoretical orientations when working with people with ASD, so it is important for music therapists to develop an understanding of the vocabulary relating to these orientations, such as the similarities and differences between the outcome- and experience-orientations.

Music Therapy

Music therapy is one emerging treatment modality for ASD that has gained traction in recent years. According to the American Music Therapy Association (AMTA), “music therapy is an established health profession in which music is used within a therapeutic relationship to address physical, emotional, cognitive, and social needs of individuals” (AMTA, 2022). The therapist helps the client to bring themselves to their highest health potential by using music experiences and the relationships formed as the agent of change (Bruscia, 2014). Although anyone can personally utilize music in a healing or therapeutic way, a music therapist in the United States must have completed an approved academic training program and hold the Music Therapist-Board Certified (MT-BC) credential; this ensures competent and informed practice (Bruscia, 2014; AMTA, 2022). Not just anyone can make music for or with others and advertise themselves as a music therapist.

The role of the music therapist is to continuously observe the client and collaborate with both the client and other caregivers or healthcare professionals to determine the best course of action for the individual client. The aim of therapy is to optimize an individual’s health, so a music therapist aims to address or improve aspects of the client’s health that can be influenced by the use of music (Bruscia, 2014). Once the therapist and/or the client and caregivers determine the direction of therapy, the therapist’s job is to provide opportunities for the client to receive what they need from therapy. As such, the therapist may take on varied roles and responsibilities: designing and overseeing a treatment protocol or helping the client to figure out the most conducive treatment alternatives; serving as a witness to and emotionally supporting the client’s change process; and observing and interpreting the client’s musical and nonmusical

responses. Therapeutic change may lead to generalization, or the client's ability to apply skills and insights gained in music therapy to their other environments and contexts (Bruscia, 2014).

Music Therapy Methods and Variations

Music experiences introduced in music therapy can be categorized into four main methods: improvisation, re-creation, composition, and receptive (listening). Each of these four methods has its own unique characteristics and each requires different processes of engagement, evokes different kinds of feelings or emotions, relies on different levels of cognitive ability, and utilizes different sensorimotor skills (Bruscia, 2014). Because of this, each method comes with its own set of affordances, challenges, and inherent risks for clients.

Within the four main methods of music therapy lie the method-variations. Method-variations are the specific ways in which the music therapy methods are implemented in a clinical context (Bruscia, 2014). Each variation is designed and facilitated in a specific way within the parameters of the method. In the next section, I define and provide examples of each of the four main methods of music therapy.

Improvisation

The music therapy method of improvisation is when a client extemporaneously creates sounds and music using instruments, their voice, body percussion, or some combination of the three. Examples of instruments that a client may use in improvisation experiences are melodic instruments (piano, guitar, ukulele, xylophone, tone chimes, etc.) or non-melodic instruments (drums, shakers, tambourines, cabasas, etc.) One's voice also may be included in improvisation experiences. Improvisation can be carried out with the

client playing alone, in a dyad, or in a group that could include the therapist or other clients in a treatment setting. The job of the therapist within this method is either to provide instructions and modeling for the client to reference in their own playing or, in free improvisation, to take cues from the client and provide the client more freedom to lead the experience. This might include offering examples of musical ideas or nonmusical themes to guide the client's playing.

Some variations of improvisation may target specific, predetermined objectives, such as improving fine or gross motor skills through instrumental play, improving turn-taking skills, or improving one's ability to play a steady beat. Improvisation may also be used as a medium of nonverbal expression for clients, providing opportunities for self-expression, self-discovery, and interpersonal discovery. Clients are able to learn more about themselves and their relationships with others throughout the processes of an improvisation experience and the musical products that result.

Re-Creation

Re-creative music therapy experiences involve the client learning, practicing, or re-producing a musical model, such as singing a pre-composed song or re-creating an instrumental piece alone or with others. Although in some ways similar, re-creation is different than performing because the intention of the re-creative experience is not to make music for any sort of audience. This method also includes some structured musical games or activities that involve the client having a specific musical role in the experience. Re-creation can be carried out vocally and/or instrumentally and can also occur either independently or in a larger group.

Re-creative experiences can be clinically beneficial in the areas of improving sensorimotor skills through instrument-playing, improving memory and attention, and fostering an increased sense of community between group members participated in music-making. Through re-creative experiences, clients may develop specific interpersonal skills and also experience a sense of musical mastery.

Composition

Composition in music therapy includes experiences in which the therapist provides support for the client while they write songs, chants, lyrical content, or instrumental music. Experiences such as musical collages or audio-autobiographies—the client pieces music and sounds together in an original fashion—also fall under the category of composition. The therapist uses their clinical judgment to determine how much musical support the client needs in order to be as successful as possible throughout this experience. It is often the job of the therapist to provide a musical structure, such as harmonic accompaniment on the piano or guitar, a melody to encompass lyrics that the client generated, or a technique for brainstorming and solidifying lyrics for a song.

Compositional experiences can be very useful in improving skills relating to decision-making, the exploration of themes, and documenting music in a way for others to re-create on their own. Composition may also aid in a client's development of organization and expression of thoughts or feelings that may be more difficult to articulate outside of the music. Sometimes diving into emotions, both pleasant and unpleasant, in the context of music, allows a more free-flowing process of recognizing and expressing those emotions.

Receptive

Receptive music therapy experiences involve a client listening to music and then responding in some capacity. This might look like silent reflection, verbal discussion, the creation of artwork, musical processing, or another process. The therapist chooses music, either pre-recorded or performed live by the therapist, that both fits the needs of the client and is conducive to the goals of the therapeutic experience. According to Bruscia (2014), “the listening experience may be focused on physical, emotional, intellectual, aesthetic, or spiritual aspects of the music, and the client’s responses are designed according to the therapeutic purpose of the experience” (p.135). It is important to ensure that the client has the attentional capacity to engage in receptive experiences before introducing these experiences in a session.

Many times, receptive experiences will be used for the client to develop specific auditory, motor, or memory skills. These may include using music to improve auditory perception, improving gross or fine motor skills, or stimulating the client’s memory through listening to songs. Receptive experiences can also work toward developing receptivity and introspective skills through music listening or verbal processing. These experiences may be utilized to evoke physiological responses, either stimulating or relaxing the client. Music listening may also be used to evoke mental imagery for the purposes of engaging in self-exploration or expanding cognitive processes.

Theoretical Orientations

Music therapy is practiced from a variety of theoretical orientations to clinical practice. Some orientations, such as the psychodynamic, behavioral, and humanistic approaches, have been inspired by similar work in the field of psychology. Others are

indigenous to, and have developed from, the practice of music therapy, such as Creative Music Therapy, which will be described below.

Psychodynamic

Psychodynamic theory is a common approach to music therapy that was inspired by psychoanalytic psychotherapy in the field of psychology. This approach involves using a variety of techniques to uncover, understand, and process unconscious psychological and emotional material stemming from one's past that impacts their present day-to-day life. According to Jungian analyst and music psychotherapist, Dr. Diane Austin, music therapy is "a creative process that utilizes music and words within a client-therapist relationship to facilitate an ongoing dialogue between conscious and unconscious contents" (p. 30). Music is used in a therapeutic context to bring unconscious material into consciousness, acknowledge internalized conflicts, and work to resolve or diminish those conflicts. In psychodynamic work, music is believed to be symbolic of a client's inner experiences. Free association through improvisation is often utilized to aid in uncovering unconscious thoughts that may be contributing to an individual's internalized struggles (Austin, 1996). Psychodynamic practice in ASD treatment has focused on improving self-expressive and communicative abilities.

Behavioral

Behavioral psychology is characterized by the study of external behavior. Unlike subjective material that one may possess internally, such as changes in thought, feeling, or attitude, behaviorism centers around observable, objective behavior. Music therapists have been incorporating behaviorism into their own practices since the late 1940's and more recently have begun to incorporate both cognitive and affective components of the

behavioral theory (Standley, Johnson, Robb, Brownell, & Kim, 2004). Techniques such as modeling, positive and negative reinforcement, and group contingencies have been implemented in music therapy practice to modify and improve client behavior. In behavioral music therapy, the music functions predominantly as a cue or prompt for the desired behavior and a reward for achievement. Through the use of behavioral techniques, music therapists can identify and address problematic behavior of individuals with ASD, enabling them to learn more adaptive behaviors.

Humanistic

The theory of humanism is centered on an individual's innate "human-ness." Humanistic music therapist, Dr. Brian Abrams (2018) states four core principles of humanism:

- (a) the uniqueness of the human and those disciplines that are uniquely human (i.e., the humanities); (b) the significance of the individual identity; (c) the principles of logic, reason, and scientific realism; and (d) the pursuit and development of human virtue and benevolence. (p. 139)

A fundamental aim of humanism is working toward self-actualization, which is pursuing the best possible version of oneself, as defined by that individual. In humanistic music therapy, music engagement affords the client opportunities to develop the Self. The music therapist emphasizes the characteristics of respect, acceptance, empathy, and congruence in their practice. Music experiences provide opportunities for clients to exercise their agency as a platform for growth. Through music-making, individuals diagnosed with ASD can build, sustain, and find meaning in interpersonal and intermusical relationships with the therapist or other clients.

Under the umbrella of the humanistic approach emerged a music therapy-indigenous approach called Creative Music Therapy. This model, developed by Paul Nordoff and Clive Robbins, relied on a music-centered (usually music improvisational) relationship to provide opportunities for clients to interact with their therapist and the music in ways that were not hampered by the client's disability. This was done through unique musical support and challenges that encouraged individuals to utilize and develop their abilities through direct music-making (Abrams, 2016).

Practice Orientations

Outcome Orientation

When practicing music therapy from an outcome orientation, the music therapist tries to “induce a very specific, predictable response in the client” (Bruscia, 2011). The desired client-response is pre-determined by the music therapist based on careful observation and assessment. Because this approach to treatment is focused on eradicating or mitigating problems related to the client's daily functioning, the music therapist has an idea of what the client needs from therapy before the therapy even begins and is able to articulate a predetermined end goal. When a music therapist elects to practice from this orientation with a given client or in a specific situation, they use sessions to affect nonmusical change, utilizing a variety of different method-variations in order to target a nonmusical goal.

Within the outcome-oriented approach, music is used as a stimulus or reinforcer in order to move the client to produce the desired response. In other words, the music acts as a tool, or a means to an end. Musical activities in which the client engages require of them a specific musical behavior or response that somehow relate to a nonmusical aim.

For example, playing a drum with mallets targets the improvement of fine and gross motor skills. From an outcome-oriented perspective, the therapist is considered an expert in how to select and design a music experience that targets the clinical objective and a scientist who is able to define and track an observable and measurable response from the client.

Experience Orientation

In contrast to the outcome-oriented approach, the experience-oriented approach relies more on the therapeutic process than the elicitation of a predetermined nonmusical behavior. Experience-oriented music therapy is built on the belief that the process of engaging in music experiences within a therapeutic relationship is inherently health-producing. When clients take part in a therapeutic music experience, they have opportunities to discover a relevant therapeutic issue and then use the musical process to determine options for working through this issue. Going into a therapy session, a music therapist and client may have an idea of potential needs and goal areas but will ultimately rely on the music experiences to reveal avenues of exploration and growth.

In this approach, music is used as a medium for the client's change process. The music is an important part of the process because it is considered to be one potentially attractive medium through which a client can recognize and explore clinical issues. An example of this may be when a group of clients creates an increased sense of community or group cohesion through engaging in an improvisation experience. The job of the music therapist, then, is to remain reflexive throughout each music experience and respond to the client as the client realizes therapeutic alternatives for themselves. A musical product from this way of working (e.g., a song composition or drawing) may also act as a

representation of everything that was externalized, processed, or changed by the client during a music experience. According to Bruscia (2014), this product “provides a musical image, symbol, metaphor, or projection of each person involved in the process—their problems, resources, feelings, thoughts, solutions, and so forth—while also giving a musical description of the relationships that emerged between the various persons, objects, and events involved in the experience” (p. 182). The client’s ability to reflect on this musical product may allow them to further process or understand the experiences represented.

Integral Practice

According to Bruscia (2014), “each of the above strategies can be used for an entire session or even an entire course of therapy; however, they can also be used together as an integral part of every session and course of therapy” (p. 183). Although a therapist may be tempted to work from a singular clinical perspective, both outcome- and experience-oriented strategies may be viable at any given time, depending on client needs. Integral thinking, founded on reflexivity and flexibility, enables the therapist to determine when either an outcome-orientation or an experience-orientation would be most beneficial for the individual client. This determination can occur both within a single session and across the overall treatment trajectory.

In integral practice, there are opportunities for both the client and the therapist to take on the roles of both leader and follower. This allows for more give-and-take during sessions and gives the client more autonomy to make clinical decisions (Bruscia, 2014). Some professionals strongly advocate for the implementation of integral practice in music therapy because it is the most effective way to cater music therapy experiences to

the individualized needs of each client (Lee, 2015). If a music therapist is comfortable practicing flexibility and fluidly, moving between outcome- and experience orientations, they will be able to adapt the design and facilitation of music experiences to set clients up for success.

Autism Spectrum Disorder

Characteristics and Needs of Individuals

Autism, or autism spectrum disorder (ASD), is a lifelong and complex neurodevelopmental disorder gaining increased attention from parents and healthcare professionals in recent years. Although specific causes are mostly unknown, this disorder is characterized by the presentation of two main symptoms that cause clinically significant impairments in multiple areas of the child's daily life: (1) a deficit in social communication and social interaction across multiple contexts; and (2) engagement in restricted, repetitive, and stereotyped behavior patterns, including interests or activities (American Psychiatric Association, 2013; Kern, Rivera, Chandler, & Humpal, 2013). In order for ASD to be accurately diagnosed, these core symptoms must be present in a child's period of early development and cause "clinically significant impairment in social, occupational, or other important areas of functioning" (American Psychiatric Association, 2013, p. 50). These symptoms also must be not explained by any other intellectual disability with which the individual has been diagnosed.

ASD is considered a "spectrum disorder," which means that the severity and/or presentation of any symptoms caused by the disorder will likely look different for each affected individual and may change or evolve throughout the individual's lifetime (Hintz, 2013). This also leads to a wide range of skills and levels of functioning among

individuals with ASD (American Psychiatric Association, 2013). ASD has been known to occur in individuals across races and ethnicities, and across socioeconomic status levels (AMTA, 2022). It is evident that ASD is about four times more prevalent in boys than girls and it is estimated that about 1 in 59 children in the United States meet all criteria for ASD.

ASD can be accurately recognized in children as young as 3 years of age, and it is recommended that individuals begin treatment as soon as possible after diagnosis (Strock, 2004). In general, the effectiveness of therapy is determined both by how early treatment begins and what modality of treatment is taken (Khyzhna & Shafranska, 2020).

Healthcare professionals in many different fields including medicine, psychology, education, and speech therapy often collaborate to determine the treatment approach that is likely to be the most effective for the individual (Khyzhna & Shafranska, 2020).

Typical Non-Music-Based Treatment

Once a child is diagnosed with ASD, early intervention is crucial in order to provide the best opportunities for successful development throughout the child's early life (Strock, 2004). Typical goal areas for treatment include improving cognitive level, improving specific skills such as vocabulary, social skills, and joint attention, and improving challenging behavior and undesired mood (American Psychiatric Association, 2013). Professionals utilize evidence-based practice, or strategies that are directly based on scientific evidence of effectiveness, and interventions typically include the following principles: family-centered and strength-based, implemented in the child's everyday environments, developmentally consistent, coordinated with other healthcare professionals, and targeting specific goals that promote general functioning of the

individual and that are oriented toward active participation of the client (Kern, Rivera, Chandler, & Humpal, 2013). Some forms of treatment currently believed to be most effective include medication to target challenging behavior and mood, and applied behavioral analysis (ABA), an intensive one-to-one child-teacher intervention with a goal of reinforcing desirable behaviors and reducing undesirable ones (American Psychiatric Association, 2013, Strock, 2004).

Although there is currently no known cure for ASD, it is imperative that the child's healthcare professionals identify and determine a course of intervention that will work well with the child's individualized strengths and needs. If this is done effectively, the child will have the best chance of benefiting from the intervention in order to improve their everyday skills of living (Kern, Rivera, Chandler, & Humpal, 2013). It has been recommended that treatment interventions be inspired by the child's individual interests, include simple steps of task-teaching, interact with the child in an active and engaging way, provide regular encouragement and reinforcement of preferred behaviors, and adhere to a predictable schedule—it is thought that children with ASD typically respond better to highly-structured interventions than those with little structure or a lot of freedom (Strock, 2004). In general, treatment usually targets areas related to communication and social interaction (Strock, 2004).

Music Therapy and Autism Spectrum Disorder

Why Music Therapy?

With an increasing awareness and prevalence of ASD in the United States comes an increased need for effective treatment. As stated by the AMTA, regardless of age, culture, socioeconomic status, illness, or disability, most individuals are able to connect

with music in some way in their daily lives (AMTA, 2022). The AMTA continues to explain that the naturally engaging nature of music is often able to stimulate a positive response in individuals with ASD, sometimes even more so than in their typically-developing peers. Nordoff and Robbins, two of the first music therapists to use improvisational music therapy with children with ASD, proposed that individuals diagnosed with autism often experienced music as a non-threatening avenue of expression, which then made them more likely to interact with the music being presented. Furthermore, it has been demonstrated that “individuals with ASD may exhibit special musical abilities, particularly in pitch perception, as well as an affinity for music” (Carpente & LaGasse, 2015). This has inspired and prompted an increase in music therapy services with individuals with ASD.

Researchers have conducted case studies and reviews that provide evidence that music therapy is effective in improving individuals’ social skills, communication skills, and speech and language skills (Pater, Spreen, & van Yperen, 2021). In addition, music therapy has been shown to be effective in decreasing perseverative behaviors in individuals with ASD (Carpente & LaGasse, 2015). Because there is evidence that individuals with ASD often respond to music in a positive way, music therapy is considered to be an emerging practice in the treatment of ASD (Kern, Rivera, Chandler, & Humpal, 2013). This means that there is substantial evidence for the effectiveness of music therapy in the treatment of ASD, but the body of evidence needs to continue to grow in order to support claims of efficacy, efficiency, and long-term impact on individuals with ASD.

Historical Applications

The earliest music therapy with individuals with ASD most likely took place in psychiatric hospitals, institutions, or schools.¹ Goals for treatment reflected broad areas based on the diagnosis of ASD, most often revolving around improving general communication in individuals with ASD. As the efficacy of music therapy continued to be discovered, music therapists in different geographical areas used trial and error to determine successful music therapy techniques for working with individuals with ASD and began targeting different goal areas more specific to ASD, such as sensory sensitivities.

Eventually, therapeutic goal areas became more specific to target communication skills, social skills, motor and perceptual skills, behavior modification, cognition, emotional and psychological abilities, musical abilities, and sensory sensitivities (Reschke-Hernandez, 2011). Many of these goal areas are still addressed in current treatment of individuals with ASD. In addition, music therapists began using more in-depth and ongoing assessments for clients to better understand each client's specific strengths and needs and individualize treatment for each client.

Contemporary Applications

There is still a relatively wide focus of clinical goals and techniques used in music therapy with individuals diagnosed with ASD because of differences in the therapists' training and theoretical approach. Some therapists may first determine nonmusical goals in areas such as communication, social skills, or behavior modification, while others may focus more on music-centered goals in areas such as musical relatedness in the context of a therapeutic relationship. In general, contemporary music therapy most often focuses on

¹ In that the awareness of music therapy and autism were emerging simultaneously in the 1940s and 1950s, the literature on music therapy and ASD prior to that time is scant.

enhancing social, communicative, motor and sensory, emotional, academic or cognitive, or musical functioning in individuals diagnosed with ASD (AMTA, 2022).

Bruscia explains that the act of communicating not only involves interaction with someone, but also goes a step further to include an exchange of ideas between individuals (Bruscia, 2014). Music therapy creates an opportunity for this exchange of ideas to occur not only verbally or gesturally, but also through the music being utilized. Furthermore, musical communication is both carried out and processed in different ways than verbal communication, so oftentimes individuals who struggle with verbal communication are able to thrive when communicating musically. Thus, musical communication is indispensable to the therapeutic process and may eventually serve as a bridge to accomplishing verbal or nonverbal communication (Bruscia, 2014).

Because of the importance of individualizing treatment for each specific client, music therapy services are “based on each client’s individual abilities, noting preferences, needs, the family’s values, beliefs, and priorities” (AMTA, 2015). From an outcome-oriented perspective, ASD-specific techniques are used in tandem with music therapy techniques to support individuals in improving and carrying out targeted skills. In addition, sessions can create familiar, consistent, and highly-structured environments, providing a consistent norm for therapy that directly supports a style of learning that is common among individuals with ASD.

Literature Review

The present section is dedicated to a review of the literature related to each of the four music therapy methods as practiced from outcome-oriented and experience-oriented approaches.

Improvisation

Outcome-Oriented Music Therapy

In a study by Pater et al. (2020), outcome-oriented improvisation was used to target goals related to social interaction in ten children between the ages of 4 and 10 years who had previously been diagnosed with ASD. Each of these children previously demonstrated a need for improvements in social behavior, and none of them received other social behavior-improving therapies during the time of this music therapy study. The independent variable in this study was 20 in-home music therapy sessions, approximately 40 minutes each. Treatment began with an observation and assessment period and then moved into the second phase of treatment in which the music therapist and child actively engaged in a music experience. Within the context of this experience, the music therapist used a variety of techniques to make musical and nonmusical connections with the child. Once a connection was established, the therapist used a variety of techniques to prompt the child to produce a specific behavior (e.g., turn-taking), depending on the individual's social communication needs. Once this behavior was demonstrated by the client, the music therapist verbally rewarded the child and challenged them to continue engaging in this behavior. The results of this study indicated that this method of music therapy produced behavioral improvement in children with ASD.

In their chapter, "Music Therapy for Children with Autism Spectrum Disorder," Carpente and LaGasse (2015) provide multiple case examples of use of the methods with clients with ASD. In one example, the therapist used improvisation from an outcome-oriented approach in the context of social competence training with a 10-year-old girl

named Marigold who was diagnosed with ASD. Social competence training allows individuals to practice engaging in social skills (in this case joint attention skill) that aid them in everyday functioning. Marigold's joint attention skills were identified as a primary need, so the music therapist designed an improvisation experience to target this goal area. The authors describe that this experience involved "successive steps from playing an instrument with the therapist, to looking at the therapist's eyes to determine what they will play next, to looking into a peer's eyes to determine what he or she will play next" (p. 299). Once Marigold was proficient at putting meaning to someone else's gaze in the context of a music experience, this skill could be generalized and she could learn to use joint attention as a form of communication.

Music therapist Clarkson (1991) presents a case example of improvisational music therapy with a 22-year-old male named Jerry who was diagnosed with ASD. Jerry was nonverbal and had been known to be extremely violent to himself and others, often engaging in self-harming behaviors when he became agitated. It was noted that Jerry demonstrated an affinity for music throughout his whole life, showing interest in playing instruments, dancing, and participating in other types of music-related arts and crafts. Throughout treatment, the goals set for Jerry's 30-minute individual music therapy sessions "focused on developing Jerry's interpersonal interaction and communication skills as well as on improving his innate sense of rhythm and melodic phrasing" (p. 378). Clarkson explains that she used improvisational music therapy with psychodynamic and behavioral techniques throughout Jerry's treatment, such as positive reinforcement for appropriate behaviors and ignoring harmless negative behaviors. Sessions always included both an opening and a closing song in order to provide Jerry with structure and

consistency. In between these experiences, Jerry engaged in playing rhythmic patterns on drums, playing song accompaniments on a variety of melodic instruments, and moving or dancing to recorded music. Throughout treatment, Jerry continuously accomplished the goals set for him, showing dramatic improvements in areas such as his ability to sustain eye contact, his ability to communicate through gestures and sign language, and his improved self-respect and self-confidence. Clarkson attributes much of this improvement to his opportunity to engage in music experiences, especially because of his lifelong love for music.

Experience-Oriented Music Therapy

There is a significant body of research describing improvisational music therapy within the experience-oriented approach. Edgerton (1994) describes her study in which she observed the effect of improvisational music therapy on the communicative behaviors of eleven children with ASD between the ages of six and nine years. Each of these individuals showed deficits in communication skills. Five of these individuals were considered to be nonverbal and four demonstrated minimal functional language. A reversal design was utilized, first providing interventions until consistency of response was seen, then a one-session withdrawal of the intervention, and finally a reintroduction of the intervention. Edgerton based her music therapy interventions on the Nordoff-Robbins Creative Music Therapy model, initially utilizing music to make contact with the clients and then allowing the client to respond to the facilitator. Although this study was designed with the dependent variable being the production of predetermined objectives by the client, the music therapy intervention, or independent variable, was improvisational and experience-oriented in nature. This provided an environment in

which growth and development could occur in the child. The results of Edgerton's study were that employing improvisational music therapy in this way significantly improved the children's communicative abilities.

Carpente and LaGasse (2015) present a case study about an 8-year-old girl, Mary, diagnosed with ASD. Mary exhibited both an under- and over-reactive sensory system, causing her to withdraw from over-stimulating or uncomfortable interactions as well as to seek sensory stimulation through constant motion. She was unable to engage in musical play in any communicative or related manner at the start of treatment. The music therapist improvised on a guitar based on Mary's affect, emotional state, and walking tempo. Mary eventually acknowledged this musical interaction with eye contact and a smile. Building on this awareness, the therapist continued to improvise vocally and instrumentally, eventually drawing Mary into relational, communicative musical play on a shared snare drum. Mary also engaged in this experience both vocally and instrumentally, demonstrating improved ability to engage in related and communicative musical play.

Re-Creation

Outcome-Oriented Music Therapy

Carpente and LaGasse (2015) present a case in which the music therapist used outcome-oriented re-creation with a 9-year-old boy with ASD to help him improve his focus and engagement, keep him engaged in a relational music therapy experience, and provide him with opportunities to explore a wide range of tempos and dynamics in his playing. The child, Eric, was challenged to discriminate between four distinct piano accompaniment patterns in the context of a song ("Fun for Four Drums") in order to play

the correct drum associated with each pattern. After eight sessions of engaging with this song, Eric showed improvement in his ability to play in a continuous and flowing manner, and his ability to play a wide range of tempos and dynamics on the drum.

Farlow (2018) used vocal re-creation with a 5-year-old girl with autism, Alexa, who did not engage in communicative speech or initiate any kind of communication with others. The predetermined goals of therapy were to improve Alexa's ability to engage in give-and-take interactions and to improve Alexa's ability to respond verbally to requests both with and without prompting. The music therapist used familiar and repetitive "question & answer" songs to teach Alexa how to both appropriately ask a question and wait for a response, and to respond in a relevant way when asked a question. Alexa showed improvements when engaging in conversational interactions through singing or speaking with others.

Composition

Outcome-Oriented Music Therapy

Jackson (2018) used multimedia composition with a 26-year-old man diagnosed with ASD named David who had been admitted to an inpatient psychiatric hospital. The predetermined goals of David's treatment were (a) to make eye contact with the music therapist at least three times per session, (b) to make at least one decision per session, and (c) to identify his personal feelings at least once per session. David participated in three 45-minute individual music therapy sessions during his treatment. He demonstrated limited cognitive abilities, limited communication, and an initial unwillingness to engage in music experiences. David demonstrated increased voluntary engagement when the music therapist offered the option of composing a recorded album of his favorite songs to

take home with him when he was discharged from the hospital. David used gestural cues such as a nod or a smile to indicate which songs he wanted to include in his album. He eventually decided on five songs. David demonstrated an ability to make eye contact with the music therapist, make decisions within a music experience, and identify and communicate his feelings with the music therapist.

Dr. Rosemary Fischer (1991) presented a case example of a 23-year-old man named Albert who was diagnosed with a developmental disability and ASD. He demonstrated good receptive and expressive language skills, but often exhibited inappropriate sexual or verbal behaviors and had a history of violence. Throughout his 11 months of music therapy sessions, the goals for Albert's treatment were to improve group interaction and socialization, and to minimize disruptive behaviors which negatively impacted his everyday functioning. All of the music therapy sessions were held in a common room of his group home that was open to the kitchen. Because of when the music therapy sessions took place, Albert could often smell the food that was being prepared in the kitchen. Discussions about food often arose, and Albert verbalized three of his favorite foods to the music therapist. In order for Albert to remember these three foods in the correct order, he drew a picture of each one. Albert then turned these drawings into original song-drawings, making lyrical lines about his favorite foods the first verse in his "Food Song." He continued drawing pictures of his favorite foods and adding verses to this song, for a total of three verses, until he felt it was complete. The music therapist then used this compositional technique to create the "Fear Song" and Albert's "Self-Song." Through engaging in these experiences, Albert reduced his disruptive verbal behaviors outside of the context of music therapy sessions.

Experience-Oriented Music Therapy

Carpente and LaGasse (2015) describe Derek, a 12-year-old boy with ASD, and the ways in which he participated in a compositional experience in order to organize and bridge his thoughts with those of the music therapist and conceptualize abstract and symbolic thought processes. In a session when Derek appeared to be agitated, the music therapist suggested that they begin in an original songwriting experience for Derek to express how he was feeling. The music therapist engaged Derek in dialogue and provided him with several options of musical characteristics for the song, such as harmonic accompaniment, dynamics, and tempo. The music therapist was able to uncover a common theme of loneliness and abandonment through the dialogue as Derek explained that a friend from his school had moved away. The music therapist aided Derek in organizing his thoughts into song lyrics, eventually creating an original song with two verses, a pre-chorus, and a chorus.

Receptive

Outcome-Oriented Music Therapy

There are several studies showing that incorporating music listening into treatment for ASD leads to more effective interventions and significantly improved treatment outcomes. Katagiri (2009) conducted a study with 12 individuals between 9 and 15 years old who demonstrated difficulties in decoding and encoding nonverbal expressions of emotions. The purpose was to determine the most effective way to teach children with autism the emotions of happiness, sadness, anger, and fear, using either verbal techniques, background music that reflected the given emotion, or songs that contained lyrics that taught about the given emotion. Participants were assigned to either

a control group incorporating nonmusical teaching techniques (no particular intervention or verbal techniques) or a treatment group incorporating musical teaching techniques (background music or singing songs). Katagiri found that the children who received treatment in which music was included responded positively to the music, demonstrating that the conditions of using background music and emotion-based song lyrics were more effective in teaching the four given emotions than the non-music-based treatment.

Similarly, Brownell (2002) found in a study with four boys between 6 and 9 years old diagnosed with ASD that utilizing music in the presentation of a social story yielded the same, if not greater, success in teaching the desired lesson about social interactions. A social story is “a short story that adheres to a specific format and guidelines to objectively describe a person, skill, event, concept, or social situation” (Gray, 1998, p. 171). The purpose of these stories is to provide information to individuals with ASD about social concepts that they may not understand on their own. Brownell’s study had the researchers either speak or sing a social story specific to each participant and track their progress over time. Results demonstrated that, although only sometimes statistically significant, the frequency of the undesired behaviors was less during the music condition. It is also important to note that the musical presentation of the social stories allowed for frequent spontaneous recall of the lyrics. One of the participants would often sing his story during unrelated experiences, demonstrating that he remembered and was able to recall the song that was taught to him. This study further shows that the use of music listening or music-based receptive methods may be equally, if not more, effective than non-music-based treatment.

Conclusion

Currently, there is a need for more peer-reviewed journal articles and case study compendia relating to music therapy in the treatment of ASD. Because of the somewhat recent emergence of music therapy as a viable treatment option, there is still much to be explored to determine the most effective ways to approach working with individuals with ASD in music therapy. Literature suggests that sometimes music therapists incorporate techniques from non-music-based treatment, such as social stories, into music therapy experiences to target related goals. These experiences would fall under the category of the outcome-oriented approach because specific goals and objectives are set for the client prior to treatment. Other times, music therapists use music therapy-indigenous practices, such as the Nordoff-Robbins model, which rely on music improvisation as experience-oriented practice.

The present research suggests that, although there are examples of music therapists using all four methods of music therapy, improvisation is implemented more often than the other methods when practicing music therapy with clients diagnosed with ASD. Music therapists may use improvisation through either the outcome- or experience-oriented approach, setting clear, observable goals for the client to reach through the interventions, or allowing the process of the improvisation experience to uncover and work toward areas of need for the client. I found examples of both outcome-oriented and experience-oriented music therapy used with the method of composition, but the recreative and receptive methods appeared as examples of the outcome-oriented approach exclusively. Due to the adaptable nature of improvisation, this method is arguably the most effective when aiming to improve an individual's social, communicative, and expressive abilities. In addition, instrumental improvisation allows clients to express

themselves without requiring the use of verbal language, a skill with which some individuals diagnosed with ASD struggle. Examples of integral practice were shown when a music therapist would first practice from an experience-oriented approach in order to discern potential goal areas for the client, and then would determine specific goal behaviors and transition to an outcome-orientation.

Literature in which outcome- and experience-orientations are explicitly labeled is scarce, with most sources never identifying the practice orientation employed by the therapist. This may be because of a lack of knowledge or education regarding this terminology and the concepts it represents.

It is important for music therapists to recognize and acknowledge their practice orientation in order for them to better understand how they can be as reflexive as possible to effectively and efficiently address the present needs of their clients. A therapist's practice orientation is the driving factor behind their clinical decision-making and the ways in which they interact and react to their client's actions. When a music therapist is comfortable with the concepts of outcome- and experience-oriented music therapy, they are able to continuously observe and evaluate their client's actions to determine the next steps to take in the session or over the course of treatment. In this way, the therapist can be as flexible as possible in order to provide the most meaningful and clinically beneficial music experiences for the client. In addition, the therapist is able to assess their own clinical practice, constantly evaluating if the practice orientation under which they are practicing is the most beneficial and effective for the client. Practicing this way will be conducive to efficient and effective treatment.

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