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Anxiety Symptoms, Childhood Autism and Improvisational Music Therapy: A Clinical Method

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Anxiety Symptoms, Childhood Autism and Improvisational Music Therapy: A Clinical

Method

Capstone Thesis

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Abstract

This capstone thesis explores the efficacy of improvisational music therapy in reducing symptoms of anxiety among children with autism spectrum disorder (ASD). Through a clinical review of the literature on the topic of anxiety symptoms, autism disorder and improvisational music therapy in conjunction with individual music therapy sessions with one student, which pertained one session of music therapy per week for a month with a client, diagnosed with autisms disorder. The participant was observed from his transition from class to music therapy session until the end of the day at school. The observations found from the study suggest that children who are diagnosed with autism and experience anxiety would benefit from improvisational music therapy.

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Introduction

Anxiety is one of the most common psychiatric disorders affecting people with autism. About 40 percent of youth – and up to half of adults – meet the clinical criteria of an anxiety disorder, such as social anxiety, phobia, panic disorder, or generalized anxiety, or obsessive-compulsive disorder (van Steensel & Heeman, 2017; van Steensel, Bögels, & Perrin, 2011; Cai, Richdale, Dissanayake, & Uljarević, 2018; White, Oswald, Ollendick, & Scahill, 2009; Buck et al., 2014; Lugnegård, Hallerbäck, & Gillberg, 2011; Croen et al., 2015). A critical factor that currently remains unanswered, given the heterogeneity of autism and the complexity of anxiety, is the reason why autistic individuals are more vulnerable to anxiety (Rodgers & Ofield, 2018).

Many of the conditions' features (avoidance, irritability, fears, abnormal sleep habits, etc.) associated with ASD overlap with symptoms seen in varying anxiety disorders (Kim, Szatmari, Bryson, Streiner, D. & Wilson, 2000); therefore differentiating between co-morbid anxiety and characteristics of ASD can be problematic (Tsai, 2006). Some of the most frequently reported anxiety disorders and symptoms seen in children with ASD are simple phobias, generalized anxiety disorder, separation anxiety disorder, obsessive-compulsive disorder, and social phobia (White, Oswald, Ollendick, & Scahill, 2009).

Gaining a context for anxiety with children living with autism is a necessary step to take in developing treatment. Even though the relationship between anxiety and ASD has only recently become a focus of research (Fodstad, Rojahn, & Matson, 2010), there

has been a known association between the two conditions since the original account of autism. Kanner (1943), in his original description of children with “classic” autism, noted that a number of them had substantial anxiety problems.

Music, like language, is one of the universal aspects of human existence (Rose, 2010). Music’s ageless influence and its uses are seen throughout history. Everyone has experienced music in some form, regardless of their nationality, age, or ethnicity. Even from ancient times, as evidenced by Paleolithic cave drawings and the remains of rudimentary flutes, it seems that music-making is a human capability that is fundamental to human culture (Anthony, 1992).

Ticker (2017) explains, music has primarily been proclaimed as an enjoyable tool in the past, but now it has been proven that its effects are much more than simple elevation of a person’s mood. Scientists are discovering more and more positive effects that music has on our cognition and physical health. As a result of this research, fields such as music therapy have been expanding and growing. Clinicians are using music in therapeutic settings to help those with brain damage or developmental disorders, especially in regard to children with Autism Spectrum Disorder. Music is very powerful, and its effects on brain plasticity, cognition, emotion, and physical health have important and valuable repercussions for the field of healthcare.

Reported benefits of music as a therapeutic intervention for individuals who have autism include the following (Cornhill, 2013; Simpson & Keen, 2011): Increased appropriate social behaviors, improved attention to tasks, increased vocalizations, verbalizations, gestures, and vocabulary comprehension, increased communication and social skills, enhanced body awareness and coordination, improved self-care skills and

reduced anxiety. Furthermore, studies have shown that individuals with ASD have normal or superior abilities with certain components of music processing, which makes music a potential intervention for this population (Molnar-Szakacs, 2009).

It is hoped that this study will contribute to the music therapy clinical practice by offering new clinical information about the use of improvisational music therapy with autistic children who experience anxiety. Exploring the experiences that arise when creating music in a therapeutic setting may provide music therapists with better information to implement the use of improvisation with children who struggle with symptoms of anxiety such as excessive worrying, feeling agitated, restlessness, fatigue, difficulty concentrating, irritability and avoiding social situations.

The goal of this study was aimed at reducing symptoms of anxiety during and after improvisational music therapy sessions with a client diagnosed with autism. This study details the process in which the participant was given the opportunity to make use of social engagement and expression of emotions through improvisational music making. The researcher employed a child-centered approach where the therapist used active, spontaneous music making and developed a relationship with the client throughout the process. Therapist anticipated to follow the child's focus of attention, behaviors and interests to promote strategies to recognize and manage symptoms of anxiety. The researcher also hoped to facilitate growth in other areas of need such as the child's social communicative skills, awareness and sense of self.

Literature Review

It is estimated that eighteen percent of the entire population in the United States has some form of anxiety disorder (Anxiety and Depression Association of America,

2016). Anxiety disorders can occur at any stage of life and they can range in severity from mild to debilitating. According to The Autism and Developmental Disabilities Monitoring (ADDM) Network, at 2014 about 1 in 59 children has been identified with autism spectrum disorder (ASD). Autism is reported to occur in all racial, ethnic, and socioeconomic groups and it is about 4 times more common among boys than among girls (Baio, 2018).

Anxiety is one of the most common psychiatric disorders affecting people with autism. Researchers at The University of Amsterdam reviewed 31 studies that focused on the presence of anxiety disorders in children under 18 years old with autism spectrum disorder (ASD). Upon review of these studies, researchers concluded that about 40% of children with ASD had at least one comorbid diagnosed anxiety disorder (van Steense, Bögels, & Perrin 2011). In addition to that, up to half of adults with autism meet the clinical criteria of an anxiety disorder, such as social anxiety, phobia, panic disorder, or generalized anxiety, or obsessive-compulsive disorder (van Steensel, & Heeman, 2017). By comparison, the prevalence of anxiety disorder among adults and adolescents in the United States is 19.1 and 31.9 percent. (U.S. National Institute of Mental Health, 2018).

According to Dubin, Lieberman-Betz & Lease (2015), it is not uncommon for children with autism to experience high levels of anxiety. For children with autism, anxiety can occur more frequently and can be very intense. Seemingly simple daily activities such as interacting with peers, riding in the car, taking public transportation and leaving the house can become increasingly anxiety provoking and difficult. There have been several studies that show varying results, but it is estimated that between 11% and 84% of people with autism also have an anxiety disorder. Reason for such a wide variety

of result has remained unknown, however there are some studies, which have explored why anxiety may occur in people with autism at a higher rate than for the general population. Using interviews with parents, de Bruin, Ferdinand, Meester, de Nijs, & Verheij (2007) examined the level of anxiety among children and adolescents with ASD and concluded that severe symptoms are highly prevalent in children with ASD. Parents were interviewed to assess DSM-III-R psychiatric disorders and symptoms in their children. In this study the Dutch version of the DISC-IV-P (Ferdinand & Van der Ende, 1998) was used to measure reported anxiety by parents in children (n=94). Results showed that 55% of children met criteria for an anxiety disorder.

There are many common behaviors seen in children with ASD that overlap with symptoms seen in varying anxiety disorders. For example, the obsessions and compulsions of Obsessive-Compulsive Disorder may look similar to repetitive and stereotyped behaviors in children with ASD. For this reason, there is speculation as to what psychologists should consider symptom overlap and what is a distinctly different disorder (van Steensel, Bögels, & Perrin, 2011). Other behaviors that are characteristic of both anxiety and autism include becoming over-stimulated, making little eye contact, not initiating playing with others, heavily dependent on schedules, self-injuring, outbursts of emotions, or becoming withdrawn. These behaviors may very well be present in socially anxious children, and may not necessarily be attributable to ASD.

Muris, Steernemen, Merckelbach, Holdrinet, and Meesters (1998) found that, in their sample of 15 children with AD and 29 with Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS), simple (or specific) phobia was the most common anxiety condition (63.3%) and panic disorder was the least frequent (9.1%). The

remaining diagnoses ranged from 11.4% (obsessive-compulsive disorder) to 45.5% (agoraphobia). There were no statistically significant differences between males and females with ASDs in the total number or type of symptoms experienced (Worley & Matson, 2012).

ASD is considered a complex neurodevelopmental disorder likely involving multiple brain systems. Functioning of specific components of the brain is different in people with autism to those with normal structures. Evidence from magnetic resonance (MR) imaging studies by Mosconi, Zwaigenbaum, & Piven (2006) suggests that brain volume enlargement is a characteristic feature of autism. Baron-Cohen et al. (2000) first proposed that dysfunction or damage of the amygdala should be at the root of social impairments in ASDs. The authors believed, "...the amygdala is one of several neural regions that are necessarily abnormal in autism" (Baron-Cohen et al., 2000, p. 1). Those with ASD are likely to have structural changes to the amygdala, which processes emotions, especially anxiety. Further, diagnostic criteria for ASD are hypersensitivity to specific sensory experiences. For example, loud noises, such as someone shouting can be perceived disturbingly annoying and painful. Such experiences may provoke anxiety and stress. Children with autism may develop anxiety because of a limited capacity to cope with anxious reactions combined with a possible fear that others may be criticizing them for their actions or struggles in social situations.

Further information showing the compounding issues between the social, emotional, and neurological intersections of this disorder are illuminated in the Diagnostic and Statistical Manual of Mental Disorders (5th ed.). It states that children with autism struggle with social communication and social interaction across multiple

contexts. They have a difficult time interpreting social skills such as eye contact, conversation, and reading body language or expressions, which can lead to anxiety due to overthinking and overanalyzing.

Comorbid Anxiety and Autism

There is considerable evidence that children and adolescents with autistic spectrum disorders (ASD) are at increased risk of anxiety and anxiety disorders. According to Nadeau et al (2011), Up to 80% of children with ASDs experience clinically significant anxiety, with high comorbidity rates for social phobia, generalized anxiety disorder (GAD), obsessive–compulsive disorder (OCD) and separation anxiety disorder (SAD). Anxiety comorbidity is associated with greater ASD symptom severity (Bellini, 2004). For instance, patients with ASDs and comorbid anxiety are at increased risk for displaying externalizing behavior problems, social avoidance (Davis et al, 2011), difficulties establishing/maintaining peer relationships, sleep problems and disruptions in family functioning (Higgins, Bailey, & Pearce, 2015).

Although there is a lot of information available on comorbid anxiety and autism, it is less clear which of the specific DSM-V anxiety disorders occur most among this population and this remains an emerging research area. Van Steensel, Bögels, & Perrin (2011), used meta-analytic techniques to help clarify this issue. A systematic review of the literature identified 31 studies involving 2,121 young people (aged <18 years) with ASD, and where the presence of anxiety disorder was assessed using standardized questionnaires or diagnostic interviews. According to this study, specific phobia was most common at nearly 30%, followed by obsessive–compulsive disorder in 17%, social anxiety disorder and agoraphobia in nearly 17%, generalized anxiety disorder in 15%,

separation anxiety disorder in nearly 9%, and panic disorder in nearly 2%. By way of comparison, anxiety disorders in typically developing children are estimated to occur in 2.2–27% (Costello et al. 2005). In addition, with the exception of panic disorder, the rates of the specific anxiety disorders observed in children with an autistic spectrum disorder are more than two times higher than in typically developing children (Costello et al. 2005), and higher than found in children seeking treatment for ADHD (Gau et al. 2010) and learning difficulties (Dekker and Koot 2003).

Music Therapy as Treatment for Autism

Howlin (1998) stated, the fact that some children do show substantial improvements, as they grow older has led to claims that particular treatments can significantly affect outcome. Among such interventions are “Holding” therapy (Richer & Zappella, 1989; Welch, 1988); scotopic sensitivity training, which involves the wearing of specialist spectacles (Irlen, 1995); auditory integration, which focuses on desensitization to sounds of particular frequencies (Rimland & Edelson, 1994, 1995); as well as music therapy (Trevarthen, Aitken, Papoudi, & Roberts, 1997). Promising advances in the treatment of autism have been occurring in the field of music therapy.

Music therapy has become a well-established method for working with people on the autism spectrum since individuals with autism often show interest in, and a positive response to, listening, playing, and producing music (Wigram & Gold, 2006). According to Allen, Hill, & Heaton, (2009), those with ASD benefit from music in many ways, including helping to change their mood, reducing feelings of depression, having a therapeutic healing effect, and providing feelings of belonging and social connectedness. Music offers structure and predictability, which those with ASD often prefer.

Outcomes from the use of music as a therapeutic intervention with children along the autism spectrum disorder included reducing anxiety (De Vries, Beck, Stacey, Winslow, & Meines, 2015). The non-threatening and acquiescent nature of music helps to decrease anxiety in direct interaction with others and improve the social skills of children with ASD (Eren, 2015). Music therapy is the use of sounds and music within an evolving relationship between client and therapist to support and encourage physical, mental, social and emotional wellbeing (Bunt & Stige, 2014).

Improvisational Music Therapy and Autism

Improvisational music therapy has long been noted for its efficacy in engaging autistic children at their level and interest, and helping them to develop spontaneous self-expression, emotional communication and social interaction (Kim, Wigram, & Gold, 2008). There are a few major therapeutic techniques in improvisation music therapy. Wigram (2004) introduced a variety of improvisational techniques including imitating, reflecting, rhythmic grounding, dialoguing and accompanying. According to Bruscia (1998), clinical goals that can be achieved through improvisation are as follows: Establish a nonverbal channel of communication, and a bridge to verbal communication, provide a fulfilling means of self-expression and identity formation, explore various aspects of self in relation to others, develop the capacity for interpersonal intimacy, develop group skills, develop creativity, expressive freedom, and playfulness with various degrees of structure, Stimulate and develop the senses, play, on the spot, with a decisiveness that invites clarity of intention and develop perceptual and cognitive skills.

Geretsegger, Carpenente, Elephant, Kim, & Gold (2015) research study aimed at developing treatment guidelines based on the most important common characteristics of

improvisational music therapy with children affected by ASD. After initial development of treatment principle items, a survey among music therapy professionals in 10 countries and focus group workshops with experienced clinicians in three countries were conducted to evaluate the items and formulate revised treatment guidelines. A treatment fidelity assessment tool was subsequently used to rate therapy excerpts to check usability. Survey findings and feedback from the focus groups corroborated most of the initial principles for IMT in the context of children with ASD. Unique and essential principles include facilitating musical and emotional attunement, musically scaffolding the flow of interaction and tapping into the shared history of musical interaction between child and therapist. In conclusion, these treatment guidelines may be applied in diverse theoretical models in music therapy.

Improvisational Music Therapy with Anxiety

The current body of knowledge suggests that it is important to consider frameworks and techniques that can be structured enough to contain, as well as flexible enough to align with clients' needs. The framework provided by Wigram (2004, 2018) is a good fit (Zarate, 2016; Pothoulaki, MacDonald, & Flowers, 2012).

Clinical Applications of Music Therapy with Anxiety

Although there are an increasing number of qualitative and quantitative studies investigating the benefits of music therapy interventions and anxiety, only few studies have been conducted to explore the efficacy of improvisational music therapy on reducing symptoms of anxiety.

Zarate (2016) examined individual responses to music psychotherapy and vocal psychotherapy to evaluate effects on anxiety symptoms. The study employed a multiple

single subject design (SSD) with convenience sample of 16 participants for 12 consecutive weeks in on-hour individual weekly music therapy sessions. The Beck Anxiety Inventory (BAI) was administered every week. The BAI items with highest baseline scores were: unable to relax, nervous, heart pounding, terrified or afraid, and fear of the worst happening. Results indicated that after each music therapy session, participants' anxiety symptoms significantly decreased by 6 week of treatment. In addition to that, decreased symptoms from initial baseline to end of treatment was recorded as well.

Pothoulaki, MacDonald, & Flowers (2012) conducted a study to explore the psychological process involved in an improvisational music therapy program for cancer patients. Nine individuals participated in an improvisational music therapy program and semi-structured interviews. Interpretative Phenomenological Analysis (IPA) was used as a theoretical and methodological framework for the analysis of the interviews. The result revealed a variety of social and psychological benefits related to the experience of music therapy such as stress relief, relaxation, feelings of enhanced communication through music.

Method

The intent of this study was to gain knowledge through practice-based data collection surrounding the use of improvisation during individual music therapy sessions with a client who has been diagnosed with autism and shows symptoms of anxiety in an alternative school.

Research Method

This study explored improvisational music therapy as a method to work with children with autism who experience anxiety, but who have not received a specific anxiety-related diagnosis yet demonstrate and report experiencing some level of anxiety symptoms during the school day. The study entailed four 30-minute weekly individual sessions in a school setting with an 11 - year old male student diagnosed with autism and intellectual disability. Each session aimed to engage the client using clinical improvisation for 15 minutes. The goal of the treatment was twofold: to help him regulate emotions to explore if any anxiety symptoms could be identified and managed during the school day for the rest of the school day.

The self - designed checklist was used for the researcher to observe the method's impact on anxiety symptoms before and after the each session. It allowed the researcher to identify themes that arose from the improvisation method for the child while engaging in the process.

Research Question

The research aimed to delve into the therapeutic process of improvisation music therapy for children with autism who experience symptoms of anxiety. Does engaging in music improvisation help a child to control feeling nervous and anxious later during the school day.

Participant

Participant was an 11-year-old male in an alternative school. He has expressed his love for art, music and dance. Music therapy is one of the activities that he looks forward to and participates in all sessions.

Students referred to this school from member and nonmember districts due to students being unable to make effective progress in their current school setting or for assessment purposes. Students may present with significant social, emotional and learning disabilities and behavioral issues and may have dual diagnoses of ADD/ADHD, PTSD, PDD, ODD. The goal of this full day program is to assist children in developing healthy relationships, learn to self regulate their emotions, enhance their communication skills and meet their academic potential. Student shows signs of anxiety including difficulty concentrating or focusing on things, inability to relax or enjoy quiet time Feeling tense, no tolerance for uncertainty, feeling jumpy, on edge, or restless and persistent irritability.

Data Collection

Data were collected from observations throughout the four sessions using a self-designed checklist for this researcher to use as a guide for monitoring the impact of the method in terms of musical impact and clinical improvisation techniques. The checklist was influenced from a scale designed by Spitzer, Kroenke, Williams, Low (2006). The checklist assisted the researcher in observing the method with regards to specific symptoms:

(a) feeling nervous, anxious, or on edge, (b) not being able to stop or control worrying, (c) worrying too much about different things, (d) trouble relaxing, (e) being restless, (f) becoming easily annoyed or irritable, (g) feeling afraid as if something awful might happen.

The method's impact was monitored as related to how it impacted client's participation and behavior from before the child attended the music therapy session until two hours after he went back to the class.

Procedure

The purpose of this study was to explore how engaging in improvisational music therapy would help the client to control his anxiety and irritability. Each session began with checking-in and then choosing and setting up instruments for improvisation and setting them however the student preferred. The process was explained clearly and in the same way at the beginning of every session. The directions for improvisation were given. Permission to record music was obtained by school administration. Client was informed that the music would be recorded. A visual timer was set for 15 minutes. After improvisation had finished, the process was discussed with the client. Listening back to segments of the recorded music was also part of the method. For the closing activity the client sang his preferred song on the Smule app, which is a karaoke app, or he sang using a lyric sheet.

The therapist utilized the theoretical model motivation understanding sensitivity integration containment (MUSIC) (Wigram, 2004, p.42) to conduct the music improvisation section of each session. The therapist often had to allow herself to be open to all the transferred feelings of the client and to contain those feelings. The music used in improvisation provided a multilayered container that allowed the client a space and context within which he could work with a very wide range of feelings and needs.

Therapy methods were used intentionally and intuitively when the researcher analyzed and explored what was happening during the free-flowing improvisation period. The therapist used an adaptive and flexible response model to the way the client created music. Certain amount of planning based on the client's assessment

and IEP, an estimation of client's needs and goals were considered; however, the therapist made intuitive judgments within the music-making sessions. Some of the techniques that the therapist used throughout the improvisations are explained in the next section.

Improvisation Techniques

Mirroring or imitating are frequently used as empathic techniques. This technique is often used by the therapist to give a message to the client that they are meeting them exactly at their level. The technique of mirroring is often referred to as 'synchronizing – doing what the client is doing at the same time'. Wigram (2004) describes this technique as, "Doing exactly what the client is doing musically, expressively and through body language at the same time as the client is doing it. The client will then see his or her own behavior in the therapist's behavior." Another empathic method in improvisation music therapy is matching. It is a typical starting point to work with a client musically. Matching is a therapist's response to the client confirms and validates their playing and their emotional expression. To achieve a 'match' in music therapy means that therapist's music is not identical to the client, but it is the same in style and quality.

Empathic improvisation and reflection is difficult to illustrate in a book or a cd but in practice, it means taking into account the client's body posture, facial expression, attitude on this particular session and previous knowledge of their personality and characteristics, and playing something to them that reflects a musical interpretation of their own way of being at the moment. For example, if a client comes into the room agitated and upset, this mood can be easily incorporated

into an empathic improvisation. Other useful therapeutic methods are grounding, holding and containing. These techniques are extremely helpful specifically when a client appears or sounds to be unconnected to the music. Wigram (2004) defines the process of grounding as, “creating a stable, containing music that can act as an ‘anchor’ to the client’s music” (p.91).

Dialoguing in music is a process where therapist and client communicate through their musical play. According to Wigram (2014), there are two main forms of dialoguing. Turn taking dialogues and continuous ‘free-floating’ dialogues. One of the most useful and supportive techniques is accompanying. Wigram (2014) defines accompanying as, “ Providing a rhythmic, harmonic or melodic accompaniment to the client’s music that lies dynamically underneath the client’s music, giving them a role as a soloist” (p.106). Accompanying is a frequently used method for joining in with a client’s music where the message one is giving is of support and empathy.

Data Analysis

The researcher documented if any improvisational techniques of the method impacted client’s behavior using a self-designed checklist. The checklists of before-session and end-of-the-day observations were analyzed using practice-based and qualitative data analysis by coding the themes of behavior patterns derived from weekly music therapy sessions. The data were organized into themes based on the client’s behaviors in this study. The researcher also integrated the teacher and teacher’s assistants’ observations to compare with her own observations for any similarities or differences.

Sample checklist is documented in Appendix.

Results

Overview

The client's behaviors during and after each music therapy session were used to investigate the levels of symptoms of anxiety throughout the day and the client's reaction to improvisation. According to the client's Individual Education Plan (IEP) and as reported by staff at school, the client always looked forward to the sessions and referred to his music therapy sessions as his favorite time at school. The client was fully engaged in music making every session and followed direction; however, 50% of times before the ending activity he asked to end the session earlier and go back to his class. Client was satisfied by the music he made and at times suggested ideas to make the music sound better.

The treatment goals focused on decreasing anxiety symptoms and increasing coping management of such symptoms during and after the music therapy sessions. Reflection on each session by journaling, collecting data by observing the client's reactions and behaviors from the checklist, this researcher focused on two major themes that were prevalent throughout the session, and the rest of the schooldays.

Areas of Impact from the Method

Three major themes emerged from the method. Those themes were, Focus; Making Connections; and Impulse Control. Specific anxiety symptoms were apparently diminished or negated relating to these themes. Specific clinical improvisation techniques were found to be linked to the theme and impact on the symptom. See table 1 below:

Focus

Table 1. Symptom of Restlessness and Functional Area Impacted of Focus

Non-music observations	Music observations
Full attention	Joined in the music making
Stayed on task	Matched tempo
Did not rush	Took time to listen

According to the chart, client’s highest symptom of anxiety was restlessness before each session began and he demonstrated a noticeable amount of improvement after each session. Most of the times at school, the client is extremely agitated and restless which results in him not being able to sit still and focus on tasks, but surprisingly during every session the client was musically engaged and paid full attention. The client took the time to listen to the music therapist playing the piano and joined in the music making process. In several instances client demonstrated focus by matching the tempo. The therapist started matching her tempo to the client’s music. When the client noticed that he started playfully matching his tempo with the therapist, made eye contact and laughed.

Making Connections

Table 2. Symptom of being Disconnected to Surroundings, Struggling with Communication, Emotional Disconnection and Functional Area Impacted of Making Connections

Non-music observations	Music observations
------------------------	--------------------

Initiated	Copying melody or rhythm
Making eye contact	Making musical dialogues
Smiling and displaying happiness	Repeating intervals

The client is identified with being disconnected to his surrounding regularly. In addition, the client has poor social skills; therefore he struggles to communicate with his peers and teachers. These struggles often lead to emotional disconnection and social isolation. Throughout music therapy sessions, the client was able to use music as a tool to communicate and express himself. The client frequently copied melodies and rhythm. At first seemed like he was caught by surprise that a dialogue was happening but after a while he spontaneously used the technique and looked at the therapist for a reaction. After each session the client seemed more confident in making music and making connections throughout music. The client made connections with the therapist by making musical dialogues and repeating intervals.

Impulse Control

Table 3. Symptom of Excessive Worry, Nervousness and Functional Area Impacted of Impulse Control

Non-music observations	Music observations
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Completely engaged	Following musical cues
Seemed more relaxed	Taking time to figure out difficult parts
Remaining patient	Did not stop playing music

As the client's therapist, this researcher noticed how the method seemed to have an improvement on client's impulse control and his ability to control excessive worrying about different things during and after the music therapy sessions. When engaged in music making, client did not show signs of worry or nervousness at all. The client seemed completely engaged, took his time to improvise and did not rush through the sessions. After music therapy, as reported by staff, the client seemed more relaxed and was able to control worrying.

Themes were derived by examining symptoms of GAD along with the student's behavior patterns from the music therapy session until the end of the day as well as how much the student was involved in the process and asked to go back to his classroom.

Discussion

At the beginning of the process, the client with ASD was unsure about getting involved with improvisation. He exhibited some hesitation; however he seemed really interested and spent time to observe what was happening. The recordings demonstrated that each session was a step forward for him. The first objective was for him to take risk and start making music freely. With the structured interventions described above, after a while the client started to show openness and involvement. During the music therapy

sessions, some improvements were observed in areas such as eye contact, listening and self-expression.

The music therapy sessions provided an opportunity for the client with ASD to attempt social interactions in a safe environment where he would not be judged because of his incorrect actions. Past research, such as Eren (2015) has found that during music therapy interventions, clients have the chance to change their ways of interacting. He believed the musical environment gives them the chance to experience real life situations in an indirect, safe and nonjudgmental setting.

Children with ASD often use self-stimulating behaviors to compensate for a lack of stimuli or oversensitive reaction to stimuli, and include behaviors such as rocking, using pressure, and chewing on objects (Finnigan & Starr, 2010). As an intervention, multiple studies found that auditory stimulation in the form of music is preferred by individuals with autism and that these individuals tended to engage with music for longer time periods when compared to typical individuals their own age (Simpson & Keen, 2011). The client engaged in improvisation for long period of time without taking breaks. Comparing his behavior in every day activities in school and music therapy sessions, the client spent more time on task and was more focused without taking breaks. Research supports the use of music to increase attention to task, direction following, and task completion (Dieringer and Porretta, 2013).

Key clinical improvisation findings were specific relationships to certain techniques and certain symptoms. For example, restlessness was a major area of impact by focus. The client paid full attention, stayed on task and did not rush 100% of times during improvisation. Matching the tempo was prevalently used in this area. Client took

his time to observe and listen. When he felt comfortable he joined in and started making music without taking breaks.

Making connections impacted symptom of being disconnected to surroundings, struggling with communication and emotional disconnection area. The client initiated, made eye contact and displayed happiness throughout music making. Copying melody or rhythm, making musical dialogues and repeating intervals was used prevalently in this area. Lastly, symptom of worry and nervousness was impacted by impulse control. The client seemed completely engaged, seemed more relaxed, remained patient during improvisation. He followed musical cues, took time to figure out difficult parts and did not quit or stop playing music.

Limitations

The limitations of this study include the length of the study, change of medication throughout the study and lack of information about how the client day went on prior to the music therapy session.

The design of the study led to limitations due to the length of the study, which only included four music therapy sessions. A study utilizing improvisational music therapy need more time to accurately monitor how the process is affecting the client. Also, the client needs more time to get used to the routine of each session. The participant in this study, was still in the beginning of understanding the process. A longer duration could have led to more comprehensive data and a possible shift in behavior during and after the music therapy sessions.

Second limitation was changes in medicine prescription. The researcher was informed about the client's change of medication in the middle of the study due to temper tantrums and inappropriate behaviors. Teacher observed increased behavior improvement

after taking new prescription. While under new medication, the client displayed slight reduction in response, seemed much more relaxed and calm; which was part of the goal of this study. This situation made it more difficult for the researcher to identify the affect of improvisational music therapy sessions.

The final limitation of this research study was lack of information about the client's interaction with his family and peers; schedule prior to school at home and the bus ride to school. Prizant, Schuler, Wetherby, & Rydell (1997) explained when working with children with ASD, there are specific circumstances that need to be addressed. Children with ASD often perceive their environment as chaotic and confusing therefore require routine and predictability of interactions and surroundings.

Even very small or slight disruptions to a routine can cause a child diagnosed with autism to feel distress and confusion. Since it is very important that the child diagnosed with ASD has order, structure, and predictability in his surroundings and environment, this information could play an important role in the outcome of the research. Given the limitations the study yielded, this may be a starting point for future research on using improvisational music therapy with children diagnosed with ASD who experience anxiety symptoms.

Recommendations

As this study was based on a small sample, drawing any generalizable conclusion is premature. The limitations of this study should be considered in interpreting the results of the study. In planning future studies, sample size, length of the study, change of medication and the client's daily interactions should be considered and calculated. It was not possible for the researcher to consider these conditions in this design. However,

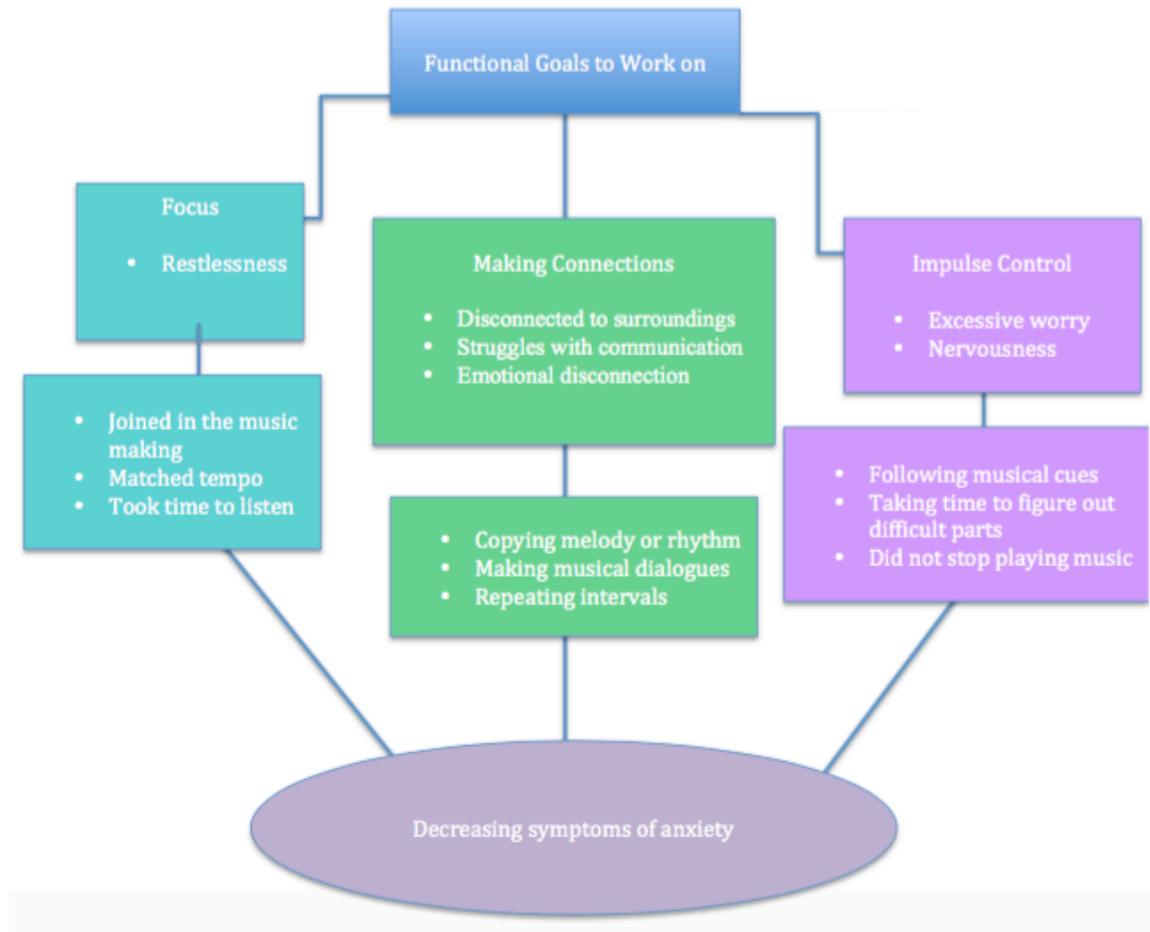
further researches with similar client and with similar method need to confirm the positive results presented here.

Conclusion

The findings from this study highlighted the benefits and complications of improvisational music therapy to assist children who experience anxiety and struggle with unstoppable worrying. The use of music therapy interventions have always been used as a treatment method with children diagnosed with ASD; however, improvisational music therapy has not been considered regularly for decreasing symptoms of anxiety among children with autism who experience restlessness and distress.

In addition to effectiveness of improvisational music therapy on decreasing symptoms of anxiety, the social motivational aspect of musical interaction between the child and the therapist that occurred through improvisational music therapy sessions was magnificent.

Transferring Findings into a Clinical Model



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APPENDIX

Likert Scale for Monitoring Generalized Anxiety Symptoms

Question #1	<div style="background-color: #4a86e8; color: white; padding: 5px; margin-bottom: 5px;">Feeling nervous, anxious, or on edge</div> <div style="display: flex; justify-content: space-around; width: 100%;"> 123456789 </div>
Question #2	<div style="background-color: #4a86e8; color: white; padding: 5px; margin-bottom: 5px;">Not being able to stop or control worrying</div> <div style="display: flex; justify-content: space-around; width: 100%;"> 123456789 </div>
Question #3	<div style="background-color: #4a86e8; color: white; padding: 5px; margin-bottom: 5px;">Worrying too much about different things</div> <div style="display: flex; justify-content: space-around; width: 100%;"> 123456789 </div>
Question #4	<div style="background-color: #4a86e8; color: white; padding: 5px; margin-bottom: 5px;">Trouble relaxing</div> <div style="display: flex; justify-content: space-around; width: 100%;"> 123456789 </div>
Question #5	<div style="background-color: #4a86e8; color: white; padding: 5px; margin-bottom: 5px;">Being so restless that it's hard to sit still</div> <div style="display: flex; justify-content: space-around; width: 100%;"> 123456789 </div>
Question #6	<div style="background-color: #4a86e8; color: white; padding: 5px; margin-bottom: 5px;">Becoming easily annoyed or irritable</div> <div style="display: flex; justify-content: space-around; width: 100%;"> 123456789 </div>
Question #7	<div style="background-color: #4a86e8; color: white; padding: 5px; margin-bottom: 5px;">Feeling afraid as if something awful might happen</div> <div style="display: flex; justify-content: space-around; width: 100%;"> 123456789 </div>

Designed based on Spitzer RL, Kroenke K, Williams JBW, Lowe B. A brief measure for assessing generalized anxiety disorder. Arch Intern Med. 2006;166:1092-1097.

