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Procedia - Social and Behavioral Sciences 197 (2015) 207 – 213

Procedia
Social and Behavioral Sciences

7th World Conference on Educational Sciences, (WCES-2015), 05-07 February 2015, Novotel Athens Convention Center, Athens, Greece

The Use of Music Interventions to Improve Social Skills in Adolescents with Autism Spectrum Disorders in Integrated Group Music Therapy Sessions

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Abstract

The lack of social interest is one of the core features of individuals with Autism Spectrum Disorders (ASD). Individuals with ASD suffer direct and indirect consequences related to their social interaction deficits. The effect of these deficits often increases during adolescence. In this period, adolescents with ASD start to report their desire for peer social interaction, and may also experience more loneliness than their typically developing peers. It is especially vital for adolescents with ASD to have emotionally non-threatening social experiences. The non-threatening and acquiescent nature of music helps to decrease the anxiety experienced during direct interaction with others and improve the social skills of adolescents with ASD. In this study,video recordings of music therapy activities carried out with a group of adolescents with ASD are analyzed, and the outcomes are presented. While activities such as singing, rhythmic games, creative movement and dance were performed; adolescents were asked to work in dyads, in small groups and in a large group. Adolescents initiated and sustained social interactions during music sessions and less resistance was observed while interacting with their peers.

Peer-review under responsibility of Academic World Education and Research Center.

Keywords: Music Therapy, Social Skills, Autism Spectrum Disorder.

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Peer-review under responsibility of Academic World Education and Research Center.
doi:10.1016/j.sbspro.2015.07.125

1. Introduction

Autism Spectrum Disorder (ASD) is described as a neurodevelopmental disorder affecting brain chemistry and/or brain structure (Harvard Medical School, 1997) and characterized by persistent deficit in social communication and social interaction across multiple contexts, and restricted repetitive patterns of behavior, interests or, activities. Accordingly, deficits in social-emotional reciprocity, deficits in communicative behaviors used for social interaction, and deficits in developing, maintaining, and understanding relationships are listed as main problematic areas of ASD (American Psychiatric Association, 2013). Individuals with ASD may experience social, communication and interaction issues in their daily lives more frequently compared to their normally developing peers. Therefore it is very important to endeavor to find better interventions to improve social communication and interaction skills in individual with ASD.

2. Social Skills Deficits in Adolescents with ASD

Social interaction refers to establishing and maintaining positive social relations with others, including making appropriate social initiations and appropriately responding to the social initiations of others (Simpson, Smith Myles, Sasso, & Kamps, 1991). Individuals with ASD exhibit difficulties in social communication and interaction. The social deficits of individuals with ASD are varied and involve speech, linguistic conventions, and interpersonal interactions as well as impairments in social pragmatics, problems in understanding and expressing emotions and difficulty in interpreting nonliteral language such as sarcasm and metaphor (Williams White, Keonig & Scahill, 2006).

Social skills are required for relationships, independence, and vocation (LaGasse, 2014) and important for successful functioning in all aspects of life at home, school, and work (Lovaas, 1987; McEvoy & Odom, 1987). Although individuals with ASD may attempt to initiate an interaction, this interaction occurs mostly for the purpose of meeting their needs or wants (Scheuermann & Webber, 2002). Since bilateral contribution is needed in social interaction, this type of interaction attempt cannot be considered authentically social. Individuals with ASD frequently show social deficits such as inadequate nonverbal behaviors including eye gaze, gestures, body postures, and facial expressions; lack of social-emotional reciprocity; impairment in expression of pleasure in the happiness of others, and absence of empathy; limited interaction with peers, and lack of interest in social interaction; deficiency in joint attention which is the primary point for socialization, and an absence of symbolic and imaginative play activities (Hall, 2009; Howlin, 1986; Stone & Lemanek, 1990).

Social skill deficits do not remit with development. Indeed, impairment and distress may increase as children approach adolescence because the social milieu becomes more complex and the child becomes more aware of their social disability (Schopler & Mesibov, 1983; Tamtam, 2003). However, researchers have reported that access to integrated and less restricted environments and observing peer interactions of typical children provides unique social learning opportunities for individuals with disabilities (Gaylord-Ross & Peck, 1988; Gonzalez-Lopez & Kamps, 1997; Hops, Walker, & Greenwood, 1988; McEvoy & Odom, 1987). Furthermore, individuals who exhibit better social skills are more likely to be both accepted in and benefit from integrated settings in school and the community, are more likely to live in a higher level of independence, and are more likely to work in more integrated settings (Scheuermann & Webber, 2002).

In integrated settings, improving socialization outcomes for individuals with ASD also requires not only structured interventions but also carefully designed opportunities to interact in meaningful context with nondisabled peers (Scheuermann & Webber, 2002). Therefore, choosing an appropriate intervention and designing it according to needs of the integrated group becomes important. While choosing and designing an intervention, the pre-existing strengths of the individuals with ASD can be used to further develop the impaired areas.

3. Music Therapy Interventions to Improve Social Skills

As is mentioned above, deficits regarding joint attention, eye gaze, over selectivity of stimuli, expressing and understanding affect, reading facial expressions and imitation are often seen in Autism Spectrum Disorder. Even though individuals with ASD have deficits in social skills; it should not be forgotten that they may have other areas

where they function similar to typical peers or possibly even exceed the skills of peers in subjects such as music, math, or reading (Hall, 2009). There is substantial research which shows that individuals with ASD have tendencies towad music (Brown, 1994; Mottron, Peretz, & Ménard, 2000; Thaut, 1987, 1988). Therefore, music interventions can be used to provide an appropriate environment and thus enhance the social communication and interaction skills in adolescents with ASD. According to Alvin and Warwick (1992) music can also be used as an integrating force, because it involves in one experience mental, emotional, physical and even social factors, which affects the child directly at his own level of intellectual and emotional tolerance.

The cognitive pathology which affects the individuals with ASD seems to produce more than an intellectual blockage. It brings about an inability to relate emotionally and socially, or to become part of the environment (Alvin & Warwick, 1992). Music can temporarily by-pass the cognitive process and reach the emotional and personality disturbance of an individual with ASD. It can also be used to circumvent the verbal language issue -that is one of the requirements of social interaction and communication- and satisfy the expressive needs of an individual with ASD by providing him/her a non-verbal self-expression opportunity. Music can help the individual with ASD grow awareness of both human and musical relationships. For instance, an individual with ASD can initiate an engagement with an instrument before he/she initiates an engagement between him/her and the therapist. Music also can be a brief harbor of safety in his/her difficult journey through life.

Music interventions can be utilized to provide adolescents with ASD multi- and inter-disciplinary learning opportunities in a safe, accepting setting. Adolescence is a period of life in which typically developing youth use sarcastic language and attitudes. Since adolescents with ASD have difficulties in understanding and expressing emotions, sarcasm, and metaphor, they suffer direct and indirect consequences related to these social interaction deficits (Bauminger & Kasari, 2000), and the adolescence years may be more difficult than any other time in their lives. If it is not managed well, these deficits may cause peer rejection and social isolation thereby leading to anxiety, aggression and problematic behaviors. Therefore the intervention that is chosen becomes critical.

The non-threatening and acquiescent nature of music helps to decrease anxiety in direct interaction with others and improve the social skills of adolescents with ASD. Music interventions can be utilized to enhance social skills; by use of developmentally appropriate materials and activities, including nondisabled peers in the group, and embedding educational experiences into ongoing activities that they can enjoy and learn from at the same time (Hall, 2009). Music interventions can be a starting point for individuals with ASD to trust people around them, a place where they can feel nonjudgmental friendship, and a group where they can enjoy being themselves. Thus they can learn how to cope with issues they encounter in the outside world.

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, 1996). From a social and communication perspective, music therapy is basically trying to make contact with another human being through music. We can observe how clients use the music and how problems may get in the way of interactive communication (Bunt, 1996). The literature demonstrates that s variety of the needs of individuals with ASD can be improved with music therapy treatment such as increasing engagement behavior, decreasing autistic-like behavior, improving emotional understanding, increasing emotional engagement and social skills including joint attention, social greeting routines, and communication skills (LaGasse, 2014).

Music therapy encompasses elements of a “meaningful and flexible treatment” modality, as music experiences are inherently structured, yet creative (LaGasse, 2014) and it can be performed in various forms and settings. Music therapy interventions vary depending on the client’s goal, strengths, weaknesses, and setting. Music therapy is classified as individual (one-to-one) music therapy or group music therapy depending on the number of people (Stropel & Huppman, 1997). For instance, a music therapist may decide to work in an individual music therapy setting with an individual with ASD who has severe issues in social interaction and communication. In one-to-one music therapy, the individual with ASD can get his/her first interaction with an instrument; at the next level he/she can move on from the solo instrument to a duet with the therapist. After that he/she can enjoy being in a group setting where he/she can generalize the social interaction and communication skills he experienced in individual music therapy setting. It should be remembered that this process may last weeks or months depending on the individual.

For social interaction and communication development, group music therapy is considered a setting which may give a better and more natural experience to individuals with ASD which is closer to the real world than one-to-one music therapy. Group therapy requires less detailed planning compared to individual therapy. Unlike a detailed and personalized plan, the therapist organizes a session addressing group members with similar requirements (Hanser, 1999). There are research results which show music therapy interventions improve social behaviors within a group therapy setting (LaGasse, 2014).

The purpose of this study was to recommend music therapy interventions that can be used with adolescents with ASD and to identify improvements in social interaction and communication skills in the integrated group music therapy sessions.

4. Integrated Group Music Therapy Interventions

4.1. Participants

The group includes 6 adolescents with ASD, 2 special education specialists, 1 student assistant, and the music therapist. The adolescents with ASD included 3 girls and 3 boys between the ages of 13 to 18. They were having individual special education 2 times a week in a private special education and rehabilitation center addition to their mainstreamed classes in a regular state school setting. They participated in music therapy sessions voluntarily therefore they were willing to be active participants. The 2 special education specialists and the student assistant were already working with them since a year.

The researcher of this study was assigned as the music therapist at all sessions. The music therapist was also a member of the staff team and came to the center for individual and group music therapy sessions twice a week. In the classroom there was a cameraman besides the group to shoot the music therapy sessions. Consent papers were signed by parents for attendance of their children to the music therapy sessions and for the shootings.

4.2. Interventions

Some music therapy activities were planned to improve social interaction and the communication skills of the adolescents with ASD. The interventions occurred 2 times a month for 90 minutes and lasted 4 months for a total of 8 sessions. All music therapy sessions were videotaped. After the interventions, the video recordings were analyzed using a qualitative descriptive analysis method. Qualitative research methods rely on linguistic rather than numerical data, and employ meaning-based rather than statistical forms of data analysis. Qualitative research methods emphasis on understanding phenomena in their own right, open, explanatory research questions, unlimited, emergent description options, use of special strategies for enhancing the credibility of design and analysis, and definition of success condition in terms of discovering something new (Eliot & Timulak, 2005). After analysis, the improvements in social interaction and communication behaviors of individuals with ASD in an integrated group music therapy setting were reported. The planned music therapy interventions included activities such as *greeting/name games*; *sharing individual ideas after any subject we experienced*; *playing pair games* such as mirroring each other, finger/hand games; *joint activities* in group cohesion such as carrying a stone in a circle with the rhythm they listen, and listening each other's creative solutions; *creativity activities* through developing a core idea from beginning to end, and *improvisation activities* such as finding a musical motive and work on it individually to express their own musical ideas which is related to their instant feelings. Additionally, *movement*, *body percussion*, *circle dances, rhythm games* and *singing activities* were performed.

4.2.1. Warm-up and Greeting

Every session began with a warm-up activity and a greeting song. This included a brief body massage to waken the legs, arms, face, and ears and then a greeting song composed by the music therapist in order to learn the group members' names and welcome each other to the music therapy session was sung. This song had two parts including both a tutti and solo parts, in a rondo form "A B A C A D...". In this form, "A" was the tutti part which all of the participants sang and "B, C, and D…" were the solo parts each participant sang alone. Thus each participant not

only had a chance to sing his/her name alone, but also get a supportive greeting from the rest of the group. Thereby a circle of trust between the participants was established.

4.2.2. Rhythm Games

The rhythm games were carried out in sessions in three different forms. The first version was called "*Fruit Salad*" and the participants were asked to rhythmically repeat the name of the fruit they saw on the cards held by the music therapist. For instance, *muz* (English translation–banana) (), *elm*a (trans. apple) (), *anana*s (trans. pineapple) (), and *mandalina* (trans. Clementine) (). After a couple of tries, the participants were divided into smaller subgroups to create some small fruit rhythms of their own. The music therapist encouraged the participants to listen to each other's ideas respectfully and to decide together on the final version of their composition. After the subgroups completed their compositions, they played their rhythmic composition for the rest of the participants. This game was designed to create an atmosphere of group cooperation, provide opportunities for sharing ideas, and experience working together in a smaller, more intimate group.

The second version of rhythmic games was called "*Babble Stone*" and the participants were asked to repeat a rhythm pattern that the music therapist played on the floor with beating two babble stones just after her. The bubbles stones we were using for this activity were hand palm big, but still in different sizes, and colors. After the group understood the game, the music therapist asked each participant to take a turn creating their own rhythm pattern for the larger group to copy. This game included creativity as well as social interaction through turn taking. Listening to each other and giving value to each other's idea through repeating-imitating the patterns was also important. It demonstrated the acceptance by other group members of the individuals' creative idea as well as the non-judgmental nature of the group. This helped develop feelings of support and being an indispensible part of a group.

The last version of the rhythm games was called "*Community Rhythm Circle*". Participants sat side by side in a circle on the floor and were asked to pass a babble stone with their right hands in a counter-clockwise direction while singing the song let by music therapist. When the group achieved the task with one babble stone, a second one was added and the process was repeated using two stones. After two stones were mastered, a clockwise direction was tried. This game was designed to create synchronized movements and simultaneous coordinated attempts for the group members.

4.2.3. Creative Movement and Dance

In music therapy sessions various types of movement and dance activities were attempted. The first activity was a reflective activity called "*Mirror*". Two people stood opposite each other. One of them was the "real" person while the other pretended the mirror. The mirror person tried to follow the movements of the other person simultaneously. The second type of activity was called "*Stop-and-go*". It begins with everybody moving all around the classroom according to the rhythm the music therapist played on a hand drum. Different musical qualities were important such as fast or slow and accented or smooth. There were also some instructions embedded into the activity such as "walk forward, walk backward, walk to the side, walk with two people, and walk with four people". When the hand drum stopped, the participants were also asked to stop. There were some instructions also applied during the stopping points such as "greet the closest friend with your hand/arm/knee, or make a bridge out of five people near you". The purposes of these activities were to increase both self- and peer-awareness, as well as the concept of moving in a society from a small group into a bigger one.

There were also dances which required togetherness and moving in tandem. The first dance was called "*Break Mixer*" and was constructed parallel to the idea of "Stop-and-go". There was an "A part" where the group members could dance freely with a partner and there was a "B part" where you hade to stop and create a shape like a sculpture. There were also circle dances which supported body awareness, posture and movement, and balance even those were not our primary goal. The circle dances were chosen as folk dances in which you hold hands, move together. These dances are known to help create a very strong bond and support relationships and connections between the members of the circle. Therefore during music therapy interventions a lot of circle dances were

performed. All of the dances were taught step by step based on the analysis planned in accordance with the skill level of the participants.

5. Conclusion

In this study, some music therapy interventions were used to improve the social interaction and communication skills of adolescents with ASD. At the beginning of the process, the adolescents with ASD were reluctant to be involved with their peers and the adults. They exhibited some ignorance and hesitation. The videos demonstrated each session was a step forward for them. The first objective was to increase trust in the group. With the interventions described in detail above, they slowly started to show openness and involvement. Gender differences were found in the exchanges with peers. The girls interacted first with girls, and the boys with the boys. This difference disappeared over the time. During the music therapy sessions, some improvements were observed in adolescents with ASD in areas such as turn taking, eye contact, listening, self-expression, coordinated movement in the group, decision making with others, and acceptance of others' differences.

As seen during this case study, music therapy interventions are effective in improving the social interaction and communication skills of adolescents with ASD. The simulation of real life experiences within the safety of the music therapy sessions help adolescents with ASD to understand how social interaction and communication occurs in real life. The music therapy group provided an opportunity for adolescents with ASD to attempt social interactions in a safe environment where they would not be judged because of their incorrect actions. They had the chance to change their ways of interacting. The musical environment gave them the chance to experience real life situations in an indirect, safe and nonjudgmental setting. It is also recommended that similar music therapy interventions can be applied with other special needs populations. Additional evidence-based research should be designed and applied to future scientific results.

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