

Promoting Social Engagement for Young Children with Autism: a Music Therapy Approach

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ABSTRACT

Joint attention is a foundational non-verbal social-communication milestone that fails to develop naturally in children with autism. This study used improvisational music therapy for three young children identified with autism in a kindergarten classroom. The three participants receive individual, weekly music therapy sessions at their school. The study employs a mixed method design that uses improvisational music therapy to enable joint attention, verbal or non-verbal communication, and social interaction for the three participants. Also, a complimentary qualitative analysis explored the teachers' and the parents' perspectives and variables that may have influenced the intervention outcomes.

I. INTRODUCTION

Autism is a disorder that is present from birth and affects essential human behaviors, such as social interaction, the ability to communicate ideas and feelings, expressive forms of imagination and relationships with others (ECA, 2001). A central feature of autism is difficulty with social skills. Research on the communication patterns of children with autism revealed that children with autism initiated fewer bids for interaction, continued fewer conversational turns, and showed less sympathy or interest for the perspectives of the persons with whom they were interacting (White et al., 2007; Jones & Schwartz, 2008; Bellon-Harn & Harn, 2006; Whalen, Schreibman, and Ingersoll, 2006).

Social skills and the ability to communicate do not happen in a vacuum (Bellini, 2008). A large body of research indicates that joint attention is a developmental milestone that provides a foundation for higher social functioning and language (Alpern, 2012; Adamson, Bakeman, Deckner, and Ronski, 2009). Joint attention is defined as the ability to use signals and a cluster of pre-symbolic communication actions in order to direct another's attention to interesting objects and events for the purpose of sharing them with a partner (Adamson, Roger, & Bakeman, 2004; Bruinsma et al, 2004; Schertz & Odom, 2004). Joint attention typically emerges at the last quarter of the first year of life and is consolidated at around 18 months (Adamson et al., 2004). As young children become proficient communicators through this nonverbal system, they become active members of their social environment, and they build verbal language on top of this already very functional communicational system (Rogers, 2010).

While joint attention is an important milestone in typical development, it is absent or delayed in young children with autism (Kasari et al, 1993; Mundy et al., 1990; Leekam and Ramsden 2006). When compared to control groups with typical development, developmental delay, and language delay, children with autism show greater difficulties in responding or initiating joint attention as well as in sustaining interaction for

social purposes with their partners (McArthur & Adamson, 1996; Doussard-Roosevelt et al, 2003; Marans et al., 2005; Leekam & Ramsden, 2006; MacDonald et al., 2006). Challenges in reciprocal communication usually signal language delays and deprive young children from learning new skills through interacting with people in their environment (Mundy & Neal, 2001). Therefore, joint attention constitutes an important target of intervention, because it supports communication in the forms of both responding and initiating bi-directional interactions, and it is supported by turn taking, eye contact, face-to-face engagement, and affect sharing (Kasari, Freeman and Paparella, 2001; Odom, Rogers, McDougle, Hume, & McGee, 2007; Bellini, 2007).

There is extensive research that explores joint attention and its ramifications to social competency and turn-taking in verbal communication (Whalen, Schreibman & Ingersoll, 2006; Siller & Sigman, 2002; Tager-Flusberg, 2003), to symbolic and verbal language development (Paul & Sutherland, 2005; Childson, Bakeman & Deckner, 2004; Bono, Dailey & Sigman, 2004), to symbolic play (Kasari, Freeman & Paparella, 2006; Keen, Rodger, Doussin & Braithwaite, 2007), and, finally, to sharing affect (Whalen, Shreibman & Ingresoll, 2006; Wolfberg & Schuler, 2006). Interventions designed to promote joint attention in young children with autism include developmentally-and age-appropriate interventions, maintenance and generalization of gains, implementation in natural environments, child engagement, intervention intensity, and family involvement (Whalen & Schreibman, 2003; Bredekamp & Copple, 1997; Bryson, Rogers, & Frombonne, 2003; Volkmar et al, 2004; Schertz & Odom, 2006). As children may be less receptive to intensive, high-structured, externally motivated and adult-centered approaches due to their young age, these findings suggest a need for joint attention interventions that incorporate a child-centered approach to intervention.

Improvisational music therapy is one approach that can be child-centered, adjusted to the child's interests, and supportive of family involvement in the natural environment. Recent studies in music therapy have shown that a child-centered approach in improvised music therapy interventions can increase joint attention and social engagement in children with autism (Kim, Wigram, & Gold, 2008; Kim et al, 2009). Music therapists have implemented various techniques such as music and singing (Starr & Zenker, 1998; Woodward, 2004), music as reinforcement (Della et al., an, 2003), and music improvisation (Donnell, 2007; Holck, 2004; Katagiri, 2009; Kim, Wigram & Gold, 2008, 2009; Woodward, 2004) as a means of enhancing self-expression, communication and social engagement in children with autism. Findings from music therapy follow a growing body of research on the importance of spontaneous play during structured and/or unstructured music-making

sessions for building social skills in children with autism (Kasari, Freeman & Paparella, 2006; Prizant et al, 2002, 2006).

Kim and colleagues (2008) studied the positive effects of improvisational music therapy on emotional expression, emotional engagement, interpersonal initiatives, and responsiveness during joint attention episodes, in children with autism between 3 and 5 years. The results showed an improvement for the participants in social expressions and inter-affectivity. Other research found that improvisation music therapy increased spontaneous eye contact, promoted turn-taking, and helped children acquire non-verbal and/or gestural communication skills (Holck, 2004; Oldfield, 2006; Wigram, 2002; Plahl, 2000; Wigram, 2002; Trevarthen, 2002; Buday, 1995; Browell 2002; Farmer 2003).

In a music therapy context, music activities are designed to offer a playful context that encouraged the child to be in a dialectical relationship with everyone participating in the music making process and use her emerging understanding of others' mind. Throughout the music activities the child is encouraged to respond to music and to explore musical, verbal and/or non-verbal ways of listening to others, sharing attention to music, responding to music, and initiating music interactions for purposes of social communication (Holck, 2002; Bakan et al., 2008). Music serves as the "zone of proximal development" (Vygotski, 1978) to reflect the child's emerging skills while the therapist or the care giver offers a more sophisticated musical context to move the child gradually beyond her present level of capacities. The music activities elicited response in part of the child, while at the same time the child herself influences the music-making and creates through her responses new musical conditions for further instances of social sharing. As the child becomes more contingent to the music making of the others, music activities provide the interactive context for establishing relationships and sharing attention, intentions, affect, and meaning-all important aspects of social communication (Wetherby, 2006).

The purpose of this study was to determine the effectiveness of improvisational music therapy intervention on the joint engagement abilities of three young children identified with autism. Improvisational music therapy was operationally defined as the use of music activities that varied from specific, age-appropriate songs, to instrumental music, and/or to short improvised rhymes designed to promote engagement and communication between the researcher and the child directly through the music interaction. The study extended previous research on joint attention for promoting social skills for young children with autism (Schertz and Odom, 2004), by building on developmental principles and by following a three phase sequence to promote focus on faces, responding to joint attention, and initiating joint attention. The purpose of the study was to determine whether a joint attention skills intervention would result in greater joint engagement abilities and social communication for the three participants. A secondary purpose was to study the parents' and teachers' perceptions of the use of improvised music therapy intervention, intervention-related variables and intervention outcomes. The research questions addressed were:

1. What are the effects of improvisational music therapy intervention on the joint engagement abilities of young children,

as it is described through instances of focus on faces, responding to joint attention, and initiating joint attention?

2. What are the teachers' and parents' of the participants' perceptions on the use of music as a non-verbal, communicative medium for social engagement?

For the purposes of this research, improvisational music therapy was defined as the use of clinical, live, interactive music interventions designed to promote engagement and communication between the therapist and the client directly through the music interaction (Bruscia, 1988, AMTA 2011). Musical elements such as melody, rhythmic patterns, pitch range, or dynamics are purposefully used to create a safe and predictable environment where the child is motivated to participate in music making by responding to the therapist's music patterns and by initiating musical interaction based on listen-and-respond principles.

II. METHOD

A mixed method design (single subject and qualitative analysis) was implemented for this research. The participants were three young children (5-7 years old) identified as at risk with autism and their parents. Eligibility criteria will require that the children had a school based autism diagnosis and they had poor social interactions with peers and adults. The parents signed consent forms for participating in the study. A multiple baseline design was implemented for a period of 8 months to determine causal relationships between the music therapy intervention and the child's performance in the three stages of social competency: focusing on faces, responding to joint attention, and initiating joint attention.

The research followed the Schertz & Odom (2007) developmental sequence for promoting joint attention in young children with autism as well as Schwartz's (2008) principles for developmental music therapy interventions with young children. The intervention took place in the music room of the school once a week, at a pre-assigned day and time, for approximately 30 to 45 minutes—the equivalent of an instructional class period. Each participant received weekly, individualized music therapy sessions by a board-certified music therapist (the primary investigator). Due to holidays, sick leave and other school-related changes in the schedules, it took approximately 7 to 8 months (about 25 sessions) to complete the study. The music room had a variety of musical instruments including keyboards (the therapist's main instrument), diatonic hand bells, pre-tuned frame drums in different sizes, recorders, cymbals, triangles, shakers and maracas, xylophones, glockenspiels, and sticks. The instruments were stocked in cupboards around the room and the children could choose their instruments of preference and use them without assistance.

An independent coder, trained on coding criteria and naïve to the baseline or intervention condition observed a 10-minute sampling of the weekly videotaped intervention for each participant. The independent coder monitored 10-second consecutive intervals from the 10 minute sampling (60 segments for each session) to identify if the targeted behavior occurred in each session, with each child.

Qualitative data were collected from the weekly sessions, the weekly-informal, interaction between the teachers, the parents and the researcher after each meeting, daily parents' notes,

teachers' observations, and the interventionist' notes. For the qualitative analysis NVivo has been used to code emerging themes. Additionally the primary investigator conducted semi-structured, open-ended interviews with the parents of the three participants. For this purpose the researcher met with the parents of the three children respectively, three times during the project, once in the beginning, once in the middle and once at the end of the project. The complementary qualitative analysis is exploring the perceptions' of parents and educators of the children regarding the music therapy intervention, their observations to the child's response to the music-therapy experience, their understanding of the child' growth, and variables that may have influenced the outcomes.

III. RESULTS

All three children exhibited significant improvement in spontaneous eye contact, alternating eye contact, and more responses to interaction for social purposes. The session analysis showed that the children were responding to joint attention instances and they were initiating joint attention while they musically interacted with the researcher during the music therapy sessions. Also the parents of the children report generalization of joint attention actions to other familiar environments of the participants.

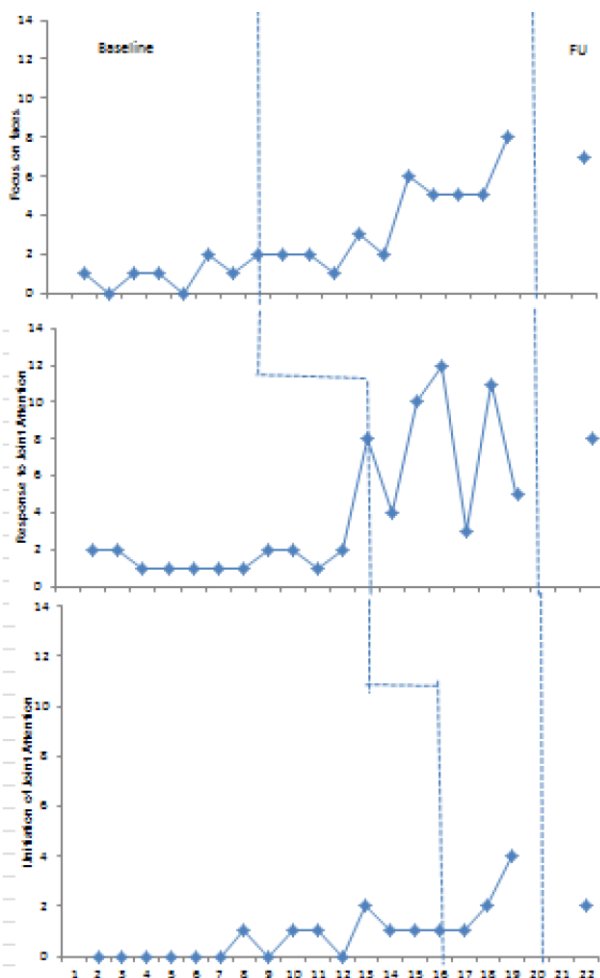


Table 1. Child 1

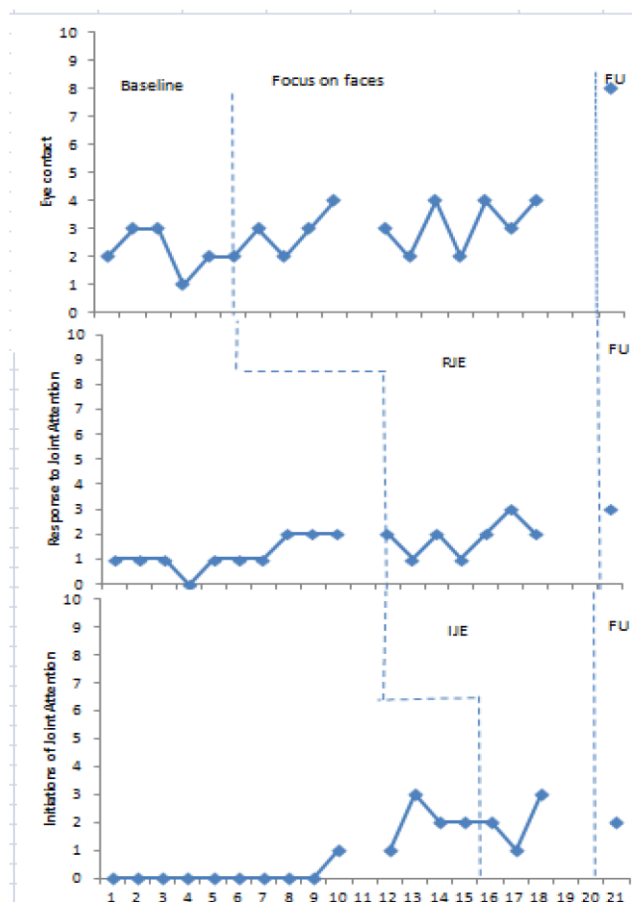


Table 2. Child 2

IV. CONCLUSION

The findings of this study are encouraging regarding the efficacy of music therapy interventions for promoting social interaction in young children with autism, showing that improvisational music therapy has potential to promote pro-social and social interaction for young children with autism as it creates preconditions for joint attention, reciprocal engagement, and interpersonal responses through the process of music making. In the future more research with larger samples, standardized measures and clear descriptions of the music used during the music therapy intervention is needed to strengthen fidelity in research implementation, clinical applicability of the results, and understanding of the value of less directed and more child-centered approaches to promote social engagement for young children with autism.

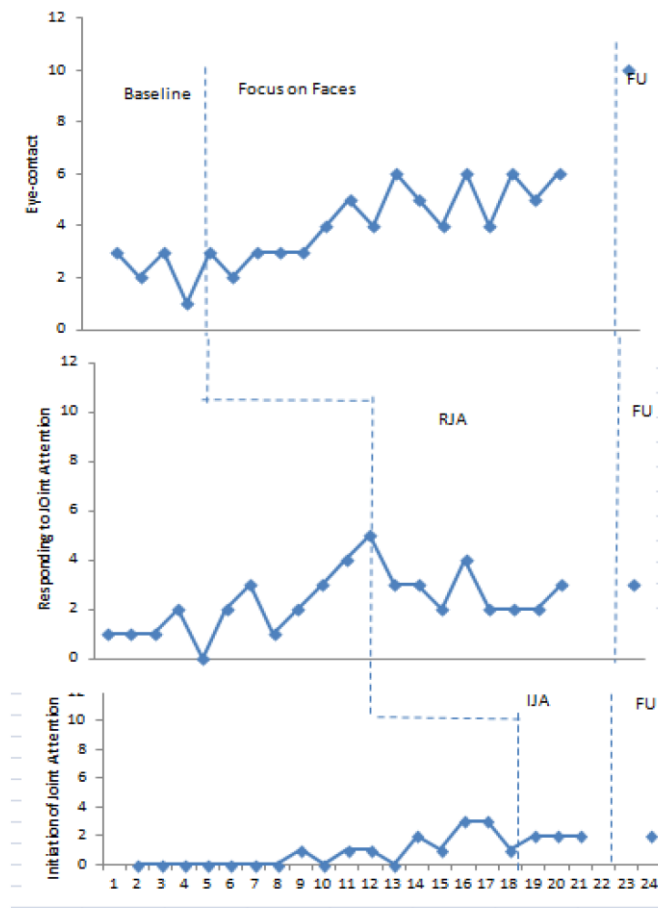


Table 3. Child 3

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