

# Improving Prosocial Behavior in Children and Adolescents with Autism Spectrum Disorders: The Positive Impact of Music Education in the School Setting

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## Background

Many individuals with Autism Spectrum Disorders (ASD) indicate a preference for auditory stimuli, particularly when the auditory stimuli are presented in the form of music. Even when other forms of communication are deficient, music therapy has been shown to be an effective method of communicative interaction and creative development.

Review of previous research (Whipple, 2004) indicates that music therapy benefits include:

- ◆ increased attention to task
- ◆ increased communicative acts
- ◆ increased engagement with others
- ◆ enhanced body awareness and coordination
- ◆ Improved symbolic play
- ◆ anxiety reduction
- ◆ increase in appropriate social behaviors

While music therapy can be costly and often unavailable to many children with ASD, music education is most often part of the public school curriculum and does not require extra financial commitment. Although the positive impact of music therapy has been reported in the research literature, little is known about the effectiveness of music education in promoting prosocial behavior in children with ASD.

## Research Objectives

- ◆ To investigate the impact of the Orff-Schulwerk based music education in a specialized day school program for children and adolescents with ASD, a population that seems to have a special affinity for music.
- ◆ To examine how school-based music instruction influences prosocial behaviors, which foster social interactions.

## Structure of the Orff-Schulwerk Approach

- ◆ Group context
- ◆ Non-competitive atmosphere
- ◆ Conceptualized for all children
- ◆ Designed for musical, cultural, and social learning
- ◆ Using poems, rhymes, games, songs, and dance accompanied by clapping and stamping or by drums, sticks, and bells
- ◆ Musical development through:
  - ◆ Exploration
  - ◆ Imitation
  - ◆ Improvisation
  - ◆ Creation

## Methods

### Participant Demographics:

- ◆  $N = 37$
- ◆ Age: 7 to 15 years range at baseline,  $M = 11$
- ◆ Gender: 33 male and 4 female
- ◆ Ethnicity: 38% Caucasian ( $n = 14$ ); 38% Hispanic ( $n = 14$ ); 5% African American ( $n = 2$ ); 5% Asian ( $n = 2$ ); 5% Pacific Islander ( $n = 2$ ); and 9% Unspecified ( $n = 3$ )

### Inclusion Criteria:

- ◆ A pre-existing diagnosis of ASD
- ◆ Meet ASD screening criteria on the Social Communication Questionnaire (SCQ; Rutter et al., 2003) or the Social Responsiveness Scale (SRS; Constantino, 2005)
- ◆ Enrolled at the Bridgeport School at The Help Group
- ◆ Have a parent who is fluent in English

### Procedures:

- ◆ Participants were recruited from classrooms at The Bridgeport School, a non-public school for children with ASD and intellectual disabilities
- ◆ Each participant completed 4 weeks of intensive music education during the summer session at The Bridgeport School
- ◆ The participants received the music program every day for 30 minutes, Monday through Friday
- ◆ Parents and teachers received \$10 gift cards for each set of questionnaires completed at pre- and post-test per student, totaling \$20 per student

## Outcome Measures

### Parent Measures:

- ◆ Social Responsiveness Scale – Parent Report (SRS) (Constantino, 2005)
- ◆ Social Skills Improvement System – Parent Report (SSIS) (Gresham & Elliot, 1990)
- ◆ Child Behavior Checklist (CBCL) (Achenbach & Edelbrock, 1981)

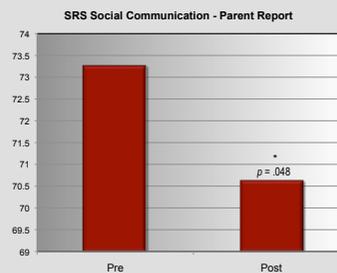
### Teacher Measures:

- ◆ Social Responsiveness Scale – Teacher Report (SRS) (Constantino, 2005)
- ◆ Social Skills Improvement System – Teacher Report (SSIS) (Gresham & Elliot, 1990)
- ◆ Teacher Report Form (TRF) (Achenbach, 1991)

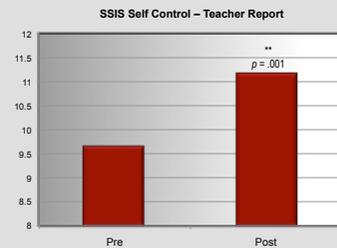
## Results

Paired samples t-tests revealed improvements in Social Communication on the Social Responsiveness Scale (SRS;  $p < .05$ ), and Self Control on the Social Skills Improvement System (SSIS;  $p < .01$ ), as well as a reduction in Hyperactivity on the SSIS ( $p = .05$ ).

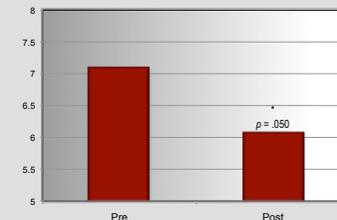
### SRS – Parent Report



### SSIS – Teacher Report



### SSIS Hyperactivity – Teacher Report



## Discussion

Results from this study support the literature suggesting that music may be an efficacious means of social communication for children with ASD. These findings also suggest that the use of the Orff-Schulwerk approach, may be effective in improving the prosocial behavior of children with ASD in and out of the classroom setting, based on teacher and parent reports. The results from this study show statistically significant change in communication, hyperactivity, and self-control after four weeks of an intensive school-based music education intervention taught daily in the classroom. These findings promote the use of structured music education in the academic setting to improve prosocial behaviors for children with ASD.

Limitations of the current research include the lack of control group comparison and lack of long-term follow-up assessment. Future research might include investigations into the benefit of longer and more traditional music education formats (e.g., music classes taught once per week over the school year).

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