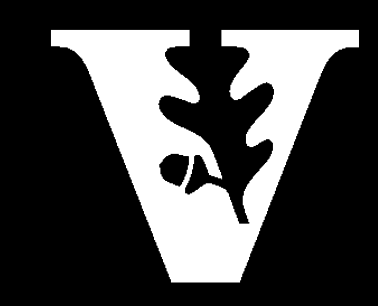




SENSE® Theatre: A Novel Peer Intervention Program Improving Social Cognition in Autism



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Introduction

Autism

A neurodevelopmental disorder characterized by

- Deficits in social communication
- Impairment in reciprocal social interaction
- Restriction of activities or interests

Impaired social cognition is a defining characteristic that is prominent across the spectrum

Social cognition is information processing in a social setting in order to understand and make sense of other members of the interaction. Social cognition plays a crucial role in evaluating Autism Spectrum Disorder behavioral symptoms.

Theory of Mind

Theory of Mind (ToM) is an individual's faculty to combine a related set of intellectual abilities in order to impute others' emotions, desires, beliefs, or intentions. ToM is an applicable measure of social cognition in the evaluation of intervention methods, such as SENSE® Theatre, that are aimed at improving social capabilities.

SENSE® Theatre

Core elements of acting helpful for teaching behavior include the following:

- Interaction-based interpretation
- Observation
- Imitation
- Articulation

SENSE® Theatre is a novel intervention combining theatre techniques and behavioral strategies to target social interaction responsiveness

Previous Research

SENSE® Theatre

- Duration: 10 weeks
- Dose Frequency: Weekly 4 Hour Sessions
- Setting: Evening Rehearsal
Community Performance

Waitlist Control

- Duration: 2 weeks
- Dose Frequency: Daily 4 Hour Sessions
- Setting: Summer Camp
Community Performance

Corbett et. al. have had recent findings (2016) in randomized clinical trials. In their 2016 study, SENSE® Theatre experimental group had higher average scores for ToM contextual and Memory for Faces than the waitlist control group.

Methods

Current Intervention

Practice Model

- Duration: 10 Weeks
- Dose Frequency: Weekly 4 hour sessions
- Setting: Group Rehearsal, indoor room
- Performances: 2 live community performances

Participants

- Across cohorts 1-3, 35 youth with ASD diagnosed by clinical judgment (APA, 2000) and ADOS (Lord et al., 1999)
 - Mean Age = 12.3957
 - SD = 1.84398
 - No significant difference across gender

Theatrical Techniques

- Theatre-based intervention naturally exercises various aspects of social interaction including:
 - Improvisation
 - Role-playing
 - Theatre Games
 - Scripting
 - Character Development



Theory of Mind Measure

- ToM was measured both pre and post intervention via the Developmental Neuropsychological Assessment, or NEPSY (Korkman et. al., 2007)
- NEPSY includes 3 different ToM assessments
 - Verbal
 - Contextual
 - Total

ToM Verbal Subtest

- Participant is read various scenarios or shown pictures and is asked questions that require knowledge of another individual's point of view to answer correctly

ToM Contextual Subtest

- Participant is shown a picture depicting a social context and asked to select a photograph from four options that depicts the appropriate affect of one of the people in the picture.

Results

Controls

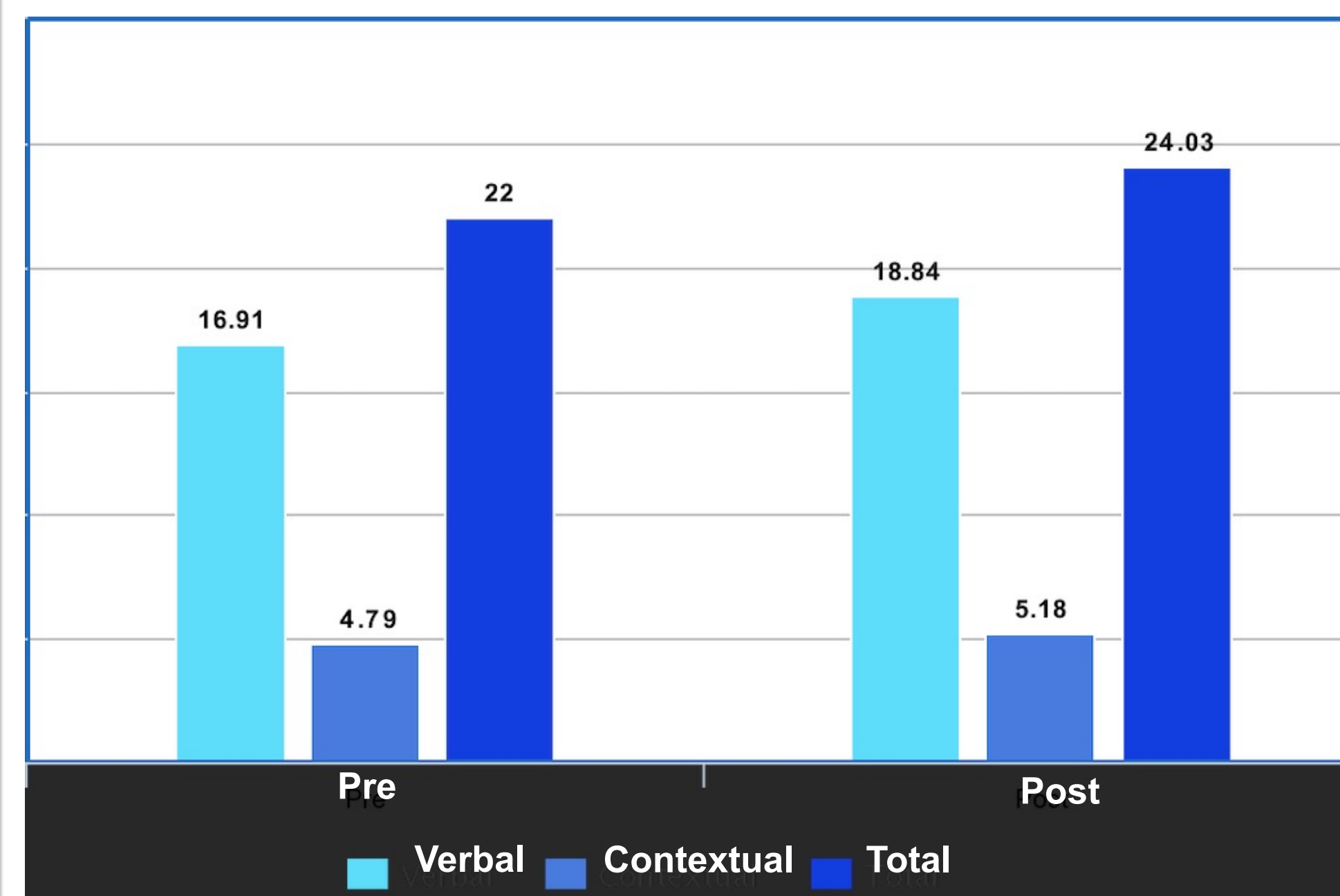
An independent sample T-test between groups was used to test for significant differences between the experimental (SENSE® Theatre) and active control condition (Tackling Teenage) with respect to age, IQ, and ADOS scores.

Variable	Significance
Age	p=0.518
IQ	p=0.373
ADOS Total	p=0.746

No significant differences between groups were found. Since there were no significant differences, there was no control for age, IQ, or ADOS score.

Theory of Mind Scores

The SENSE® Theatre Group showed growth in all 3 ToM assessments between pre and post intervention.



Another Independent Sample T-test between groups revealed that there were significant differences in the contextual and total post assessments but not the verbal assessment.

Assessment	Significance
Contextual	p=0.037
Verbal	p=0.057
Total	p=0.046

These scores represent the significance in a comparison between the post-intervention scores of the experimental and the active control condition groups.

Discussion

Summary

The primary aim of the study was to examine whether SENSE® Theatre is effective at improving ToM scores in youth with ASD. The study found a significant difference between the SENSE Theatre @ intervention and the active control condition in improving ToM scores.

Limitations

Rate of attrition in this study is defined by the number of participants who began receiving intervention, either in the experimental group or the active control condition, but did not finish. A participant may remove themselves from the study for any myriad of reasons. The attrition rates for the experimental group compared to the active control condition for cohorts 1-3 were variable:

	SENSE® Theatre	Tackling Teenage
Initial Enrollment	35	28
Finished Intervention	33	19
Attrition	-2	-9

Future Direction

SENSE® Theatre is a multi-site longitudinal study, funded by the NIH grant 5R01MH114906 (Corbett) spanning across 5 cohorts located at 3 different sites. This study was conducted using data from cohorts 1-3. The final 2 cohorts will be conducted with parallel structures to the first 3.

Future Studies using data from multiple cohorts should consider controlling for dosage. If a participant misses more than 2 rehearsal sessions, they may miss out on a significant enough portion of the intervention to skew their resulting scores. Controlling for dosage during this particular study did not alter the significance of the found results, however future studies should be aware of dosage variability.

References

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