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SOCIAL COGNITIVE TRAINING (SCT) FOR ADOLESCENTS WITH 22Q11: PRELIMINARY FINDINGS

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Introduction

- There are high rates of social-behavioral problems in individuals with 22q11DS.
  - In general, there tends to be more internalizing types of behavior than externalizing behaviors (Jansen et al., 2007).
- Weaker social competence also has been reported along with increased social problems.
- These problems tend to be only partially related to IQ and medical complications.

Introduction

- Social-behavioral difficulties are pervasive and will require ongoing treatment and scaffolding via parents and teachers.
  - Individuals with 22q11DS and associated psychiatric diagnoses do not receive social-behavioral interventions at the same rate as typical individuals (Young et al., 2011).
- Evidence-based interventions are lacking at this juncture, but some data are emergent (Shashi et al., 2014).

Pilot Intervention for Social Cognition

- Would adolescents with 22q11.2 Deletion Syndrome participate in a small group intervention, comply with instructions, and participate in the psychoeducational process?
- What about the fidelity of the intervention?
- Can we show efficacy by documenting targeted change in social skills, social cognition, and social behaviors?

Participants

- 19 adolescents with 22q11DS assigned to treatment conditions in a quasi-randomized fashion.
  - Treatment = 12
    - Mean Age = 14.8 ± 1.4
    - Female = 50%
    - Caucasian = 83%
    - Socioeconomic Status = 27.8 ± 11.7
  - Controls = 7
    - Mean Age = 14.0 ± 2.1
    - Female = 57%
    - Caucasian = 100%
    - Socioeconomic Status = 33±19.47
- The intervention and control groups did not differ at baseline in terms of Global Assessment of Functioning, medication status, or IQ.
  - None of the participants in either group had a psychotic disorder.

Social Cognitive Training

- Cognitive Enhancement Therapy (CET), a small group-based coaching program to enhance social-cognition, has been found to have lasting positive effects on social cognition and functioning in adults with schizophrenia (Eack et al., 2011).
- We modified the Social Cognitive components of the CET curriculum taking into consideration the age and developmental needs of adolescents with 22q11DS

Modifications to CET

- Modifications adhered to the core principles of CET which center on perspective taking, social context appraisal, appreciation of one's own and others' affect, identification of social cues, etc.
- We replaced specific case scenarios, video clips, and pictures to make these more applicable to adolescents with 22q11DS.
- Following the modifications, the SCT curriculum was shared with adolescents with 22q11DS, their parents, and experts to determine its potential applicability.

Social Cognitive Training

- Groups met for one hour each week with a Project Interventionist over 26 sessions
- Groups were comprised of 3 to 5 adolescents.
- Groups followed a predefined scope and sequence, with each session designed to teach a specific skill.
  - For example: recognizing physical cues of distress, practicing of techniques for calming down, flexible thinking, identifying the main idea of a conversation, determining expected behavior in different situations, using nonverbal cues to identify emotions, practicing active listening, providing verbal support, clearly expressing thoughts, responding to feedback, providing helpful feedback.

Locations of SCT groups

An SCT session: Nonverbal Cues

- Review homework
- Learning
  - Body language
  - Faces
- Exercises
  - Role-playing emotions
  - Identifying emotions in photos

- Homework: Look closely at the pictures. What emotion is shown? What clues helped you decide?

Treatment Outcome Measures

- Social Cognition
  - MSCEIT-YV- a performance-based measure of emotional intelligence for youth (10-18 years of age)
  - DANVA - visual and auditory emotion recognition
  - Social Cognition Profile - tolerant, perceptive, supportive and self-confident domains
- Social Function
  - Global Functioning - Social for social functioning
  - Global Functioning - Role for academic/work functioning
  - Social Skills Rating Scale Total Score
- Social-Behavioral Functioning, Psychiatric Status, and General Adaptive Behavior
  - Computerized Diagnostic Interview Schedule for Children (C-DISC) - a psychiatric interview
  - Child Behavior Checklist (CBCL) – parent ratings of behavior
  - Adaptive Behavior Assessment Systems-2 (ABAS-2) – parent ratings of adaptive behavior

Treatment Outcome Measures

- All standardized measures were administered before and after the intervention to both groups to assess preliminary effects of the intervention on targeted social outcomes.
- Additionally, parent and child satisfaction was assessed using questionnaires administered at the midpoint and end of the intervention.
- Assessors were blinded to group assignment and did not participate in the intervention. Conversely, the project interventionist was not involved in the pre- or post-intervention assessments.

Results

- For treatment compliance, 12 participants began the small group sessions. Of these ,11 (92%) attended at least 2/3 of the sessions, while seven (58%) attended at least 80% of the sessions. One participant attended the first session and stopped.
  - All participants depended on relatives for transportation to the groups. Reasons for absences included illnesses, parents' work, family vacations, inclement weather, attending a special event for a sibling, and involvement in extracurricular activities.
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Results
Parent Survey Outcomes

<table>
<tr><th>Question</th><th colspan="4">Answers</th></tr>
<tr><td>How would you rate the quality of the small group sessions?</td><td colspan="2">Excellent/Good: 100%</td><td colspan="2">Fair/Poor: 0</td></tr>
<tr><td>Did you feel that the size of the small groups was ideal for your child?</td><td colspan="2">Excellent/Good: 100%</td><td colspan="2">Fair/Poor: 0</td></tr>
<tr><td>Was the study staff responsive to your child's individual needs?</td><td colspan="2">Always/Most of the time: 100%</td><td colspan="2">Sometimes/Never: 0</td></tr>
<tr><td>Do you think that your child learned new skills during these sessions?</td><td colspan="2">Yes, definitely/Yes, generally: 100%</td><td colspan="2">No, not really/No, definitely: 0</td></tr>
<tr><td>What would make you more likely to continue participating in the small group sessions?</td><td>Fine as it is: 69%</td><td>Fewer sessions: 23%</td><td>More compensation: 8%</td><td>Smaller/larger groups: 0</td></tr>
<tr><td>If you were to seek help again, would you come back to our program?</td><td colspan="2">Yes, definitely/Yes, I think so: 100%</td><td colspan="2">No, I don't think so/No, definitely not: 0</td></tr>
</table>

Results
Participant Survey Outcomes

Questions	Answers	
	Very Much/Somewhat	A Little/Not at All
I liked going to the group sessions.	73%	27%
I was nervous about going to the group sessions.	27%	73%
When I left the small group sessions, I felt like I learned.	73%	27%
The leader of the small group sessions was helpful.	73%	27%
If I had a choice about coming to these sessions, I would keep coming.	82%	18%
I liked to talk in front of the group.	55%	45%

Parents' comments about the small group sessions*

- "[My son] has good nights and bad nights…every night when we left the group was a good night. I didn't have to worry about people saying you're ugly, you'll never have a girlfriend, you're this, you're that, which is what he gets all the time at school."
- "[My daughter] was very disappointed we were late—she said, 'I'm missing it!' She really, really enjoys it. This is a time when she can talk to people who know what she's going through, and she doesn't think she'll be ostracized or criticized…It's been really wonderful."
- "I certainly see improvements with [my daughter] in terms of conversation…[She] approaches this little girl on the cheerleading team and says, Hi, and…the next week she tried again with another kid. She'd not really done that before."

(*from focus group with parents)

Written feedback from parents following SCT

- Could name a specific change observed in child: 75%
  - "[My daughter] is doing better with having more of a two way conversation…having more interest in what the other person has to talk about in particular. She also stood up for her sister when something unkind had been posted on someone's Facebook…That was very positive."
  - "[My daughter] is more talkative around other people…She has realized that the more she talks to kids in class, the more they talk and interact with her."
  - "I believe [my son] is better at communication! His attitude and thoughts about himself are MUCH better."
- When asked what they liked about the groups, mentioned their children meeting others with the same condition or similar struggles: 50%

Results

- When the two groups were compared, preliminary findings revealed a significant difference between groups for the ABAS-2 Conceptual Composite Score ($p < .03$).
  - This summary scale includes Communication, Functional Academics, and Self Direction.
- Between group effect sizes ranged from small to medium, with the MSCEIT-YV Perceiving Emotions Scale being large (Cohen's $d = .91$)
- We also created a Social Cognitive Composite by combining variables from the MSCEIT, ABAS-2, SSRS, SCP, and DANVA.
  - Intervention Group showed a trend towards significant improvement on the Social Cognitive Composite, $F(1, 13) = 4.05$, $p = .066$.

Conclusions

- The Social Cognitive Training appeared feasible and well-liked by most participants and their families.
- Our preliminary analyses of the SCT curriculum for adolescents indicated social-cognitive improvements in the intervention group, particularly in adaptive skills, social cogniton and perceiving emotions.
- Social Cognitive Training holds promise as an evidence-based intervention to improve social behaviors in adolescents with 22q11.2 Deletion Syndrome.
  - Could early intervention and positive outcomes mediate the degree of social cognitive challenges, but perhaps the appearance and/or severity of psychiatric illness?
- A larger randomized controlled trial will permit an examination of the efficacy of this novel intervention and assist in examining associated treatment moderators.

Questions?