

## INTRODUCTION

- Adolescents with ADHD often experience social impairment (Ray et al., 2017) which places them at risk for poor functioning (Becker et al., 2017; Margherio et al., 2020; Weiner et al., 2020).
- The Challenging Horizons Program (CHP), a school-based training intervention, is one of the few psychosocial treatments to target social impairment in this population (Morris et al., 2020) and to report improvements in social skills among high school students with ADHD at post-treatment and follow-up in the context of a randomized control trial (RCT) (Evans et al., 2021).
- Given the novelty of these findings, it is imperative to better understand treatment response in this trial in order to further develop and effectively disseminate the CHP.

### Study Aim:

- To identify characteristics of adolescents and aspects of the intervention that are associated with improvements in social skills.

## METHODS

### Participants:

- 92 high school students ( $M$  age=15.0;  $SD$ =0.8; 83% male; 71% White, 17% Black, 12% Hispanic) with ADHD assigned to the treatment condition in an RCT of the CHP completed informed consent/assent procedures.

### Intervention:

- Participants met with coaches individually twice each week for 15–20 minutes in sessions that included organization, study skills, problem solving, and interpersonal skills training. Ten Interpersonal Skills Group (ISG) sessions were offered wherein participants set goals for how they wish to be perceived by others and practiced behaviors that align with those goals. Feedback on their progress was provided by coaches during group and individual sessions.

### Outcome Measures:

- Parent- and self-ratings of the Social Skills Improvement System-Rating Scale (SSIS) were completed before treatment (baseline), at post-treatment (post), and at follow-up (FU) 6 to 8 months after treatment ended.

### Predictor Variables:

- Participants and parents completed assessments including the Working Alliance Inventory (WAI) at the mid-treatment (mid) time point and Difficulties in Emotion Regulation Scale (DERS) before treatment, at post-treatment, and at follow-up. Treatment dosage data was also collected.

## ANALYTIC PLAN AND RESULTS

### Analytic Plan:

- To measure improvement in social skills, SSIS difference scores were calculated between baseline and post-treatment and baseline and follow-up time points for both parent and adolescent ratings.
- Variables significantly correlated with SSIS difference scores were included in four regression models (1: parent-rated baseline to post; 2: parent-rated baseline to FU; 3: self-rated baseline to post; and 4: self-rated baseline to FU) to examine predictors of respective difference scores, controlling for baseline SSIS ratings.

### Results:

- In each regression model of SSIS difference scores, the predictor variables significantly accounted for the variance in ratings of social skills improvement ( $R^2 = .25, .23, .26, \& .40$ ; models 1 to 4, respectively).
- The total amount of time participants engaged in problem solving with coaches during individual sessions was associated with declines in parent ratings of social skills at post-treatment (see Table 1).
- Adolescents' ratings of their alliance with their coach were significant predictors of self-rated SSIS improvement at post-treatment (see Table 2) and follow-up.

**Table 1. Predictors of Parent-Rated SSIS Improvement at Post-Treatment**

	Variable	B	t
Step 1	Baseline SSIS Ratings	-.37	-3.94**
Step 2	Hyperactivity/Impulsivity Symptoms (PR)	-.02	-.06
	DERS (PR)	.16	1.76
	Total Minutes of Problem Solving	-.04	-2.60*

**Table 2. Predictors of Self-Rated SSIS Improvement at Post-Treatment**

	Variable	B	t
Step 1	Baseline SSIS Ratings	-.26	-1.92
Step 2	DERS (PR)	.88	1.58
	Family Income	-2.46	-1.63
	Total Sessions with Problem Solving	.71	1.75
	WAI- Goals	4.10	2.05*

Note. Table 1: (n=77); Table 2: (n=65); PR= Parent-rated; SR= Self-rated; \* $p < .05$ , \*\* $p < .01$ .

## DISCUSSION

- The negative relationship between time spent problem solving and parent-rated SSIS improvement could indicate that students with fewer difficulties (i.e., required less time dedicated to problem solving discussions) improved the most.
- Finding a positive relationship between self-rated alliance and outcomes replicates findings from prior research on skill-based interventions for students with ADHD (Breux et al., 2018) and further highlights the importance of the relationship between students and school mental health professionals when implementing an evidence-based intervention.
- Further analyses that examine predictors of various trajectories of change in social skills may enhance our understanding of adolescents' response to treatment.