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BACKGROUND

- Individuals with Autism Spectrum Disorder (ASD) are known to have deficits in social skills, including impaired social-emotional reciprocity, nonverbal communicative behaviors used for social interaction, and development, maintenance, and understanding of relationships (Otero et al. 2015).
- Adolescents with ASD often have difficulty understanding their peers and establishing social reciprocity with others (Volkmar 2011).
- These social skill deficits, in combination with elevated physiological arousal, can lead to the development of social anxiety (Bellini 2006). In turn, increased social anxiety appears to be related greater social avoidance (Bellini 2006).
- Research on the Program for the Education and Enrichment of Relational Skills (PEERS®), an evidence-based social skills intervention for adolescents with ASD, demonstrates an increase in social engagement post-treatment (Laugeson et al. 2012).
- While research suggests that social anxiety may be linked with social avoidance, the extent to which social anxiety impacts frequency of social engagement in adolescents with ASD following PEERS® has yet to be examined.

OBJECTIVES

- Aims:** To examine the relationship between social anxiety at baseline as a predictor of change in social engagement in adolescents with ASD following the completion of a 14-week parent-assisted social skills intervention.
- Hypothesis:** Greater social anxiety among adolescents with ASD at baseline will be correlated with less improvement in frequency of social engagement following the PEERS® intervention.

METHODS

PARTICIPANTS

- N = 100 adolescents with ASD ranging from 11-18 years of age (M=14.02, SD=1.81) and their parents who presented for social skills treatment through the UCLA PEERS® Clinic.
- Gender: Males=84; Females=16
- Ethnicity: 65% Caucasian (n=65); 10% Latino (n=10); 9% Asian American (n=9); 6% Other (n=6); 5% African American (n=5); 3% Middle Eastern (n=3); 1% Native American (n=1).
- Social Responsiveness Scale (SRS; Constantino, 2005) Total baseline score: M=77.39, SD=11.82

ADOLESCENT MEASURES

- Social Anxiety Scale (SAS; La Greca, 1999)
 - Measure of social anxiety and social avoidance among adolescents.
- Quality of Socialization Questionnaire (QSQ; Frankel & Mintz, 2008)
 - Measure of adolescent social engagement with peers through self-reported frequency counts of hosted and invited get-togethers in the previous month.

TREATMENT

- Adolescents and parents attended weekly 90-minute group treatment sessions over 14-weeks.
- Skills were taught using didactic instruction in a small group format which included role-playing demonstrations, behavioral rehearsal activities, and weekly homework assignments.
- Treatment sessions focused on making and keeping friends and handling peer conflict and rejection. Topics of instruction included:
 - How to use appropriate conversational skills
 - How to find common interests with peers
 - How to make phone calls to friends
 - How to choose appropriate friends
 - How to appropriately use humor
 - How to enter and exit conversations with peers
 - How to be a good host during get-togethers
 - How to be a good sport
 - How to handle rejection, teasing, and bullying
 - How to handle rumors and gossip
 - How to handle arguments and disagreements
 - How to change a bad reputation

PROCEDURES

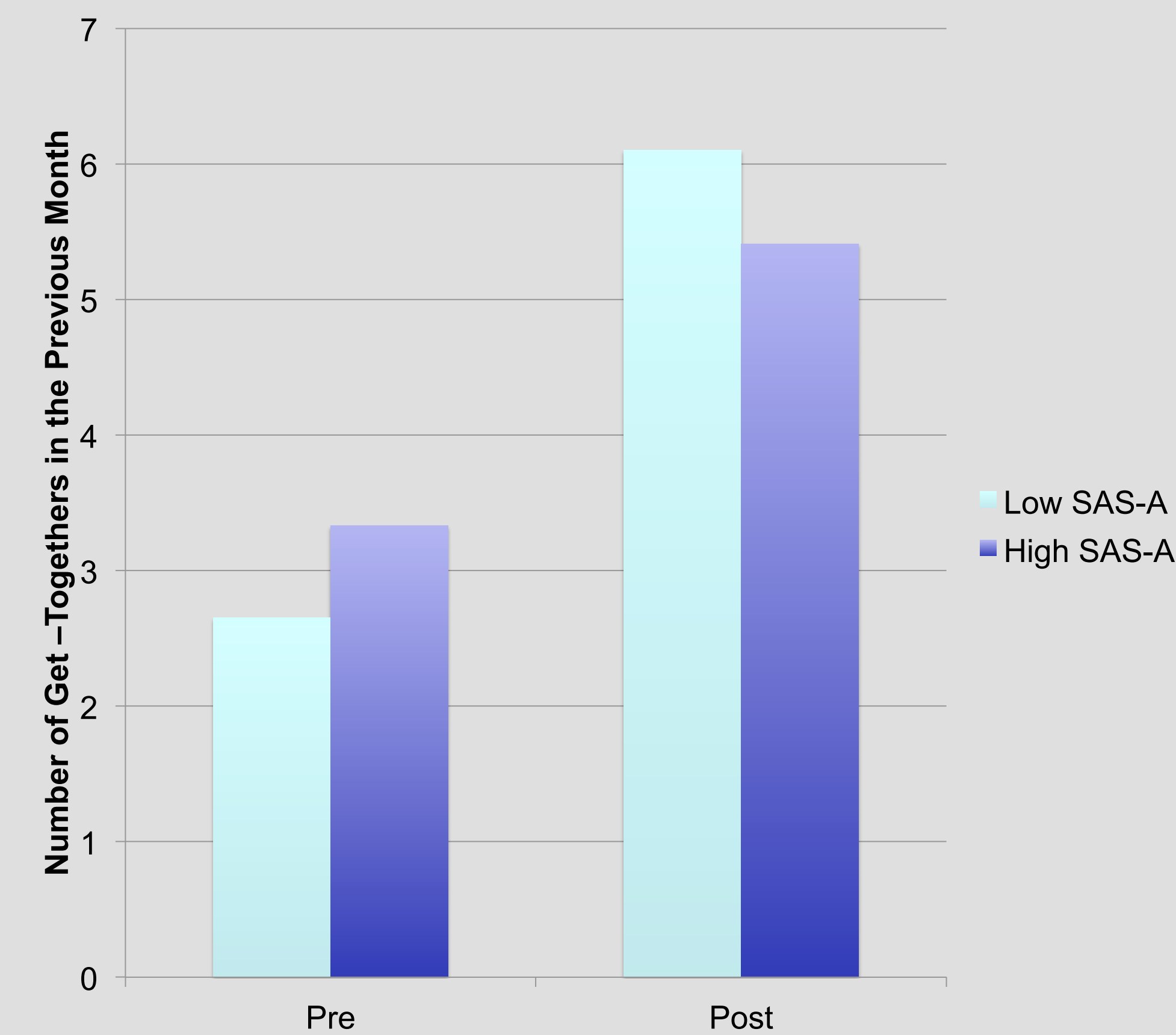
- Baseline scores of adolescent self-reported social anxiety in new situations, general social avoidance, and fear of negative evaluation were assessed using the SAS-A.
- Treatment outcome related to social engagement was assessed using change in scores from pre- and post-intervention on the QSQ for adolescent-reported (QSQ-A) and parent-reported (QSQ-P) frequency of get-togethers.
- The cutoff scores for the SAS-A was a total of at or above 50, which indicates identifying clinically significant levels of social anxiety in community samples.
- Pearson correlations were calculated to examine the relationship between social anxiety on SAS-A at baseline and change in social engagement on the QSQ-A and QSQ-P from pre- to post-treatment.

RESULTS

- Results reveal that 49 percent of participants (n=49) reported social anxiety in the clinical range at baseline, as measured by the SAS-A total score (≥ 50).
- While social engagement increased over the course of treatment for the full sample, as measured by adolescent and parent-reported hosted ($p < .001$) and invited ($p < .05$) get-togethers, overall social anxiety at baseline did not predict improvement in social engagement following intervention.
- However, higher scores on the SAS-A subscale of General Social Avoidance and Distress predicted an increase in parent-reported hosted get-togethers ($p < .05$) following treatment.
- There was no significant change in the SAS-A scores post-treatment for the participants with lower levels of anxiety, but there was a significant decrease in the participants with higher levels of anxiety ($p < .001$).

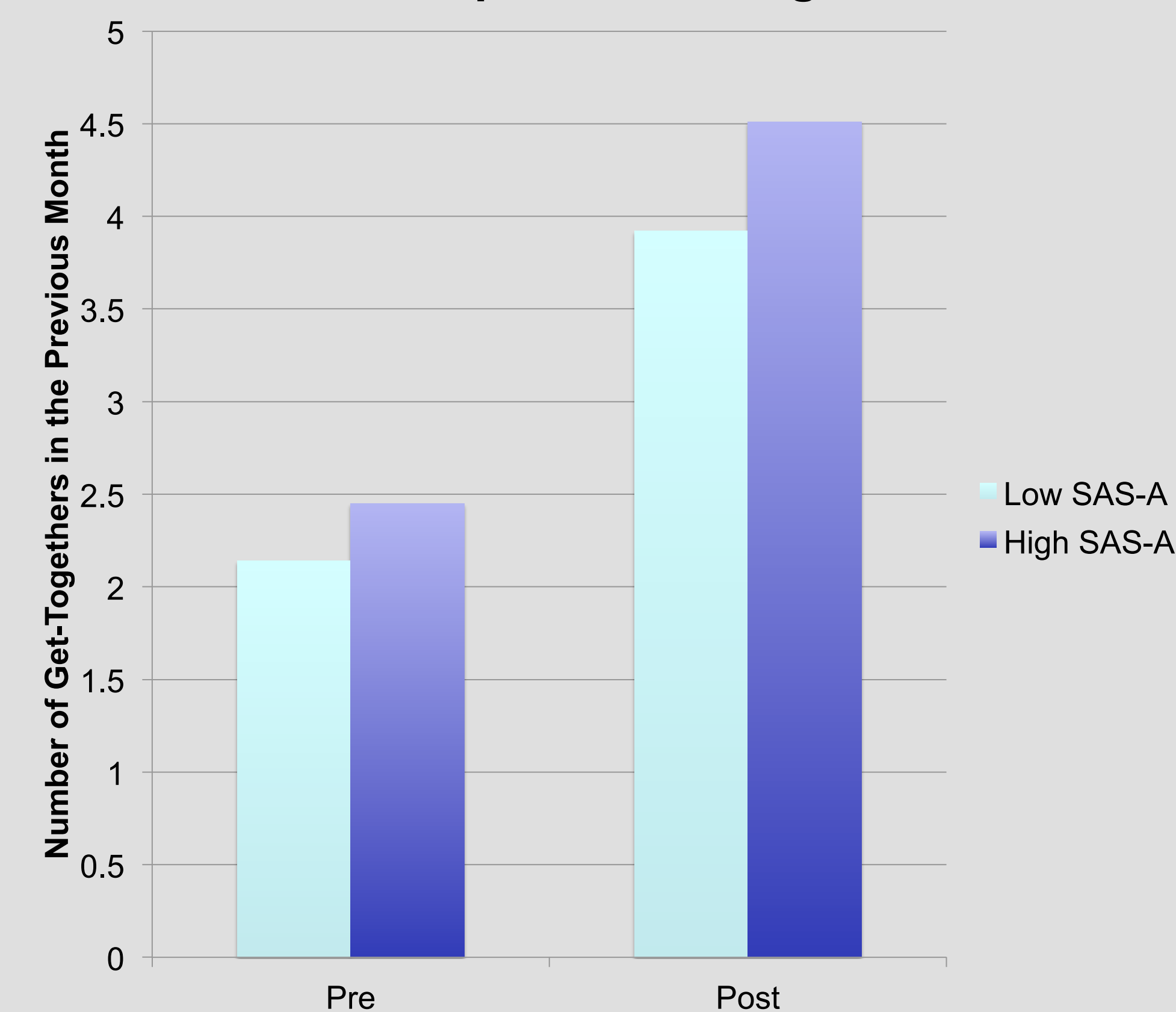
RESULTS

Adolescent-Reported Get-Togethers



- Adolescents with lower scores on the SAS-A at baseline reported an average of 2.65 get-togethers pre-intervention and 6.1 get-togethers post-intervention ($p < .001$).
- Adolescents with higher scores on the SAS-A at baseline reported an average of 3.33 get-togethers pre-intervention and 5.41 get-togethers post-intervention ($p < .05$).

Parent-Reported Get-Togethers



- For adolescents with lower scores on the SAS-A at baseline, parents reported an average of 2.14 get-togethers pre-intervention and 3.92 get-togethers post-intervention ($p < .01$).
- For adolescents with higher scores on the SAS-A at baseline, parents reported an average of 2.45 get-togethers pre-intervention and 4.51 get-togethers post-intervention ($p < .001$).

DISCUSSION

- There was no significant relationship between adolescents' overall social anxiety at baseline and change in social engagement following PEERS®.
- There was a significant treatment effect for adolescent and parent-reported hosted and invited get-togethers.
- Interestingly, greater general social avoidance and distress prior to treatment appears to be related to better treatment outcomes through increased social engagement.
- These findings suggest that social anxiety does not prohibit improvements in social engagement in adolescents following the PEERS® intervention, as might be expected.
- Future research should further investigate the relationship between social avoidance and improved social engagement to understand the underlying mechanisms of this unexpected treatment outcome.

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