Symposium Title: The Impact of Age and Comorbidities on Social Skills Outcomes across the Lifespan in Autism Spectrum Disorder

Chair: Elizabeth Laugeson, Psy

Discussant: Jan Blacher, Ph.D.

Overview: Autism spectrum disorder (ASD) is a neurodevelopmental disorder that impacts individuals’ ability to communicate and interact with others (National Institute of Mental Health 2017). Extensive research proves that evidence-based social skills interventions like UCLA’s Program for the Education and Enrichment of Relational Skills (PEERS®) can significantly improve symptoms; however, more research is needed to examine the impact of development and comorbidities on treatment outcomes across the lifespan. The four presentations in this symposium will address a few different factors that impact treatment outcomes. The first presentation examines depression in young adults with ASD and its relationship to social isolation and romantic loneliness. The second presentation compares changes in social anxiety following social skills treatment between adolescents and young adults. The third presentation compares social skills treatment gains for individuals with ASD at three different ages over the lifespan (preschool, adolescence, adulthood). The fourth presentation examines social skills treatment gains for adolescents with ASD when comorbid diagnoses including ADHD, anxiety, and depression are present. Collectively, these presentations investigate how age and comorbid conditions impact treatment gains in individuals with autism spectrum disorder following evidence-based social skills interventions.

Paper 1 of 4

Paper Title: Connecting Depression and Levels of Loneliness among Young Adults with Autism Spectrum Disorder

Authors: Ana Mendoza, M.A., Morgan Jolliffe, Nicole Rosen, & Elizabeth Laugeson, Psy.D.

Introduction: Depressive symptoms have been found to be related to many social processes including satisfaction with one’s social experience (Kornienko & Santos 2014). Research has shown that adolescents who feel secure in their relationships have a decreased risk of depression in adulthood (Cook, Heine, Miller, & Zimmerman 2016), while typically developing adults reporting lower levels of social support report higher levels of depression and loneliness (Calmes 2009). Previous research has shown that children with Autism Spectrum Disorder (ASD) experience greater loneliness than their typically developing counterparts, possibly due to poor friendship quality (Bauminger & Kasari 2000). Although the relationship between depression and loneliness has been studied extensively with typically developing youth, this relationship has yet to be explored in young adults with ASD. This study seeks to examine the relationship between self-reported depression and levels of loneliness in young adults with clinically elevated autism symptoms. It is hypothesized that young adults who report higher levels of depression will also report experiencing higher levels of loneliness.

Methods: Participants in this study included 78 young adults ranging from age 18 to 35 (Male=64%; mean age=22.32, SD=3.88) presenting for social skills treatment as part of the UCLA Program for the Education and Enrichment of Relational Skills (PEERS; Laugeson 2017), an evidence-based, caregiver-assisted social skills program for young adults with ASD and other social challenges. Young adults completed the Social and Emotional Loneliness Scale for Adults (SELSA; Tomasso & Spinner 1993) and the Major Depression Inventory (MDI; Bech, Rasmussen, Olsen, Noerholm, & Abildgaard 2001) prior to treatment. In order to examine the relationship between social and emotional loneliness and depression, Pearson correlations were calculated using baseline scores on the MDI in comparison to ratings of loneliness on SELSA.

Results: Pearson correlations revealed a significant positive relationship between Total Scale scores on the SELSA and the MDI (p<.001). Post hoc analyses revealed that the Social Isolation and the Romantic Isolation subscale of the SELSA were positively
correlated with overall depression on the MDI (p’<.001). There was no significant association between the Family Isolation subscale of the SELSA and overall self-reported depression.

**Discussion:** Findings support the original hypothesis that young adults reporting higher levels of depression also report higher levels of overall loneliness, particularly in the areas of social and romantic isolation. These findings are important because they reveal a relationship between depression and social and romantic relationships in young adults with ASD. Furthermore, these results suggest that when the treatment priority is to decrease depressive symptoms in youth with ASD, targeted interventions to improve social and romantic relationships may be useful.

**References/Citations:**
confirmed in the teen and young adult groups using Paired sample T-tests of pre- and post-treatment total scores on the SAS. Differences in rate of treatment gains across the two groups were determined using an ANOVA.

**Results:** Paired samples T-tests show significant decreases in social anxiety on the SAS pre- to post-treatment in both groups: adolescent ($t=.576$, $p<.000$), and young adult ($t=.672$, $p<.000$). Results from the ANOVA reveal no statistically significant difference in rate of decreased parent-reported social anxiety across the adolescent and young adult groups, $F(.967, 1) = .995$, $p<.327$.

**Discussion:** These results suggest that PEERS℠ is equally effective in decreasing social anxiety in adolescents and young adults with ASD. These findings are encouraging given our understanding of how social anxiety may increase as youth with ASD get older (Kuusikko 2008). Future research is needed to continue to compare differential treatment gains across other stages of development following social skills interventions to determine if these differences are consistent across other domains.

**References/Citations:**
**Results:** Paired samples t-tests revealed significant decreases in SRS-2 Total Scores pre- to post-treatment in all three age groups: preschool ($t=2.48, p<.001$), adolescent ($t=10.17, p<.001$), and young adult ($t=6.87, p<.001$). A repeated measures ANOVA compared change in SRS-2 Total Scores between groups and revealed a significant difference in amount of change between the adolescent and young adult groups ($F=5.02, p<.01$), such that SRS-2 Total Scores improved more in the adolescent group than the young adult group, supporting the original hypothesis. However, there were not significant differences in amount of change between the preschool group and the adolescent group or the preschool group and the young adult group.

**Discussion:** These results suggest that the adolescent group did benefit more from treatment than the young adult group. This is consistent with the research advocating adolescence is a critical age for social skills development. This study demonstrates the importance of social skills treatment during adolescence. Future research might examine other social skills gains following the PEERS® intervention to determine if these differences are consistent across other domains.

**References/Citations:**
engagement using the Quality of Socialization Questionnaire (QSQ; Frankel & Mintz 2008), and parent-reported change in social responsiveness on the Social Responsiveness Scale (SRS; Constantino 2005) pre- and post-intervention.

**Results:** Paired samples t-tests reveal significant improvement in number of adolescent-reported hosted ($t=-5.22, p<.001$) and invited ($t=-2.50, p<.05$) get-togethers from pre- to post-treatment. Results also reveal significant improvement in parent-reported social responsiveness ($t=7.84, p<.001$) over the course of treatment. Multiple linear regression was used to assess baseline ADHD, social anxiety, and depression symptoms as potential predictors of treatment outcome. Change in social responsiveness was not related to baseline ADHD-inattentive, ADHD-hyperactive/impulsive, depression, or social anxiety scores ($p>.10$; $R^2=.009$). These baseline scores were also not predictive of change in hosted get-togethers ($p>.10$; $R^2=.005$). ADHD-inattentive, social anxiety, and depression baseline scores were not predictive of change in invited get-togethers ($p>.10$), but ADHD-hyperactive/impulsive baseline scores predicted less improvement at a trend-level significance ($p<.10$; $R^2=.075$).

**Discussion:** Findings reveal that baseline ADHD, depression, and social anxiety symptoms are not predictive of improvement in social responsiveness or frequency of social engagement following the PEERS® intervention. However, a trend level significance was found for ADHD-hyperactive/impulsive youth, who presented with slightly less social reciprocity through invited get-togethers from peers.

**References/Citations:**