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BACKGROUND

Recent research has established the high comorbidities of mental health problems in adolescents with Autism Spectrum Disorder (ASD; see Strang, et al., 2012), prompting researchers to examine factors that may contribute to elevated anxiety and depression. Given the centrality of the family for individuals with ASD (Greenlee, Winter, & Diehl, 2018) as well as the stage salience of peer relationships during adolescence (Masten et al., 1995), this study focused on the roles of family functioning and social competence in mental health outcomes of verbally-fluent adolescents with ASD.

- ❖Some research suggests that adolescents with ASD and without comorbid intellectual disability are interested in social interaction but are also aware of their social differences (Mazurek & Kanne, 2010).
- ❖Combined with the heightened salience of the peer context during adolescence, increased social awareness may put youth with ASD at risk for disengaging from peers. Disengagement may lead to poor peer relationships, feelings of isolation, and loneliness which have been associated with internalizing problems in youth with ASD (Bauminger & Kasari, 2000; Vickerstaff et al., 2007; Whitehouse et al., 2009).
- ❖Although social-communication deficits are an inherent part of an ASD diagnosis, families may still play a role in ASD adolescents' social competencies and social development.

The current study explores the idea that adolescents may learn social skills in part from family experiences, even in the context of ASD, and that the family environment plays a role in adolescents' social competence.

Hypothesis:

- ❖Family functioning indirectly impacts adolescent anxiety and depressive symptoms via adolescent social competence for adolescents with ASD.

PROCEDURES

- ❖ This study used data from the Teens and Parents (TAP) Study (Greenlee, 2019).
- ❖ Participants were adolescents aged 13-17 diagnosed with ASD and their primary caregivers (PCs) recruited via the Interactive Autism Network (IAN) and online advertisements on the Autism Speaks website.
- ❖ Inclusion criteria stipulated that PCs be female (most PCs enrolled in IAN identify as female), that adolescent-caregiver dyads live together and speak English, and that adolescents have sufficient reading skills to independently complete study procedures.
- ❖ Adolescents were excluded if they had comorbid intellectual disability or a genetic disorder.
- ❖ PCs and adolescents submitted self-report measures online via REDCap (Harris et al., 2009).
- ❖ PCs and adolescents each received a $10 Amazon gift card as compensation for their time.

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PARTICIPANTS

Adolescents
- *N*=178; 73% male
- Ages 13-17 (*M*=14.92, *SD*=1.31)
- 81.5% White or Caucasian
- Professional existing ASD diagnosis (DSM-IV-TR or DSM-V criteria)

Primary Caregivers
- All biological or adoptive mothers
- Mean age 44.8 (*SD* = 5.9)
- 73.6% married and living with spouse
- 59.6% had a college degree or higher
- Median household income = $60-70,000

MEASURES

Construct	Measure	Reporter	Scoring
Youth Social-Communication Skills Impairment	Social Communication Index of the Social Responsiveness Scale (SRS; Constantino & Gruber, 2012)	PC	Total (sum) score; higher scores = more social communication impairment
Family Functioning	Health/Competence Subscale of the Self-Report of Family Inventory (Beavers & Hampson, 2000)	PC	Average score; higher scores = greater competence
Youth Anxiety & Depression Symptoms	Revised Children's Anxiety & Depression Scale - Short Ver. (Ebesutani et al., 2012)	Youth	Two separate total (sum) scores; higher score = more symptoms
Descriptives and possible covariates	Demographics Questionnaire	PC	Youth age and gender; family SES
Restrictive & Repetitive Behaviors	Repetitive & Restrictive Behaviors Subscale of the SRS	PS	Total (sum) score; higher scores = more RRBs

RESULTS

- ❖ To test the hypothesized indirect path, we conducted bias-corrected bootstrapping analysis with 5,000 bootstraps using Process 3.0 model 4 (Hayes, 2017) for SPSS.
- ❖ Family socioeconomic status, adolescent sex, and restricted and repetitive behaviors were used as covariates in all models (see Table 1).

Table 1. *Correlations between study variables and potential covariates*

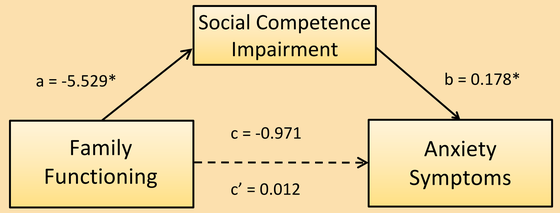
Variable	1	2	3	4	5	6	7
1. Family Functioning	-						
2. SC Skills	-0.17*	-					
3. Anxiety	-0.06	0.40**	-				
4. Depression	-0.02	0.37**	0.78**	-			
5. Adolescent Age	-0.04	-0.14	0.08	0.10	-		
6. Sex	0.02	0.01	0.22**	0.26**	0.10	-	
7. RRBs	0.12	0.70**	0.27**	0.25**	-0.13	-0.03	-
8. Family SES	-0.02	-0.31**	-0.31**	-0.33**	0.13	-0.26**	-0.20**

* = $p < .05$, ** = $p < .01$; SC = social-communication; RRBs = restricted and repetitive behaviors

- ❖ Over and above the effects of adolescent sex and restrictive and repetitive behaviors (RRBs), and family SES, the hypothesized indirect pathways were both statistically significant (figures 1 & 2):
  - anxiety (*ab* = -0.982, *SE* = 0.384, 95% CI = [-1.819, -0.347])
  - depression (*ab* = -0.494, *SE* = 0.185, 95% CI = [-0.897, -0.184])

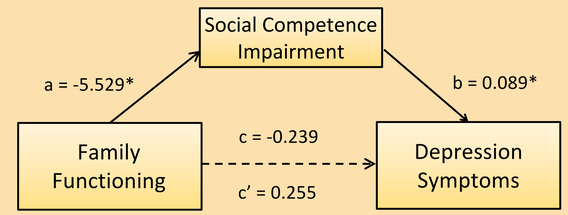
RESULTS

Figure 1. Pathway from Family Functioning to Anxiety Symptoms via Social Impairment.



*$p < .001$; all coefficients are unstandardized

Figure 2. Pathway from Family Functioning to Depression Symptoms via Social Impairment.



*$p < .001$; all coefficients are unstandardized

CONCLUSIONS

- ❖ In consideration of reviews that highlight the need for family-focused ASD research (Cridland, Jones, Magee, & Caputi, 2014; Greenlee et al., 2018), results suggest the importance of family functioning in youth social competence, and in turn the role of social competence in adolescent mental health.
- ❖ These results contribute to the understanding of mental health comorbidities in adolescents with ASD and could be used to inform adolescent social competence interventions at the family level.
- ❖ Results must be interpreted in light of study limitations, including the cross-sectional nature of the study and the homogeneous sample characteristics.
- ❖ Future research should continue to investigate the role of the family context in the lives of individuals with ASD while also deliberately sampling for more diverse subjects. Future research should also employ longitudinal designs to understand the impact of family functioning on social competence as development unfolds.

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