The Assessment of Anxiety in High-Functioning Adolescents with Autism

Susan W. White, Ph.D., Amie R. Schry, M.S., & Brenna B. Maddox, B.S.
Virginia Tech

ABSTRACT

Anxiety is common in people with high-functioning autism spectrum disorder (HFASD). This study was conducted to assess the reliability and construct validity of commonly used anxiety measures with a sample of 30 well-characterized adolescents with HFASD and comorbid anxiety disorders. Consistent with other studies in this area, results indicate that adolescents with HFASD likely under-report symptomatic impairment. Multiple raters, ideally across contexts, are important to accurately evaluate problems with anxiety. The measures assessed appear to be internally consistent, and there is evidence of discriminant validity.

INTRODUCTION

Autism and related conditions affect as many as 1 in 110 individuals. The fastest growing segment of the ASD population is not intellectually impaired (i.e., HFASD). Among people with HFASD, there is increasing recognition that anxiety is a frequent co-occurring problem, affecting approximately 40% to 45% of children and adolescents with HFASD. Recent studies indicate that anxiety may be especially problematic during adolescence for people on the spectrum. Although anxiety is common in adolescents with HFASD, there are no available measures that have been developed specifically for this population or that have been validated as such. Reliable and valid assessment tools are needed to accurately screen for and diagnose comorbid anxiety problems. We sought to evaluate the psychometric properties of two available, commonly used measures of anxiety in a clinical sample of adolescents with confirmed HFASD and comorbid anxiety disorders.

METHOD

PARTICIPANTS:
Participants (n = 30; 23 males; ages 12-17) were enrolled in a randomized controlled trial (RCT) of a cognitive-behavioral behavioral sample of adolescents with confirmed HFASD and comorbid anxiety disorders. All participants had a confirmed ASD diagnosis, at least one anxiety disorder, and a Verbal IQ (VIQ) ≥ 70.

- Mean age: 14.58 (±1.67) yrs
- Mean verbal IQ: 97.07 (±14.46)
- Race/Ethnicity: Caucasian (26), African-American (2), Asian (1), Pacific Islander (1)
- ASD Diagnoses: Aspergers (16), Autistic Disorder (10), PDD-NOS (4)

MEASURES

- Anxiety Disorders Interview Schedule for Children/Parents (ADIS-C/P): A semi-structured clinical interview with parent and child that assesses the major anxiety disorders experienced by youth.
- Autism Diagnostic Observation Schedule (ADOS): A semi-structured diagnostic assessment of ASD.
- Child and Adolescent Symptom Inventory-4 ASD Anxiety Scale (CASI-Anx): A dimensional rating of overall anxiety severity, completed by the parent and an additional reporter (CASI-Anx-P & CASI-Anx-O).
- Multidimensional Anxiety Scale for Children (MASC): A brief self-report measure that assesses the major dimensions of anxiety. T-scores ≥ 65 indicate clinically elevated anxiety, completed by the child (MASC-C) and parent (MASC-P).
- Short Mood and Feelings Questionnaire (SMFQ): A brief inventory of depressive symptoms in children and adolescents; parallel child (SMFQ-C) and parent (SMFQ-P) versions.
- Wechsler Abbreviated Scale of Intelligence (WASI): Brief measure of intelligence; two subscales were administered to derive Verbal IQ estimate.

RESULTS

- On the ADIS-C/P, the most common comorbid anxiety disorder was Social Phobia. About 75% (n = 23) met diagnostic criteria and 29 were at least sub-threshold for Social Phobia. Generalized Anxiety Disorder was diagnosed in 19 participants, Specific Phobia in 16, Obsessive-Compulsive Disorder in 4, Panic Disorder with Agoraphobia in 1, and Post-Traumatic Stress Disorder in 1.
- Internal consistency across measures was good to excellent, ranging from .85 (CASI-Anx-P) to .92 (MASC-C).
- On the MASC-C, 3 participants obtained elevated Inconsistency Index scores, indicating possible invalid responding. Only 7 participants had Total MASC-C scores exceeding threshold. Of the 3 participants with SoI, 11 had elevated scores (> 65) on the MASC-C Social Anxiety scale.
- Although parent- and child-reports of anxiety and depression were strongly correlated, parent-reports of anxiety (MASC-P, CASI-Anx-P) were more strongly correlated than were parent-reports of anxiety and depression (z = 2.31, p < .05).
- Total scores on the MASC-C/P and CASI-Anx-P/O were not related to either degree of ASD impairment (ADOS) or Verbal IQ (Table 1).

Table 1. Correlations among Study Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>MASC-C</th>
<th>CASI-Anx-P</th>
<th>CASI-Anx-O</th>
<th>MASC-P</th>
<th>CASI-Anx-P/O</th>
<th>ADOS</th>
<th>WASI</th>
<th>SMFQ-C</th>
<th>SMFQ-P</th>
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</thead>
<tbody>
<tr>
<td>MASC-C</td>
<td>1.00**</td>
<td>0.548**</td>
<td>0.548**</td>
<td>0.385*</td>
<td>0.420*</td>
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<tr>
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<td>0.420*</td>
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<td>0.420*</td>
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<tr>
<td>CASI-Anx-O</td>
<td>0.548**</td>
<td>0.420*</td>
<td>1.00</td>
<td>0.337</td>
<td>0.420*</td>
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<td></td>
</tr>
<tr>
<td>MASC-P</td>
<td>0.385*</td>
<td>0.315</td>
<td>0.337</td>
<td>1.00**</td>
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<tr>
<td>CASI-Anx-P/O</td>
<td>0.420*</td>
<td>0.420*</td>
<td>0.420*</td>
<td>1.00**</td>
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<tr>
<td>ADOS</td>
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<td>-0.036</td>
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<td>WASI</td>
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<td>0.00</td>
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<tr>
<td>SMFQ-C</td>
<td>0.315</td>
<td>0.337</td>
<td>0.337</td>
<td>0.315</td>
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<tr>
<td>SMFQ-P</td>
<td>0.420*</td>
<td>0.420*</td>
<td>0.420*</td>
<td>0.420*</td>
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</tbody>
</table>

CONCLUSIONS

- The measures evaluated in this study appear to be reliable with respect to internal consistency, with derived alpha coefficients similar to those reported for neurotypical samples. Correlations across raters on the same measures of anxiety were not significant, and the shared variance between parent and youth on the MASC was just above 13%. The degree of rater discrepancy seen here is similar to effect sizes reported in studies of non-ASD children. In conclusion, the measures are psychometrically reliable, but it is important to gather information from multiple raters as inter-rater discrepancies are considerable.

- Based on these findings, it is not clear that the MASC self-report is a valid assessment tool for adolescents with HFASD. Relatively few adolescents self-reported clinically elevated impairment on the MASC, despite the fact that they were diagnosed with anxiety disorders and enrolled into a treatment study for anxiety. It is not possible, from these data, to determine if the questionable validity reflects lack of insight, unwillingness to disclose anxiety problems, or defensiveness, or alternatively if it is a problem specific to this measure (e.g., wording of the items).

- Social anxiety appears to be especially prevalent among adolescents with HFASD, although most of the participants met criteria for multiple anxiety disorders.

LIMITATIONS/FUTURE DIRECTIONS

- Although all ASD and anxiety disorder diagnoses were confirmed using gold standard diagnostic tools, the sample was small, and all families were treatment-seeking. As such, findings cannot be generalized to adolescents with HFASD without co-occurring anxiety disorders in the community. Moreover, there was no single measure administered to all respondents (self, parent, other).

- Given the importance of accurate identification of co-occurring problems with anxiety among youth with HFASD, and the pervasiveness of such problems, it is important that research in this area continue to strive for the identification of “best practice” measures of anxiety in HFASD.

Annual Convention of the Association for Psychological Science
Washington, DC
May 26-29, 2011
Correspondence to: sw@vt.edu