Prevalence and Correlates of Aggression in Children and Adolescents with Autism Spectrum Disorders

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Abstract

Aggression is a clinically significant problem for many children and adolescents with autism spectrum disorders (ASD). However, there have been few large-scale studies addressing this issue. The current study examined the prevalence and correlates of physical aggression in a sample of 1584 children and adolescents with ASD enrolled in the Autism Speaks Autism Treatment Network.

The prevalence of aggression was 53%, with highest prevalence among young children. Aggression was significantly associated with a number of clinical features, including self-injury, sleep problems, sensory problems, GI problems, communication and social functioning. In multivariate models, self-injurious behavior, sleep problems, sensory problems, and GI problems were most strongly associated with aggression.

Methods

Participants:
1,584 children and adolescents (ages 2-17) with ASD enrolled in Autism Speaks Autism Treatment Network, a large North American multi-site network of 17 autism centers. Data were collected at enrollment into the clinical registry.

Measures:

ATN Parent Survey (parents reported whether symptoms were currently present; “Yes” or “No”)
- Physical Aggression
- Self-Injury
- GI Problems

Parent Report Measures:
- Vineland Adaptive Behavior Scales, 2nd Ed.
- Children’s Sleep Habits Questionnaire (CSHQ)

Performance Measures
- Autism Diagnostic Observation Schedule
- Full Scale IQ

Results

Sample Characteristics and Group Comparisonsa

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total Sample (n = 1584)</th>
<th>Aggression (n = 851)</th>
<th>No Aggression (n = 733)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>5.9 (3.4)</td>
<td>5.7 (3.3)</td>
<td>6.1 (3.6)</td>
<td>.026</td>
</tr>
<tr>
<td>IQ</td>
<td>76.3 (23.9)</td>
<td>76.0 (23.6)</td>
<td>76.7 (24.2)</td>
<td>.58</td>
</tr>
<tr>
<td>Sex (% male)</td>
<td>83.5%</td>
<td>84.4%</td>
<td>82.4%</td>
<td>.29</td>
</tr>
<tr>
<td>Parent Education (% HS)</td>
<td>14.1%</td>
<td>16.5%</td>
<td>11.5%</td>
<td>.001</td>
</tr>
<tr>
<td>Verbal Status (% Nonverbal)</td>
<td>55.7%</td>
<td>46.1%</td>
<td>42.3%</td>
<td>.13</td>
</tr>
<tr>
<td>Vineland Communication</td>
<td>73.9 (16.0)</td>
<td>72.5 (15.8)</td>
<td>75.5 (16.1)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Vineland Socialization</td>
<td>76.5 (14.5)</td>
<td>74.2 (14.6)</td>
<td>77.1 (14.2)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Sensory Problems (SSP)</td>
<td>130.6 (24.1)</td>
<td>125.7 (22.6)</td>
<td>136.4 (24.5)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Sleep Problems (CSHQ)</td>
<td>48.1 (9.4)</td>
<td>50.0 (9.9)</td>
<td>45.9 (8.3)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Self Injury (% present)</td>
<td>35.6%</td>
<td>51.8%</td>
<td>16.8%</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>GI Problems (% present)</td>
<td>43.3%</td>
<td>54.5%</td>
<td>38.9%</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

*Variables not retained included parent education, GI problems, Vineland Communication & Socialization

Conclusions

- Aggression is markedly prevalent in children and adolescents with ASD
- Co-occurring problems are strongly associated with aggression, particularly self-injury, sleep problems, and sensory problems
- Further research is needed to examine the longitudinal course & predictors of aggression in children with ASD

Acknowledgements

This research was conducted as part of the Autism Treatment Network (ATN). We acknowledge the members of the Autism Treatment Network (ATN) for use of the data and the families who participated in the Registry.

Collaborating with the ATN

To obtain access to the ATN Custom Forms or for information on collaborative research activities, please go to: www.autismspeaks.org/atn

References

- Thompson Center for Autism & Neurodevelopmental Disorders, University of Missouri
- Kennedy Krieger Institute, Johns Hopkins University School of Medicine

Objectives

1) To examine the prevalence of aggression in a large, well-characterized sample of children with ASD
2) To examine whether children with aggression differed from those without aggression in demographic, functional, or symptomatic factors.

Introduction

- Aggression has serious negative consequences.
- Few large-scale studies have examined the prevalence of aggression in children with ASD.
- Few studies have focused on specific clinical features that may relate to aggression, including:
  - Factors associated with aggression in the general population (e.g., age, sex, IQ, parental education, communication & social skills)
  - Symptoms that often co-occur with ASD (e.g., GI problems, sleep problems, & self-injurious behavior)

Results

Cross-Sectional Predictors of Aggression: Forward Stepwise Logistic Regression

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>p</th>
<th>OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-0.33</td>
<td>.043</td>
<td>.97</td>
</tr>
<tr>
<td>Self Injury</td>
<td>1.47</td>
<td>&lt;.001</td>
<td>4.36</td>
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<tr>
<td>Sleep Problems</td>
<td>0.27</td>
<td>&lt;.001</td>
<td>1.03</td>
</tr>
<tr>
<td>Sensory Problems</td>
<td>-0.13</td>
<td>&lt;.001</td>
<td>.99</td>
</tr>
</tbody>
</table>

*Group comparisons were conducted with chi-square tests for categorical variables, and ANOVA for continuous variables

*Aggression was defined as present/absent based on the ATN Parent Survey (“intentionally hits, bites others, etc.”)