Adaptive Behavior in Boys with Fragile X Syndrome, Autism, & Siblings of Children with Autism

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Fragile X Syndrome

- Fragile X syndrome (FXS) is a single gene disorder on the X chromosome and the most common inherited cause of developmental disabilities affecting approximately 1 in 3,600 individuals
- Behavioral Characteristics
  - Cognitive difficulties
  - Motor delays
  - Social anxiety
  - Communication delays
- 30-50% meet criteria for autism

Autism

- Autism is the most severe form of a spectrum of related developmental disorders referred to as the autistic spectrum disorders (ASDs) diagnosed through behavioural testing
- Behavioral Characteristics
  - Atypical social interaction
  - Delayed verbal and non-verbal communication
  - Stereotypical, repetitive patterns of behaviour, interests, and activities
- Siblings of children with autism – Recurrence rate 5-10%

- How do boys with FXS, boys with autism, siblings of children with autism and typical controls differ in the development of adaptive behavior?
## Methods

- Data drawn from 3 sources:
  - Ongoing longitudinal study on the early indicators of autism in high-risk infants – Dr. Roberts – University of South Carolina
  - Carolina Fragile X Database – Dr. Bailey – University of North Carolina
  - National Database for Autism Research (NDAR)

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>M age (Mo)</th>
<th>Min age (Mo)</th>
<th>Max age (Mo)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical</td>
<td>15</td>
<td>9</td>
<td>5</td>
<td>34</td>
</tr>
<tr>
<td>FXS</td>
<td>99</td>
<td>28</td>
<td>7</td>
<td>55</td>
</tr>
<tr>
<td>ASIB</td>
<td>12</td>
<td>9</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td>Autism</td>
<td>44</td>
<td>36</td>
<td>26</td>
<td>48</td>
</tr>
</tbody>
</table>
Adaptive Behavior Composite Standard Scores

Predicted ABC Score

Age in Months

F (7,161) = 35.70, p = <.0001
Results Summary

• There are significant differences between groups on all domains and composite scores
• There is an interaction between age and standard scores on all domains and composite scores for the FXS group, where scores decreased across ages
• At 12 Months, there are differences between the FXS group, ASIBS and typical children for the following domains:
  • ABC, Communication, Daily Living, Motor Skills
Results Summary

• Clinically significant delays for FXS evident at:
  • 27 months – ABC
  • 29 months – Motor Skills
  • 32 months – Daily Living
  • 36 months – Communication
  • 38 months – Socialization

• Clinically significant delays for Autism evident at:
  • From age of diagnosis (25 months) to 36 months - Communication