Examining the association between stress and problem behaviours in adults with autism

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Autism and Stress

- People associate autism with stress

- People with autism do have high basal stress levels (Goodwin, 2006)
Measures: Problem Behaviours

Stressors

Inability to use social buffers

Problem behaviours

Increased stress

Baron, Groden, Groden & Lipsitt (2006)
Research Hypothesis

$H_0$: Mean Overall Stress Scores for ‘problem behaviour’ and ‘no problem behaviour’ groups are equal

$H_1$: Mean Overall Stress Scores for ‘problem behaviour’ and ‘no problem behaviour’ groups are not equal
Design

Adults with autism
AND intellectual disabilities

1. Experiencing problem behaviours
2. Not experiencing problem behaviours
### Measures: Stress

#### The Stress Survey
Schedule for Individuals with Autism and Other Pervasive Developmental Disabilities

<table>
<thead>
<tr>
<th>1. Receiving a present</th>
<th>None to mild</th>
<th>Mild to moderate</th>
<th>Moderate to severe</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Having personal belongings or objects out of order</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. Waiting to talk about desired topic</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. Having a change in schedule or plans</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. Being near noise or disruption by others</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Analysis

1. Overall SSS Score
   T-test

2. SSS Subscale Scores
   T-test

2. Variation in overall stress scores
   Linear regression
### Sample

<table>
<thead>
<tr>
<th>Problem Behaviours?:</th>
<th>Problem Behaviours?:</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes (n=15)</td>
<td>No (n=9)</td>
<td>p = 0.808 †</td>
</tr>
<tr>
<td>Male</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>Female</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Mean Age</td>
<td>41.9</td>
<td>39.6</td>
</tr>
<tr>
<td>Mean Ability Score</td>
<td>12.7</td>
<td>10.9</td>
</tr>
<tr>
<td>Epilepsy: Yes</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Sleep Problems: Yes</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Psychotropic</td>
<td>13</td>
<td>5</td>
</tr>
<tr>
<td>Medication Use: Yes</td>
<td></td>
<td>p = 0.088 †</td>
</tr>
<tr>
<td>Other Mental Health Problems: Yes</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Visual Problems: Yes</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Hearing Problems: Yes</td>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>

* = Chi Square Test
† = Student t-test
Results

Overall Stress Scores for People With and Without Problem Behaviours

- Problem behaviours
  - No
  - Yes

Overall Stress Scores

$p=0.034$
Results

Scatterplot of Mean Stress Score vs Stress Subscale

Mean Stress Scores vs Stress Subscale

- **Changes**
- **Anticipation**
- **Unpleasant**
- **Positive**
- **Sensory/Personal**
- **Food-related**
- **Social/Environmental**

Groups:
- No PB
- PB

Food-related, p=0.035
All other categories p>0.05
Post hoc Multivariate Analysis

- Presence or absence of:
  - Problem behaviours
  - Sleep problems
  - Epilepsy
  - Hearing impairment
  - Visual impairment
  - Other mental ill health
- Use of psychotropic medication
- Ability and development score
- Gender
• Backward multivariate analysis (gender + PB/no PB):
  – Adjusted R square = 0.317

• Gender alone:
  – Independent sample t-test: Overall Stress Scores
    Males > Females, $p = 0.025$
Discussion

- Primary outcome: Evidence to reject $H_0$
- Limitations to the Stress Survey Schedule?
- Post hoc analysis:
  - Males have significantly higher overall stress scores than females
Conclusions

• High stress scores in adults with autism

• Explore validity of Stress Survey Schedule and objective measures of stress

• Examine gender influences

• Future research into stress management in autism
References

• Goodwin M., Groden J., Velicer W. et al. (2006) Cardiovascular arousal in individuals with autism. Focus on Autism and other Developmental Disabilities. 21


Questions?