Presentation and Assessment of Psychiatric Symptoms in Children and Adolescents with ASD

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Objectives

• Obstacles in assessment of psychiatric symptoms in children and adolescents with Autism Spectrum Disorders (ASD) & current literature.

• *Children’s Interview for Psychiatric Syndromes-Parent Version (P-ChIPS)* in a sample of clinically-referred children and adolescents with ASD

• Review psychiatric presentation as measured by the *P-ChIPS*. 
DSM-IV Diagnostic Criteria

• Autism Spectrum Disorders
  – Autism, Aspergers, PDD-NOS

• Autism: Qualitative impairment in:
  – Social Interactions
  – Communication
  – Restricted, repetitive, and stereotyped behavior, interests, and activities.
Prevalence

- An average of 1 in 110 children in the United States have an ASD.
- Gender differences: 4-5 times more likely in males
- Intellectual Disability: 41% on average with Intellectual Disability
Emotional and Behavioral Problems in ASD

• High rates of behavior and emotional problems
  – tantrums, mood swings, aggression, self-injury, and irritability.

• Psychiatric disorders are also quite prevalent;
  – the most commonly-reported are disruptive behavior, mood, and anxiety disorders.
Wide range of prevalence rates

- ADHD: 17-74%,
- Bipolar Disorder: 2-27%,
- Major depression/Dysthymia: .9-37%,
- GAD: 2-13%,
- OCD: 1-46%,
- ODD: 1-30%,
- Separation anxiety: .5-13%
- Specific phobia: 8.5-44%.
Wide Range of Prevalence Rates: Possible Explanations

• Obstacles inherent in ASD assessment
• Instruments used
• Method’s used
• Definitions of psychopathology
Obstacles in Assessment of Psychiatric Symptoms

ASD Symptoms

• Language Impairments
  – Expressive Language
    • Mild Deficits-Nonverbal

• Social Impairments
Obstacles in Assessment of Psychiatric Symptoms

• Social Impairments
  – Difficulty understanding/articulating emotions
  – Interaction with clinicians

• Wide range of symptoms presentation
  – Comorbid diagnosis or part of ASD diathesis?
Obstacles in Assessment of Psychiatric Symptoms

• Intellectual disability
  – Difficulty understanding and expressing complex cognitive phenomena

• Cognitive Impairments
  – “theory of mind”,
  – complex information processing,
  – central coherence,
  – executive functioning
Consequences

- Rely on third parties for reports of behavior and emotion
- Use of behavioral equivalents
  - Depression: self-injury, aggression, spitting, yelling, refusing preferred activities, loss of response to reinforcers
  - Mania: loud inappropriate laughing, excessive giddiness, more noisemaking or screaming
Behavioral Equivalents

• Lack of empirical research supporting
• May just indicate overall impairment rather than specific disorders
• Further research is needed
Implications of Obstacles

• Assessment instruments and methods for non-ASD individuals may not be valid in this population and may require modification

• Clinicians and researchers are defining psychiatric disorders differently-lack of reliability
Wide Prevalence Rates: Possible Explanations

- Obstacles inherent in ASD assessment
- Instruments used
- Method’s used
- Definitions of psychopathology
Instruments used

• Rating Scales
  – Child Behavior Checklist (CBCL)
  – Child and Adolescent Symptoms Inventory (CASI)
  – Rely on parent report
  – Not always directly correspond to DSM criteria
Measurement Gold Standard - Structured Interview

- Structured Interviews (K-SADS, DISC)
- Following Interview with clinical interview to confirm diagnosis
- Modifying criteria
- Paucity of research on validity of these instruments in ASDs
Structured Interviews in ASD

• Leyfer et al (2006) modified the K-SADS and attempted to validate
  – Only select disorders,
  – Sample largely higher functioning,
  – Modified criteria.
Children’s Interview for Psychiatric Syndromes-Parent Version (Witwer et. al, 2012)

• Primary Objective: Examine the reliability and validity of the P-ChiPS.
  – Reliability
    • Interrater reliability
    • Internal Consistency
  – Concordant validity
    • Agreement between the P-ChiPS and the Child and Adolescent Symptom Inventory (CASI)
  – The impact of IQ, language, and age on interrater reliability and concordance
Method

• Parents of 61 children and adolescents 6-17 years old with an ASD
  – Interviewed with the P-ChIPS and Autism Diagnostic Interview-Revised (ADI-R)
  – Completed the Child and Adolescent Symptom Inventory (CASI) and Nisonger Child Behavior Rating Form (NCBRF).
  – Youngsters were administered the Stanford-Binet V IQ test.
  – Compensated for time
• Second rater reviewed 43 videotaped interviews for reliability
## Participants

<table>
<thead>
<tr>
<th>Participant Characteristics</th>
<th>Mean (SD)/n, (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Children</strong></td>
<td></td>
</tr>
<tr>
<td>Age (in years)</td>
<td>11.2 (3.8)</td>
</tr>
<tr>
<td>Gender (n, % male)</td>
<td>50 (82%)</td>
</tr>
<tr>
<td>Ethnicity (n, % Caucasian)</td>
<td>47 (77%)</td>
</tr>
<tr>
<td>IQ (n=58)</td>
<td></td>
</tr>
<tr>
<td>IQ ≥85</td>
<td>13 (22.4%)</td>
</tr>
<tr>
<td>IQ 70-84 (Borderline)</td>
<td>9 (15.5%)</td>
</tr>
<tr>
<td>IQ 69-55 (Mild)</td>
<td>18 (31.0%)</td>
</tr>
<tr>
<td>IQ 54-40 (Moderate)</td>
<td>18 (31.0%)</td>
</tr>
</tbody>
</table>
## Results: Interrater Reliability

<table>
<thead>
<tr>
<th>Disorder</th>
<th>Diagnostic Agreement (kappa)</th>
<th>Symptoms Agreement (ICC)</th>
<th>Overall Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADHD</td>
<td>Poor to good</td>
<td>Excellent</td>
<td>63-97%</td>
</tr>
<tr>
<td>Disruptive Disorders</td>
<td>Excellent</td>
<td>Excellent</td>
<td>88-93%</td>
</tr>
<tr>
<td>Anxiety Disorders</td>
<td>Fair to Excellent</td>
<td>Excellent</td>
<td>88-100%</td>
</tr>
<tr>
<td>MDD/Dysthymia</td>
<td>Fair</td>
<td>Good-Excellent</td>
<td>74%</td>
</tr>
<tr>
<td>Mania/Hypomania</td>
<td>Poor</td>
<td>Excellent</td>
<td>79%</td>
</tr>
</tbody>
</table>
Interrater Reliability and IQ

- Discrepancies between raters on GAD
  - Perfect agreement in those with IQ>70; only fair agreement in those with ID
- Discrepancies between raters on MDD
  - Poor agreement in those with IQ>70
Results: Concordance

• Concordance with CASI
• Kappa/ICC indicated fair concordance between the P-ChIPS and the CASI (i.e., .41 < kappa < .57) for the majority of disorders.
• The anxiety disorders (with the exception of GAD) had lower kappa values than those reported in non-ASD samples.
Implications: Content Changes

- **MDD/Mania**
  - Emphasis on onset, duration and change from baseline
  - Function of tantrums
- **ADHD**
  - Content of questions
- **GAD**
  - Social Content in questions
  - More research with lower functioning
Interpretation with Caution

- Nonverbal individuals
  - Most did not meet criteria for a number of disorders
  - Instrument requires some level of ability to express emotions/internal states
Secondary Objective

• Elucidate the clinical picture of psychiatric disorders in this population.
  – Rate of diagnoses and symptoms endorsed
  – Impact of IQ, language on frequency of endorsement.
  – Subsyndromal diagnoses and the impact of IQ and language
  – Validity of behavioral equivalents
## Rate of Symptoms and Diagnoses

<table>
<thead>
<tr>
<th>Disorder</th>
<th>Symptoms</th>
<th>Symptom criteria met</th>
<th>Criteria Met for Disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADHD</td>
<td>100%</td>
<td>67%</td>
<td>67%</td>
</tr>
<tr>
<td>ODD</td>
<td>100%</td>
<td>16%</td>
<td>16%</td>
</tr>
<tr>
<td>CD</td>
<td>82%</td>
<td>57%</td>
<td>50%</td>
</tr>
<tr>
<td>Phobia</td>
<td>87%</td>
<td>71%</td>
<td>67%</td>
</tr>
<tr>
<td>GAD</td>
<td>69%</td>
<td>26%</td>
<td>25%</td>
</tr>
<tr>
<td>OCD</td>
<td>47%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>MDD</td>
<td>98%</td>
<td>18%</td>
<td>15%</td>
</tr>
<tr>
<td>Mania</td>
<td>95%</td>
<td>21%</td>
<td>15%</td>
</tr>
</tbody>
</table>
Impact of IQ and language

• Impact of IQ on rates of disorders
  – Those with ID were less likely to meet criteria for GAD (\( \chi^2 = 12.95, p < .001 \)).
  – Verbal children were significantly more likely to be diagnosed with ODD (Fisher exact, \( p = .01 \)) and GAD (Fisher exact, \( p = .01 \)).
Impact of IQ/language on Symptoms

• Generalized Anxiety Disorder
  – Symptoms more frequent in IQ ≥ 70
    • Worry More than others
    • Hard to relax when worries
    • Trouble letting go of worries
  – Symptoms more frequent in verbal
    • Hard to relax when worries
    • Trouble letting go of worries
Subsyndromal

• Defined as those who fell 1-2 symptoms short of criteria but reported impairment

• GAD:
  – Those with ID more likely to be subsyndromal (28%) versus meet full criteria (8%)
  – Those without ID more likely to meet full criteria (50%) versus subsyndromal (n=18%)
Secondary analyses: Results

• Oppositional Defiant Disorder
  – No language more likely subsyndromal for ODD
Behavioral Equivalents

- Behavioral Equivalents
  - Only one association among seven behavioral equivalents examined
    - “Engages in meaningless body movements” was associated with MDD (Fischer exact, $p = .01$).
Steps toward elucidating psychopathology in ASD

• Reliable and valid means of assessment
• Examine symptom presentation
• Make recommendations for modifications to instruments and diagnostic system
Discussion

• P-ChIPS appears largely to be appropriate in this sample with small modifications.
  – Modifying some question content
    • questions with social content (e.g., ADHD and GAD).
    • in nonverbal individuals.
  – Caution in nonverbal individuals
Discussion

• Symptoms
  – Further attention to presentation of anxiety in lower functioning individuals
  – Further research is needed to separate out true comorbid presentation from behaviors associated with ASD
Discussions

• Modifications to the system and instruments
  – Include emphasis on onset and duration
  – Clear definitions of tantrums and irritability and work to define qualitative differences among disorders
  – More work on identifying and differentiating observable predictors
Support

• This study was supported by:
  – Ohio Department of Mental Health
Questions?
nisonger.osu.edu