Examining the internal and external validity of Neurobehavioral Disorder associated with Prenatal Alcohol Exposure (ND-PAE) in a prospective clinical sample.

James Sanders, PhD. RPsych.
Presenter Disclosure

• Presenter’s Name: James Sanders

• I do not have an affiliation with commercial entities.

• This program has not received any financial or in-kind support from any commercial or other organization.
Diagnosis of FASD

• Diagnosis of FASD needed to access services
• Multidisciplinary clinical assessment costly
ND-PAE

• Neurobehavioural Disorder associated with Prenatal Alcohol Exposure (ND-PAE)
• Section III of DSM-5 as a Condition for Further Study
• Little empirical research on ND-PAE criteria
ND-PAE Criteria

A. More than minimal exposure during gestation...
B. Impaired neurocognitive functioning (1 of 5 symptoms)
C. Impaired self-regulation (1 of 3 symptoms)
D. Impaired adaptive functioning (2 of 4 symptoms)
E. Onset in childhood
F. Causes clinically significant distress or impairment
G. Not better explained by other medical or environmental factors

• https://doi.org.ezproxy.uleth.ca/10.1176/appi.books.9780890425596
Kable et al. (2018)

- Evaluated internal validity of ND-PAE criteria
- Retrospective data from 56 children age 3-10 in a math intervention study
- Tested -1.5 SD and -1.0 SD as criterion for impairment
- Tested 1 symptom and 2 symptoms from Adaptive Functioning domain
- Most of the domains demonstrated internal validity
- Cutoff of 2 for Adaptive Functioning domain deemed too strict
Evaluating ND-PAE

• Sanders, Hudson Breen, Netelenbos (2017)
  – Retrospective analysis of on 82 clinic patients
  – Clinic files reviewed cutoff of -2SD
  – FASD and ND-PAE moderately correlated (Cramer $V_{[82]} = 0.44, \ p < 0.01$)
  – ND-PAE possessed inflated specificity but low sensitivity
  – ND-PAE criteria too strict
Gaps in ND-PAE research

- Based on retrospective data
- Disconnect between norm-referenced testing and descriptive psychiatry (DSM)
  - Some domains are better measured through norm-referenced testing (i.e. IQ), while others are better measured through clinical description (i.e. mood/behavioral regulation)
Current Study

- 36 pediatric clients ages 7-15 (mean 10.6(2.4))
- 58.3% female (n=21)
- 69.4% diagnosed with FASD (n=25)
- DSM-5 Criterion for Clinical Significance: “the disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning”
- ND-PAE symptoms identified collectively by the clinic team led by the psychologist until consensus was reached
Results

- 41.7% of sample (n=15) met ND-PAE
- FASD & ND-PAE were correlated (Cramer’s $V=.56$) but ND-PAE conservative

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<tr>
<td></td>
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Results

• Superdomains
  – Neurocognitive Function 88.9% (n=32) (1 in 5)
  – Self-Regulation 80.6% (n=29) (1 in 3)
  – Adaptive Function 41.7% (n=15) (2 in 4)*
    • *One of which must be #1 or #2

• Symptoms (most & least common)
  – Attention 80.6% (n=29) & EF 80.6% (n=29)
  – Daily Living Skills 16.7% (n=6) & IQ 19.4% (n=7)
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Results

• Principal components analysis
  – Varimax rotation KMO test of sampling adequacy = .61, Bartlett’s test of sphericity significant ($\chi^2$ (36) = 150.02, $p < .05$)
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Components

1. Adaptive Behavior & Independent Living Skills
   – IQ, Memory, Communication, Social Communication & Interaction, Daily Living Skills

2. ADHD
   – Attention, Impulse Control, (Mood/Behavioral & Social)
Components

3. Executive Functioning and Learning
   – EF, Learning, Visual-Spatial Reasoning, Mood/Behavioral Regulation

4. Motor Skills
   – Motor
Discussion

• This ND-PAE study appears to be the first:
  – prospective study
  – to use a descriptive psychiatry approach
• ND-PAE criteria strict
• General consistency in correlations between symptom domains
Discussion

• Re-conceptualization of ND-PAE
  1. Adaptive Behavior & Independent Living Skills
  2. ADHD
  3. Executive Functioning and Learning
  4. Motor Skills

• This re-conceptualization and other empirical-based approaches invite more research