Examining the Link Between Child Maltreatment and ADHD: A Meta-Analysis

Janelle Boram Lee, Kylee Hurl, Kristene Cheung, Jennifer Theule, & Brenna Henrikson
Department of Psychology, University of Manitoba, Canada

Attention Deficit Hyperactivity Disorder (ADHD)
- A neurodevelopmental disorder that is characterized by three main diagnostic features (APA, 2013)
  1. Inattentiveness
  2. Hyperactivity
  3. Impulsivity
- ADHD symptoms are characterized by social and academic impairments (APA, 2013)

Child Maltreatment (CM)
- Includes child physical abuse, sexual abuse, neglect, psychological abuse, and exposure to intimate partner violence (APA, 2013)
- Experience of CM is a significant risk factor for deficiencies in academic performance, such as academic underachievement, grade repetition, and disciplinary conflict (Steele, Land, & Dorn, 1993)

ADHD and CM
- Inconsistent findings on the relationship between ADHD and CM experiences
  - Children who experienced CM had higher prevalence rates of ADHD (Chuang et al., 2003)
  - The degree of hyperactive and aggressive symptoms did not differ between children with physical abuse experiences and children without (Whitehorn et al., 1993)

Objective
To clarify a possible association between ADHD and CM experiences

Research Questions
1. How large is the association between ADHD symptoms and CM experiences?
2. Do individuals with ADHD have higher levels of CM experiences compared to individuals without ADHD?
3. Do individuals with ADHD have increased odds of CM experiences compared to individuals without ADHD?
4. Do gender composition, mean age of sample, and bibliographic variables (i.e., type of publication, year of publication, and country of publication) moderate the link between ADHD and CM experiences?

Methods
A meta-analysis was conducted

<table>
<thead>
<tr>
<th>Records identified through database searching (n = 1025)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PsycINFO, Medline, ERIC, ProQuest Dissertations and Theses, Scopus, Google Scholar</td>
</tr>
<tr>
<td>Limits: English-language articles only</td>
</tr>
<tr>
<td>Published or prepared before June 2014</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Articles screened on basis of title and abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-text articles assessed for eligibility (n = 112)</td>
</tr>
<tr>
<td>Included (n = 19)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Full-text articles excluded, with reasons (n = 93)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No quantitative data (n = 18)</td>
</tr>
<tr>
<td>No eligible comparison (n = 29)</td>
</tr>
<tr>
<td>No eligible population (n = 25)</td>
</tr>
<tr>
<td>No eligible measure of CM (n = 11)</td>
</tr>
<tr>
<td>Non-independent data (n = 4)</td>
</tr>
<tr>
<td>Data in format not amenable to meta-analysis (n = 6)</td>
</tr>
</tbody>
</table>

19 studies met eligibility criteria
- 13 published and 6 unpublished reports
- Year of publication ranged from 1987 to 2014

Number of participants
- Total (n = 7,787)
- With ADHD (n = 1,970)
- Without ADHD (n = 5,817)

Each study was coded following a coding manual
Inter-coder reliability for all variables was 100%
Data was entered and analyzed using Comprehensive Meta Analysis (CMA) software (Borenstein, Hedges, Higgins, & Rothstein, 2014)

Results
1. Based on 3 effect sizes, there was a medium relationship between ADHD and CM experiences (r = 0.28, p < .001)
2. Based on 4 effect sizes, there was a medium difference in levels of CM experiences in individuals with ADHD compared to individuals without ADHD (d = 0.42, p < .001)
3. Based on 12 effect sizes, individuals with ADHD have 2.36 times the odds than individuals without ADHD of having CM experiences (p < .001)
4. The moderator analyses were non-significant
   - Gender composition (Q = 1.51, p = .220)
   - Mean age of sample (Q = 1.42, p = .254)
   - Type of publication (Q = 1.96, p = .161)
   - Year of publication (Q = 0.28, p = .598)
   - Country of publication (Q = 5.20, p = .158)

Discussion
- The evidence supports a connection between ADHD and CM experiences
- Individuals with ADHD are more likely to have CM experiences than individuals without ADHD
- The magnitude of the relationship between ADHD and CM experiences was not affected by gender nor age
- Bibliographic moderators did not bias the results
- Clinicians should be alert to consider ADHD symptoms as a risk factor for CM experiences
- Future research should explore possible links between ADHD subtypes and different CM types

References

Acknowledgments
Special thanks to the members of the Family and Developmental Psychopathology Lab for their helpful comments and suggestions. This research was funded by the Psychology Undergraduate Research Experience (PURE) award at the University of Manitoba.

Correspondence
Lee@myumanitoba.ca or Jen.Theule@umanitoba.ca

*Modified version of the PRISMA Flow Diagram
(Moher, Liberati, Tetzlaff, Altman, & The PRISMA Group, 2009)*

Presented at the National Association of School Psychologists 2015 Annual Convention, Orlando, Florida, February 17-20, 2015