Depressive Symptoms in Individuals with Persistent Post-Concussion Symptoms: A Systematic Review and Meta-Analysis


Background

Individuals with PPCS experience a variety of physical, cognitive, and behavioural/emotional symptoms that can have detrimental impacts on quality of life.1,2

MENTAL HEALTH IMPACTS

• Bidirectional link between mental health outcomes with PPCS
• Individuals with PPCS are more at risk of experiencing depressive symptoms and found to predict recovery time
• Multiple variables (age, sex, pre-existing mental health) identified as moderators of the relationship between depression and PPCS

Objectives

(1) To synthesize the association between depressive symptoms and PPCS in individuals across the lifespan
(2) To investigate potential moderators and determine if the association differed based on moderators

Methods

Records through database searching (n = 15,331)
Records title and abstract screened (n = 13,025)
Records excluded (n = 12,445)
Full-text articles screened (n = 580)
Full-text articles excluded (n = 538)
Studies included in analysis and review (n = 42)
Studies included in review (n = 18)

Results

Effect Size: Association of PPCS and Depression
• Significant positive association between PPCS and depressive symptoms (r = 0.44, p < 0.01)

Sample Characteristics & Moderator Analysis

<table>
<thead>
<tr>
<th>Moderator</th>
<th>Average</th>
<th>b</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (Years)</td>
<td>33.7</td>
<td>-0.002</td>
<td>0.67</td>
</tr>
<tr>
<td>Gender (% men)</td>
<td>53.7</td>
<td>0.001</td>
<td>0.73</td>
</tr>
<tr>
<td>History 2+ concussion (%)</td>
<td>36.1</td>
<td>0.004</td>
<td>0.61</td>
</tr>
<tr>
<td>History mental illness (%)</td>
<td>20.8</td>
<td>0.011</td>
<td>0.004</td>
</tr>
<tr>
<td>Time since injury (weeks)</td>
<td>21.3</td>
<td>0.001</td>
<td>0.76</td>
</tr>
</tbody>
</table>

• No significant moderators

Conclusions

• Need to gain more knowledge on PPCS and identifying variables that could affect prediction and intervention
• More focus on child and youth PPCS studies that investigate the relationship with depression is much needed
• Findings support the development of strategies for prevention and earlier intervention to optimize recovery trajectories of at-risk populations (i.e. mental health history)

References


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