A systematic review of the relationship between childhood maltreatment and risk of adolescent drug use

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Background: Among adolescents, drug use and abuse is a health concern because of the risk of acute harms, and increased likelihood of development of dependence [1]. It has been shown that childhood maltreatment is associated with drug addiction in adulthood [2]. However, the sequenced progression from drug use to dependence indicates a better understanding of the relationship between maltreatment and drug use is needed to improve prevention and interventions [3].

Aim: To determine the association between exposure to the early life stress of childhood maltreatment, specifically physical and sexual abuse, with adolescent illicit drug use.

Methods: A systematic search strategy was applied Embase, PsycINFO and Ovid MEDLINE(R) databases. Methods were based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement guidelines. Inclusion and exclusion criteria were applied. See Figure 1 for search strategy and search terms.

Literature search
Limits: Title and abstract contents (tw.)
(n = 7914)

After removing duplicates
(n = 5269)

Full text articles assessed for eligibility
(n = 95)

Articles excluded after title/abstract screening (n = 5174)
Animal studies: 82
Conferences, lectures and dissertations: 767
Not English language: 343
Not relevant for aims: 3166
Reviews and books: 816

Articles excluded after full text screening
(n = 84)
Samples of drug users only: 2
Samples of clinic inpatients: 3
Studies of alcohol or tobacco: 30
Studies of addiction/abuse only: 5
Not according to aims: 26
Outside of age range: 11
Qualitative research: 3
Exposure mixing physical and sexual abuse with other class of maltreatment: 2
Outcome mixing drugs and alcohol use: 1
Not measuring association, only prevalences: 1

Studies included after key reference screening
(n = 2)
Hayatbakhsh et al., 2009c
Lansford et al., 2010

Total included
(n = 13)

Figure 1. Flowchart of search results and clusters of search terms

Results: Of 7914 identified articles, 13 were included. A significant association between childhood maltreatment and adolescent drug use was shown in 11 studies. Six studies assessed both physical abuse and sexual abuse separately; when comparing them four showed a stronger association with physical abuse in comparison with sexual abuse, one showed a stronger association with sexual abuse and one did not show differences among abuse categories. The effect of covariates was demonstrated by comparing unadjusted and adjusted models. It was shown that the number of times that each traumatic event occurred may increase the association between exposure and outcome. Cannabis was the most studied drug. It was shown that even when studying an individual drug, rather than any illicit drug use, association persisted in most cases.

<table>
<thead>
<tr>
<th>Study</th>
<th>Physical abuse</th>
<th>Sexual abuse</th>
<th>Physical and sexual abuse</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adlaf et al., 1996</td>
<td>b = 0.049 (t = 0.015)</td>
<td>p &lt; 0.001 (0.8)</td>
<td>p &lt; 0.001 (1.0-2.3)</td>
<td>217</td>
</tr>
<tr>
<td>Benjet et al., 2004</td>
<td>b = 2.07 (1.02-2.43)</td>
<td>p &lt; 0.0001</td>
<td>1.68 (0.52-5.42)</td>
<td>3005</td>
</tr>
<tr>
<td>Dubowitz et al., 2016</td>
<td>Heavy use 1.23 (0.72-2.08)</td>
<td>Heavy use 0.80 (0.47-1.37)</td>
<td>702</td>
<td></td>
</tr>
<tr>
<td>Fergusson et al., 2008</td>
<td>b = 0.56 (S.E. = 0.14)</td>
<td>p &lt; 0.0001</td>
<td>B = 0.02 (p &gt; 0.001)</td>
<td>1265</td>
</tr>
<tr>
<td>Hayatbakhsh et al., 2009a</td>
<td>3 or more times 2.0 (1.1-3.5)</td>
<td>p &lt; 0.05</td>
<td>2373</td>
<td></td>
</tr>
<tr>
<td>Hayatbakhsh et al., 2009b</td>
<td>Penetrative 1.8 (1.3-2.7)</td>
<td>p &lt; 0.01</td>
<td>3754</td>
<td></td>
</tr>
<tr>
<td>Hayatbakhsh et al., 2009c</td>
<td>3 or more times O.2 (1.4-3.3)</td>
<td>F 3.6 (2.0-6.4)</td>
<td>p not reported</td>
<td>3285</td>
</tr>
<tr>
<td>Huang et al., 2011</td>
<td>Past year 1.40 (1.10-1.78)</td>
<td>p &lt; 0.01</td>
<td>Past year 0.80 (0.47-1.36)</td>
<td>4882</td>
</tr>
<tr>
<td>Lansford et al., 2010</td>
<td>Positive significant correlation</td>
<td>585</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lau et al., 2005</td>
<td>Beaten to injury 2.07 (p &lt; 0.001)</td>
<td>95788</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mills et al., 2017</td>
<td>1.74 (0.91-3.34)</td>
<td>p = 0.095</td>
<td>1.45 (0.77-2.72)</td>
<td>p = 0.247</td>
</tr>
<tr>
<td>Moran et al., 2004</td>
<td>2.91 (p &lt; 0.001)</td>
<td>3.74 (p &lt; 0.001)</td>
<td>17.38 (p &lt; 0.001)</td>
<td>2164</td>
</tr>
<tr>
<td>Southwick Bensley et al., 1999</td>
<td>L.2B (1.8-4.4)</td>
<td>H 3.4 (1.9-5.9)</td>
<td>p not reported</td>
<td>4790</td>
</tr>
</tbody>
</table>

Conclusions: Evidence supports a relationship between childhood maltreatment and adolescent drug use, although relevant differences in association between classes and subtypes of maltreatment can be found. The vast majority of the included studies are confirming the hypothesis that childhood maltreatment is indeed a risk factor for the onset of drug use during adolescence, which increases risk for addiction problems in adulthood. It is important for policy makers to incorporate this knowledge into public health agendas, focusing on early life stages and ways to avoid and address trauma and stress. Regarding clinical practice, it is important to acknowledge this in order to proficiently identify and screen high risk subjects during clinical appointments.

References: