Aetiology

Early childhood risk factors differentiated juvenile onset from adult onset major depressive disorder


QUESTION: Are childhood biopsychosocial risk factors associated with juvenile onset different from those associated with adult onset major depressive disorder (MDD)?

Design
Birth cohort followed for 26 years (Dunedin Multidisciplinary Health and Development Study).

Setting
Dunedin, New Zealand.

Participants
1037 children (91% of eligible births) who were born between April 1972 and March 1973 and participated in the first follow up assessment at 3 years of age. 998 study participants (96% of the birth cohort) completed ≥2 psychiatric interviews at ages 11, 13, or 15 years and at 18, 21, or 26 years, and were included in the analysis.

Assessment of risk factors
Childhood risk factors were assessed up to 9 years of age: neurodevelopmental characteristics (perinatal insults, gross motor skills, and intelligence quotient); parental characteristics (mother’s internalising symptoms, including depression and anxiety, mother–child interactions, criminal conviction history, and parental disagreement about discipline); family characteristics (number of residence changes, socioeconomic status, unwanted sexual contact, and loss of a parent); and child behaviour and temperament (inhibited or undercontrolled temperament, peer problems, and depressive symptoms).

Main outcomes
Relation of childhood risk factors to juvenile onset (diagnosis at ≤15 y) and adult onset (diagnosis at ≥18 y) MDD.

Main results
The participants comprised 4 groups: juvenile depressed (first diagnosed with MDD at age 17, 20, or 25 y [n=314]), juvenile/adult depressed (first diagnosed with MDD at age 10, 12, or 14 y and whose depression recurred in adulthood by age 26 [n=34]), and never depressed (never diagnosed with MDD [n=629]). Juvenile onset with or without recurrence of MDD in adulthood was associated with more childhood risk factors than purely adult onset MDD (table). No differences in childhood risk factors existed between the adult onset MDD group and the never depressed group except for being subjected to inappropriate sexual contact and more residence changes.

Conclusion
Early childhood risk factors differentiated juvenile onset from adult onset major depressive disorder.

### Childhood risk factors associated with juvenile (J) and juvenile/adult (J/A) onset v adult (A) onset major depressive disorder

<table>
<thead>
<tr>
<th>Childhood risk factors</th>
<th>J</th>
<th>J/A</th>
<th>A</th>
<th>J + J/A- A</th>
<th>Effect size†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of perinatal insults</td>
<td>1.48</td>
<td>0.76</td>
<td>0.68</td>
<td>0.34</td>
<td></td>
</tr>
<tr>
<td>Gross motor skills (z scores)</td>
<td>-1.94</td>
<td>-0.92</td>
<td>0.15</td>
<td>0.66</td>
<td></td>
</tr>
<tr>
<td>Mother’s internalising symptoms</td>
<td>3.81</td>
<td>2.67</td>
<td>2.14</td>
<td>0.40</td>
<td></td>
</tr>
<tr>
<td>Parents’ criminal conviction history (%)</td>
<td>40.0</td>
<td>28.1</td>
<td>13.2</td>
<td>0.62</td>
<td></td>
</tr>
<tr>
<td>Number of parent figure changes</td>
<td>0.56</td>
<td>0.80</td>
<td>0.23</td>
<td>0.68</td>
<td></td>
</tr>
<tr>
<td>Parental loss (%)</td>
<td>19.0</td>
<td>29.4</td>
<td>13.1</td>
<td>0.47</td>
<td></td>
</tr>
<tr>
<td>Teacher rated peer problems</td>
<td>2.21</td>
<td>1.68</td>
<td>0.98</td>
<td>0.67</td>
<td></td>
</tr>
<tr>
<td>Teacher rated worried or fearful</td>
<td>2.07</td>
<td>1.68</td>
<td>1.27</td>
<td>0.46</td>
<td></td>
</tr>
<tr>
<td>Teacher rated hyperactive</td>
<td>1.76</td>
<td>1.48</td>
<td>0.79</td>
<td>0.70</td>
<td></td>
</tr>
<tr>
<td>Teacher rated antisocial</td>
<td>1.34</td>
<td>1.96</td>
<td>0.71</td>
<td>0.80</td>
<td></td>
</tr>
<tr>
<td>Child’s rating of depression</td>
<td>5.94</td>
<td>4.80</td>
<td>4.14</td>
<td>0.38</td>
<td></td>
</tr>
<tr>
<td>Inhibited temperament (%)</td>
<td>9.5</td>
<td>23.5</td>
<td>7.1</td>
<td>0.62</td>
<td></td>
</tr>
</tbody>
</table>

*Values are means unless otherwise stated. †All comparisons are statistically significant (p<0.05).

COMMENTARY

In the Dunedin Multidisciplinary Health and Development Study, a base sample of 1037 children was followed at age 3 years with psychological, medical, and sociological measures as part of a longitudinal investigation of health and behaviour.

The study population is a non-clinical epidemiological sample, which makes the study very special. The retention rate is fantastic. Some problems exist because they use different DSM criteria among the samples (DSM-III, DSM-III-R, and DSM-IV). Overall the study is well done and replicates less sophisticated studies that used checklists. They report that childhood biopsychosocial risk factors before the age of 9 years are associated with childhood and adolescent onset depression that may or may not recur in adulthood rather than adult onset depression. This study’s major shortcoming is the lack of structured 3 generational family history of psychiatric disorders. The authors asked parents about criminal history, and the mothers completed a questionnaire about internalising problems.

The most important take home message for clinicians is that juvenile onset depression that recurred in adulthood was characterised by a higher proportion of women, internalising problems, temperamental inhibition, adult anxiety, and history of parental loss in childhood than juvenile onset depression that did not recur in adulthood. Juvenile onset depression that did not recur in adulthood had a higher proportion of men, externalising behaviours (similar to Harrington et al’s findings), perinatal problems, conduct disorder, MDD, crime by parents, and difficult temperament than juvenile onset depression that recurred in adulthood.

The adult onset depression group did not differ from the adult control group without depression in early childhood risk factors except for being subjected to undesired sexual contact.

Elizabeth Weller, MD
University of Pennsylvania, Children’s Hospital of Philadelphia
Philadelphia, Pennsylvania, USA


Additional information appears on the Evidence-Based Mental Health website www.ebmentalhealth.com

Sources of funding:
National Institute of Mental Health and the UK Medical Research Council.

For correspondence: Dr S R Jaffee, Institute of Psychiatry, London, UK.
s.jaffee@topkcl.ac.uk
Early childhood risk factors differentiated juvenile onset from adult onset major depressive disorder

*Evid Based Mental Health* 2002 5: 125
doi: 10.1136/ebmh.5.4.125

Updated information and services can be found at:
http://ebmh.bmj.com/content/5/4/125

These include:

**Supplementary Material**
Supplementary material can be found at:
http://ebmh.bmj.com/content/suppl/2002/11/25/5.4.125.DC1

**References**
This article cites 3 articles, 0 of which you can access for free at:
http://ebmh.bmj.com/content/5/4/125#BIBL

**Email alerting service**
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

**Topic Collections**
Articles on similar topics can be found in the following collections

- Depressive disorder (570)
- Neurology (1070)
- Epidemiology (1570)

**Notes**

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/