Patterns of young children’s mental health: Insights from the population-level data in Canada

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Young people’s mental health – A global challenge
Tuesday 11 June 2019, Karlstad University, Sweden
A brief history

Dan Offord (1934-2004)
A brief history

• 1983 – the first Ontario Child Health Study run in collaboration between McMaster University and Statistics Canada led by Dan Offord and Michael Boyle

• Included a representative sample of 3,294 Ontario children aged 4 to 16 years

• A gold standard in psychiatric epidemiology

• OCHS contributed to the vision of “social reporting” at the community level that led to the Early Development Instrument for kindergarten children (5-6 year-olds)

• OCHS the sequel 2014: sample of 10,802 children 4-17 in Ontario led by Kathy Georgiades and Michael Boyle

• EDI ongoing, over 1 mln children in Canada (and beyond)
OCHS 2, 2014

- Compare patterns and levels of mental disorder in Ontario with estimates generated 30 years ago from the 1983 Ontario Child Health Study
- Find out if levels of disorder are linked to family income & poverty levels
- Find out if children & families are receiving the services they need
- Identify how families, neighbourhoods & schools can reduce the risk for children’s mental health problems
Prevalence of Mental Disorders

Ontario Child Health Study 2014

Prevalence of Any Anxiety Disorder

Ontario Child Health Study 2014

Prevalence of Any Behaviour Disorder

Ontario Child Health Study 2014

Prevalence of Mental Disorders

And having contact with mental health services

Ontario Child Health Study 2014

### Table 2. Changes in the Prevalence of Mental Disorder and Perceived Need for Professional Help by Age and Sex, 1983 and 2014.

<table>
<thead>
<tr>
<th></th>
<th>Total (n = 8621)</th>
<th></th>
<th>Males (n = 4347)</th>
<th></th>
<th>Females (n = 4274)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ages 4 to 16</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any disorder</td>
<td>15.99</td>
<td>18.39</td>
<td>17.05</td>
<td>19.87</td>
<td>14.90</td>
</tr>
<tr>
<td>Needs help</td>
<td>6.76</td>
<td>18.92</td>
<td>8.43</td>
<td>20.19</td>
<td>5.04</td>
</tr>
<tr>
<td><strong>Ages 4 to 11</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disorder</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct disorder</td>
<td>3.91</td>
<td>4.70^a</td>
<td>6.24</td>
<td>7.19^c</td>
<td>1.54</td>
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<tr>
<td>Hyperactivity</td>
<td>6.11</td>
<td>10.78</td>
<td>8.92</td>
<td>15.72</td>
<td>3.28</td>
</tr>
<tr>
<td>Emotional disorder</td>
<td>9.97</td>
<td>11.93</td>
<td>9.12</td>
<td>12.01</td>
<td>10.84</td>
</tr>
<tr>
<td>One or more disorders</td>
<td>15.37</td>
<td>19.57</td>
<td>17.28</td>
<td>24.17^i</td>
<td>13.45</td>
</tr>
<tr>
<td>Perceptions</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Ages 12 to 16</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disorder</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct disorder</td>
<td>7.18</td>
<td>2.52^b</td>
<td>10.26</td>
<td>3.08^d,e</td>
<td>4.02</td>
</tr>
<tr>
<td>Hyperactivity</td>
<td>5.22</td>
<td>6.26</td>
<td>7.06</td>
<td>8.56</td>
<td>3.33</td>
</tr>
<tr>
<td>Emotional disorder</td>
<td>9.23</td>
<td>13.17</td>
<td>4.70</td>
<td>8.59</td>
<td>13.88</td>
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<tr>
<td>One or more disorders</td>
<td>16.68</td>
<td>16.79</td>
<td>16.52</td>
<td>14.44^d</td>
<td>16.85</td>
</tr>
<tr>
<td>Perceptions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Needs help</td>
<td>6.00</td>
<td>15.05</td>
<td>5.87</td>
<td>12.90^h</td>
<td>6.14</td>
</tr>
</tbody>
</table>

Comeau et al. *Can. J. Psych 64 (4)*, 2019
Key findings from Ontario

• Overall, in 2014, still 1 in 5 children 4 to 17 years old meet criteria for at least 1 mental health disorder
• Only between 26% and 34% have contact with mental health care providers, though more have contact with other providers (e.g., school)
• Between times: Decline in conduct disorder among boys 12-16 (10.3% to 3%)
• Rise in prevalence of 1 or more disorders for 4-11 year-olds, largely driven by hyperactivity among boys
• Large increase in perceived need for professional help (6.8% to 18.9%)
Prevalence of the use of health services for mental illness among people aged 1 to 19 years

Public Health Agency of Canada, 2013
Call for “social reporting” at the community level (Offord et al. 1999): Need data to monitor child development over time, in context, reliably, for populations of children
Holistic measure of child development in 5 major developmental domains:

- Physical health and well-being,
- Social competence
- Emotional maturity
- Language and cognitive development
- Communication/general knowledge

Population-level measure:
Completed by Kindergarten teachers for each child

Janus & Offord, 2007

<table>
<thead>
<tr>
<th></th>
<th>1,393,531</th>
<th>12 of 13</th>
<th>27%</th>
<th>34%</th>
<th>20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed EDIs</td>
<td>Completed EDIs</td>
<td>Provinces &amp; territories</td>
<td>Of children vulnerable</td>
<td>Males vulnerable</td>
<td>Females vulnerable</td>
</tr>
<tr>
<td>The EDI information collected for five-year-old children in Canada since 2004</td>
<td>Canadian provinces and territories EDI has been implemented in</td>
<td>The number of children vulnerable in at least one developmental domain</td>
<td>The number of children vulnerable in at least one developmental domain by gender</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
All children are born ready to learn

But not all children enter kindergarten with optimal developmental health
Mental Health on the EDI

Emotional Maturity
  Anxious/fearful behaviour
  Hyperactive/inattentive behaviour
  Aggressive behaviour
  Prosocial behaviour
Tracking prevalence over time and across the country: anxious/fearful behaviours

The prevalence remained fairly consistent over time, ranging from 2.1% to 3.0% per year.

In Canada, the prevalence ranged from 1.1% (Prince Edward Island) to 5.0% (Northwest Territories).

Janus et al. unpublished
Explore group differences

• The EDI data in Canada are colour-blind
• But they are not sex-blind or SES-blind
Patterns of relationship between mental health subdomains and neighbourhood SES for boys and girls
Webb et al., Submitted
Why does it matter?

On their own, both EDI and OCHS are cross-sectional

Established predictive strength from EDI to academic outcomes (Davies et al. 2016, Guhn et al. 2016)

Studies based on EDI data linked with later health indicate association with socio-emotional functioning and early onset of mental health disorders

Children with high hyperactivity and aggression (10%), high co-morbid externalizing and internalizing (3%) EDI scores were more likely to be seen for mental health consultations between ages of 6 and 14 years (Thomson et al. 2019)
Prosocial Behaviours

0.31
Effect Size

Anxious Behaviour

-0.03
Effect Size

Grade 3
Reading, Writing & Numeracy

(Collie et al., 2018)
Refugee Children’s Early Emotional and Communication Functioning Predicts Academic Trajectories (K-7)

Gagné et al., 2018
Goldfeld et al., 2016, *Early Childhood Research Quarterly* 35(2)
Patel et al., 2016, *Early Childhood Research Quarterly* 35(2)
Papers using EDI data published in 2018

N=23

- Linkage: 65%
- Cross-sectional: 18%
- Protocol/data profile: 13%
- Intervention: 4%

https://edi.offordcentre.com/resources/bibliography-of-the-edi/
Opportunities and promise

• Increasingly, data are linked across databases
• Linkage studies do not solve problems, but often highlight population and sub-group issues previously unseen with sample-based results
• Often create opportunity for cost analyses – which may be convincing for policy-makers
• Together with prospective, targeted studies linked-data studies offer promise of better understanding of children mental health
Thank You!

https://edi.offordcentre.com/resources/bibliography-of-the-edi/
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References

Gagne, M. et al. 2018. Educational Psychology, 38(8), 1050-1067
Goldfeld et al., 2016, *Early Childhood Research Quarterly* 35(2), 31-39
Patel et al., 2016, *Early Childhood Research Quarterly* 35(2), 49-62


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