How are Ontario’s Children & Youth Doing?
Findings from the 2014 Ontario Child Health Study

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Outline

1. Prevalence & Correlates of Child and Youth Mental Disorder
2. Prevalence of Mental Health-Related Service Contacts among Children and Youth with Mental Disorders
4. Child Mental Health Service Expenditures
5. Measures & Tools: OCHS-EBS & MHQ-CY
Research Team

McMaster University  McGill  University of Manitoba  Simon Fraser University

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McMaster University Team

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2014 Ontario Child Health Study (OCHS)

Rationale & Methods
Rationale

Limited evidence in Canada:

1. Epidemiology of child and youth mental disorder and mental health service use

2. Socio-contextual determinants of child and youth mental disorder – neighbourhoods & schools
**Stratified Clustered Sampling**

**Sampling Frame:** Canada Child Tax Benefit File (CCTB; June 2014)

**Target Sample:** ~13,000 households with 4-17 year olds across Ontario

180 Primary Sampling Units (PSU)  
[stratified by pop centre/rural & median income]

75 Households/PSU  
[stratified by low, med, high income]

1-4 Children/Family

~248 Schools
2014 Ontario Child Health Study & School Mental Health Surveys

PREVALENCE, DISTRIBUTION & CORRELATES OF CHILD/YOUTH MENTAL DISORDERS AND SERVICE CONTACT

SCHOOL AND CLASSROOM SETTINGS AND STUDENT MENTAL HEALTH & WELL-BEING

Ontario Child Health Study

School Mental Health Surveys

248 schools
31,124 students
206 principals
3,373 teachers

180 neighbourhoods
6,550 dwellings
10,800 children
2014 Ontario Child Health Study (OCHS)

Prevalence & Correlates of Mental Disorders
**Measures**

**Diagnostic Interview:** Mini International Neuropsychiatric Interview for Children & Adolescents (MINI-KID; Sheehan et al., 2010); fully structured interview administered to parent and youth (12-17 years), separately.

*Past 6 month DSM-IV-TR* disorders assessed:

1. **Major Depressive Episode**
2. **Anxiety Disorders** (Generalized Anxiety, Separation Anxiety, Social Phobia, Specific Phobia)
3. **Behaviour Disorders** (Attention-Deficit/Hyperactivity, Conduct, Oppositional Defiant)

- Disorder classification established separately for parent & youth
Past 6-month Prevalence of At Least One Mental Disorder

- Children aged 4-11 years (parent report): 18%
- Youth aged 12-17 years (parent report): 18%
- Youth aged 12-17 years (youth report): 22%
Prevalence of Mental Disorders by Sex, Age Group & Informant
Six-Month Prevalence of *DSM-IV-TR* Disorders (4-11y)

- **Any Disorder***: 21 (Male) vs. 15 (Female)
- **Any Anxiety Disorder**: 10 (Male) vs. 8 (Female)
- **Any Behaviour Disorder***: 17 (Male) vs. 7 (Female)

*Sex differences are statistically significant at p < 0.05*
Six-Month Prevalence of ADHD and ODD (4-11y)

- **ADHD***
  - Male: 15%
  - Female: 6%

- **ODD***
  - Male: 10%
  - Female: 4%

*Sex differences are statistically significant at p < 0.05
Six-Month Prevalence of Any *DSM-IV-TR* Disorder (12-17y)

- **Parent Report**
  - Male: 21%
  - Female: 16%

- **Youth Report**
  - Male: 18%
  - Female: 25%

*Sex differences are statistically significant at $p < 0.05$
Six-Month Prevalence of Major Depressive Episode (12-17y)

Parent Report
- Male: 5
- Female: 6

Youth Report*
- Male: 5
- Female: 10

*Sex differences are statistically significant at p < 0.05
Six-Month Prevalence of Any Anxiety Disorder (12-17y)

Parent Report

- Male: 11%
- Female: 12%

Youth Report*

- Male: 10%
- Female: 20%

*Sex differences are statistically significant at p < 0.05
Correlates of Child and Youth Mental Disorder
Prevalence of Any *DSM-IV-TR* Disorder by Sociodemographic Groups (4-11y)

*Patterns are generally consistent among 12-17y for both parent and youth informants*

<table>
<thead>
<tr>
<th>No. of Biological Parents in Home*</th>
<th>Immigrant Background*</th>
<th>Urbanicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two Biological Parents</td>
<td>Immigrant</td>
<td>Large Urban Centre</td>
</tr>
<tr>
<td>One or No Biological Parent</td>
<td>Non-Immigrant</td>
<td>Small-Medium Centre</td>
</tr>
<tr>
<td>16</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td>27</td>
<td>23</td>
<td>24</td>
</tr>
<tr>
<td>15</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

*Between-group differences are statistically significant at \( p < 0.001 \)
2014 Ontario Child Health Study (OCHS)
Prevalence of Mental Health-Related Service Contacts among Children and Youth with Mental Disorders
Mental Health-Related Service Contact

Service Contact: Parent-reported service contact by provider type & setting

Provider Type: Child/youth saw or talked to physician or other professional about mental health concerns in past 6 months
  - General Health Provider: family doctor, pediatrician, other regular health care provider
  - Mental Health Provider: psychiatrist, psychologist, social worker, counsellor
  - Complementary/Alternative Medicine Provider: religious or spiritual, alternative healers
  - Phone Helpline or Crisis Hotline

Service Setting: Child/youth went to specific settings for mental health concerns in past 6 months
  - Specialized mental health or addictions agency
  - Walk-in clinic, urgent care, emergency room
  - School-based services
Rates of Mental Health-Related Service Contact by Mental Disorder among 4-11 year olds

<table>
<thead>
<tr>
<th>Disorder</th>
<th>No Service Contact</th>
<th>Any Service Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pure Mood/Anxiety Disorder</td>
<td>55%</td>
<td>45%</td>
</tr>
<tr>
<td>Pure Behaviour Disorder</td>
<td>34%</td>
<td>66%</td>
</tr>
<tr>
<td>Co-Morbid Mood/Anxiety &amp; Behaviour Disorder</td>
<td>17%</td>
<td>83%</td>
</tr>
<tr>
<td>Any Mental Disorder</td>
<td>39%</td>
<td>61%</td>
</tr>
</tbody>
</table>

- Most common provider (any dx): **general health provider (36%)**
- Most common setting or sector (any dx): **school-based services (52%)**
Rates of Mental Health-Related Service Contact among 12-17 year olds by Mental Disorder Classification (Parent vs Youth)

- Most common provider (any dx): general health (35% parent; 24% youth) and mental health (34% parent; 22% youth)
- Most common setting or sector (any dx): school-based services (43% parent; 30% youth)
Correlates of Mental Health-Related Service Contact
Rates of Mental Health Service Contact Among 12-17 year olds with a Youth-Reported Disorder by Sociodemographic Groups

*Between-group differences are statistically significant at p < 0.10
Summary

Prevalence

- High (18-22% any dx)
- Varies by class of disorder, age and informant: behavior (4-11 y) & anxiety (12-17)
- Sex differences for MDE & anxiety are dependent on informant: parent (no diff); youth (female 2-3x higher)
- ↑ non-intact family; ↓ immigrant; ↑ small-medium centre & ↓ large urban centre & rural

Service Contact

- Among children/youth with a parent-identified disorder, 26% of children and 34% of youth had contact with a mental health care provider; estimates are lower for youth-identified disorder (22% had contact with a mental health care provider)
- ↓ females; ↑ non-intact family; ↓ immigrant; ↓ large urban; ↑ co-morbidity
- Schools are the most common setting where children/youth have mental health-related service contact
Implications

High prevalence, coupled with service shortfalls:
1. Address social determinants and mental health promotion
2. Prevent disorders for children at risk
3. Intervene with children with disorders
4. Evaluate intervention efforts by monitoring population and clinical outcomes

- Ensure use of **effective interventions** (prevention and treatment) that are embedded within **innovative service models** that can enhance access to care and extend the reach of specialist providers and teams (i.e., stepped collaborative care models in schools and primary care)
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Ontario Child Health Study

1983 vs. 2014
Methods

- **Objective:** Use the same methods to compare epidemiology of emotional & behavioural disorders among 4-16 year olds in Ontario

- **Design:** Probability sample, multi-stage, stratified cluster design

- **Response rates:**
  
<table>
<thead>
<tr>
<th>Year</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983</td>
<td>93%</td>
</tr>
<tr>
<td>2014</td>
<td>51%</td>
</tr>
</tbody>
</table>
Sample

1983

659 Areas

1,869 Households

3,294 Children
Sample

1983
- Areas: 659
- Households: 1,869
- Children: 3,294

2014
- Areas: 484
- Households: 6,537
- Children: 10,802
Child mental health need: 1983 to 2014

- Mental disorder
- Perceived need for professional help
Mental Disorder
Disorder measurement

Using 1983 comparable definitions:

- Conduct
- Hyperactivity
- Emotional

1+ Disorders
Disorder measurement

Using 1983 comparable definitions:
- Conduct
- Hyperactivity
- Emotional

Classification by problem checklist scale scores:
Ages 4 to 11 = Parent/Teacher report
Ages 12 to 16 = Parent/Youth report
Disorder measurement

Using 1983 comparable definitions:

- Conduct
- Hyperactivity
- Emotional

\[ \text{1+ Disorders} \]

Classification by problem checklist scale scores:

Ages 4 to 11 = Parent/Teacher report
Ages 12 to 16 = Parent/Youth report

Scores converted to binary classifications aligned with child psychiatrist diagnoses.
1+ disorder Age 4-11

<table>
<thead>
<tr>
<th></th>
<th>1983</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>males</td>
<td>17</td>
<td>24</td>
</tr>
<tr>
<td>females</td>
<td>13</td>
<td>15</td>
</tr>
</tbody>
</table>
Hyperactivity  Age 4-11

<table>
<thead>
<tr>
<th></th>
<th>1983</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>males</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>females</td>
<td>3</td>
<td>6</td>
</tr>
</tbody>
</table>

Percentage increase:
- Males: 9% to 15% (66.66% increase)
- Females: 3% to 6% (100% increase)
<table>
<thead>
<tr>
<th></th>
<th>1983</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>males</strong></td>
<td>16</td>
<td>14</td>
</tr>
<tr>
<td><strong>females</strong></td>
<td>17</td>
<td>19</td>
</tr>
</tbody>
</table>

1+ disorder Age 12-16
## Conduct disorder

### Age 12-16

<table>
<thead>
<tr>
<th></th>
<th>1983</th>
<th>2014</th>
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<tbody>
<tr>
<td>males</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>females</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>
Emotional disorder  Age 12-16

<table>
<thead>
<tr>
<th></th>
<th>1983</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>males</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>females</td>
<td>14</td>
<td>18</td>
</tr>
</tbody>
</table>
Perceived Need for Help
Perceived need measurement

Same questions in 1983 & 2014

1. During the past 6 months, do you think that __ has had any emotional or behavioural problems?
2. .....more than other children their age?
3. .....needs or needed any professional help...?
## Perceived need

<table>
<thead>
<tr>
<th></th>
<th>1983</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>males</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td>females</td>
<td>5</td>
<td>17</td>
</tr>
</tbody>
</table>

Percentage increase in perceived need from 1983 to 2014.
Summary

Mental health disorder  
4-11 Hyperactivity  
12-16 Conduct disorder (males)  
12-16 Emotional disorder

Perceived need for professional help
Implications

• Increases in prevalence are consistent with trends in other developed countries

• Decreases in conduct disorder may reflect large public investments in violence prevention programs and youth justice system since 1983

• Further work needed to understand increases in hyperactivity

• Increases in perceived need for help could reflect greater mental health literacy, reduced stigma, greater willingness to seek help
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Child mental health service expenditures

- Ontario government responsible for funding children’s mental health services
- Allocated to individual service agencies within 33 service areas and 5 regions
- Allocation process is unclear
Allocations according to need?

**Need** = % 4-16 year olds with 1+ disorders

**Allocation** = $/Child per capita allocations to areas

1983
- 18%
- $113/child
- 20%
- $81/child

2014
- 15%
- $70/child
- 14%
- $119/child
Allocations according to need?

• Use a funding formula approach to generate a needs-based allocation

• Compare needs-based allocation to actual MCYS expenditures in 2014-15

• How closely aligned were MCYS expenditures to a needs-based allocation? How much reallocation is needed?

• Would a population-based approach be sufficient?
Needs-based allocation

Child mental health need

Mental health service use

Population counts of children

Government expenditures

Based on:
Compare allocations within service areas

Actual government $ expenditure

Needs-based $ allocation
Comparing 2015-16 allocations

<table>
<thead>
<tr>
<th>Region</th>
<th>Actual government $ expenditure</th>
<th>Needs-based $ allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEST</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CENTRAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EAST</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>NORTH</td>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>

$Millions
How much reallocation needed?

% of actual government expenditures that would need to be reallocated to achieve needs-based allocation
How much reallocation needed?

% of actual government expenditures that would need to be reallocated to achieve needs-based allocation = 26%

(approx. $37 Million)
Is a population-based approach sufficient?

% of expenditures that would need to be reallocated to move from a population-based approach to a needs-based allocation
Is a population-based approach sufficient?

\[ \text{% of expenditures that would need to be reallocated to move from a population-based approach to a needs-based allocation} = 23\% \]

(approx. $34 Million)
Summary & Implications

• Funding decisions to child mental health services need to be understood & evaluated

• There is value in including need estimates in funding formula approaches; population counts are not enough
  – Have to agree on how to define and measure child mental health need
  – Identify easy and cost-effective ways to collect information on need
  – Advocate for a basic information system
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2014 OCHS Measures & Tools

• Valid, reliable, brief, self-report, & cheap/free

• Assess child mental health need

• Compare with population norms

• Could form the basis of a ‘Minimum Data Set’ on child mental health need in community agencies & in general population
OCHS Emotional Behavioural Scales (OCHS-EBS)

- Parent & youth 52-item problem checklist (5-7 mins)

- Valid & reliable measurement of 7 DSM-5 disorders
  - **Externalizing**: conduct, oppositional defiant, ADHD
  - **Internalizing**: generalized anxiety, separation anxiety, social phobia, major depression

- Can be used dimensionally or categorically

- Can be compared with 2014 OCHS population norms
OCHS Emotional Behavioural Scales (OCHS-EBS)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Never or not true</th>
<th>Sometimes or somewhat true</th>
<th>Often or very true</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afraid of doing things in front of others</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Angry and resentful</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Anxious or on edge</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Argues a lot with adults</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Avoids school because of fear of separation from loved ones</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Avoids social situations</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Blames others for own mistakes</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Can’t concentrate, can’t pay attention for long</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Can’t stay seated when required to do so</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Changes in appetite</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Complains of feeling sick before separating from loved ones</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Cruelty, bullying or meanness to others</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Deliberately harms self or attempts suicide</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Destroys things belonging to his/her family or other children</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
OCHS Emotional Behavioural Scales (OCHS-EBS)

Measures & documentation available at our website:

www.ontariochildhealthstudy.ca
Mental Health Questionnaire for Children & Youth (MHQ-CY)

• Brief, self-administered questionnaire for parents & youth

• Includes OCHS-EBS scales & additional questions assessing characteristics and mental-health related needs of children/youth & their families seeking help from children’s mental health agencies in Ontario.

• Parent = 37 questions
• Youth = 34 questions
Mental Health Questionnaire for Children & Youth (MHQ-CY)

• Co-developed by Offord Centre researchers, staff & clinicians from agencies in Hamilton Service Area

• Tested & piloted with family and youth seeking services in Hamilton.

• Current implementation pilot in collaboration with Hamilton Lead Agency (Lynwood Charlton Centre), McMaster Children’s Hospital and Child & Adolescent Services.

• Piloting software & one-page clinical feedback report
Mental Health Questionnaire for Children & Youth (MHQ-CY)

• Brief version in development
  – 26 item checklist (Internalizing, Externalizing, Attention domains)
  – Functioning
  – Impact

• 2019 implementation pilot

• Get in touch if you are interested
duncanlj@mcmaster.ca
Discussion & Questions

Thank you!

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Online: http://ontariochildhealthstudy.ca/