Prevention of Depression and Suicide - Making it Happen
Ministry of Health of Hungary and DG Sanco

Budapest, December 10-11, 2009

Contribution Epidemiology and Health Services Research can make

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Epidemiology:

“The study of the *distribution* and *determinants* of health-related states or problems in *specified populations*, and the application of this study to *control of health problems*”.

Epi. Contributions: 1. Distribution

- High **magnitude** of Depression & Suicidality
- Big toll in **disability** and **premature mortality**
- Large **unmet needs** for mental health care
- Marked **prevalence variation** by place and sociodemographic background
- Increasing **time trends**: a depression epidemic in the young?
Time trends in adolescents mental health:

- Costello EJ et al (2006): *No higher* prevalence of depression (review, 30 yrs)
- Maughan B et al. (2008): *Stability* or small declines is SDQ (UK; 1999-2004)
12-month prevalence *mood disorders.*
WHO World Mental Health (WMH) Surveys

Prevalence

- United States
- Ukraine
- New Zealand
- Colombia
- Lebanon
- France
- Israel
- Belgium
- Netherlands
- South Africa
- Mexico
- Spain
- Italy
- Germany
- Japan
- PR China
- Nigeria

0% 2% 4% 6% 8% 10%
Need for mental health care: 12-m disorder & high interference. ESEMeD

- Mental morbidity in the general population:
  - No lifetime disorder, no subthreshold: 58.5%
  - No lifetime disorder, any subthreshold: 14%
  - Any lifetime mental disorder (no 12m): 5.5%

- Use of care among those with mental health need:
  - 12-month disorder no-need: 15.6%
  - 12-month need for health care: 51.7%

- Unmet need for mental health care (in the general population):
  - Unmet need for care: 48.3%
  - Unmet need for mental health care: 96.9%

Epi. Contributions: 2. Determinants

- Genetic predisposition
- Family influence
- Early experiences
- Lifetime stressors
- Social class, unemployment
- Proximal / Distal risk factors

- Depression: Relative small effects
- Suicide: Relative large effects (of mental disorders)
Population attributable risk % (PARPs) of suicidality, World Mental Health (WMH) surveys (developed* countries)
Adjusted by age, age-squared, age cohort, sex, person-year and all other mental disorders.

<table>
<thead>
<tr>
<th>DSM – IV Disorders</th>
<th>Ideation</th>
<th>Attempt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any mood disorder</td>
<td>62.0</td>
<td>58.6</td>
</tr>
<tr>
<td>Any anxiety disorder</td>
<td>29.3</td>
<td>32.6</td>
</tr>
<tr>
<td>Any impulse disorder</td>
<td>7.2</td>
<td>6.4</td>
</tr>
<tr>
<td>Any substance disorder</td>
<td>13.2</td>
<td>13.5</td>
</tr>
<tr>
<td>Any disorder</td>
<td>76.1</td>
<td>75.3</td>
</tr>
<tr>
<td>(n)</td>
<td>(27,963)</td>
<td>(27,963)</td>
</tr>
</tbody>
</table>

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Contribution Epidemiology and Health Services Research can make
Prevention issues for Depression and Suicide

<table>
<thead>
<tr>
<th></th>
<th>Depression</th>
<th>Suicide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screener</td>
<td>+++</td>
<td>+/-</td>
</tr>
<tr>
<td>Diagnostic issues</td>
<td>Severity</td>
<td>Ideation vs Completion</td>
</tr>
<tr>
<td>Treatment</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>Prevention strategy</td>
<td>General population</td>
<td>High risk individuals</td>
</tr>
</tbody>
</table>
AUC = 0.88

Risk factors: Age 18-44; Non-Hispanic Black; Education >12; Low income; Previously married; Previous history of suicide attempt (0-15 ys); Parental psychopathology (MDD, GAD, Panic, Antisocial D.).

Risk Categories: Very low (no previous, <3); Low (no previous, 3-4); Moderate (no previous & 5-11 or previous 1-2); High (previous & >2).
Genetic studies:

- Biological mediation vs biological causation
- Biological vulnerability (moderate effect)
- Biological sensitivity to environmental conditions

Gene-by-Environment Interaction
Health Services Research:

“... the multidisciplinary field of scientific investigation that studies how social factors, financing systems, organizational structures and processes, health technologies, and personal behaviors affect access to health care, the quality and cost of health care, and ultimately our health and well-being. Its research domains are individuals, families, organizations, institutions, communities, and populations”.

Academy Health, 2002
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Health Services (Research):

1. Effectiveness

2. Efficiency

3. Equity
IOM Comparative Effectiveness Research in Psychiatry:
1. Home/community services vs residential in children with serious emotional disorders
2. Atypical vs conventional antipsychotics
3. Traditional training of GPs in MH vs co-location systems of PC and MH
4. Pharmacologic vs behavioral treatments in major depression, different settings
5. Different treatments for depression after MI
6. Different treatments in avoiding early mortality among serious & persistent mental illness
7. Management strategies for adolescents and adults following a suicide attempt


**Figure 2.** Percentage of the Decrease in Deaths from Coronary Heart Disease Attributed to Treatments and Risk-Factor Changes in Our Study Population and in Other Populations.

In the New Zealand study, 1974 to 1981 (Beaglehole\textsuperscript{15}), the analysis focused on specific treatments and inferred contribution from risk factors. In the Finland study, 1972 to 1992 (Vartiainen et al.\textsuperscript{16}), the analysis focused on risk factors and inferred contribution from treatments.
Implementation Science:

- Translational roadblocks
  - First-in-persons study
  - Efficacy to Effectiveness
  - Guidelines to Practice
Implementation Science:

1. Adoption in principle
2. Early implementation
3. Persistence of implementation
Some challenges: epi

- **Valid diagnoses** across studies (categorical vs dimensional; symptoms/function vs biological markers; comorbidity)
- **Longitudinal studies** (record linkage)
- Analyses appropriate for **complex causation** (multilevel, complexity, network)
- **Risk Index** for disorder
Some challenges: HSR

- Randomized and Natural experiments and Quasi-experimental designs
- Operational definition of Need for Mental Healthcare
- Comparative cost-effectiveness of prevention strategies
- Universal outcome measures
Thank you!

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