Measuring effectiveness of mental health services

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Kuopio 27.5.2011
Measuring effectiveness of mental health care

• Outcomes
  – population mental health
  – distribution of mental health
  – health and wellbeing of those with mental health problems

• Process
  – access
  – productivity
Trends

- Population mental health seems stable.....
Psychological well-being

1978-80

2000-01

% 

Mini-Finland

Health 2000

GHQ-12 score

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Trends

• Population mental health seems stable, but costs due to mental health problems are increasing.....
One in four days of paid sickness allowance is due to mental health problems

Mielenterveysperusteiset sairauspäivärahapäivät (%)
Almost one in two disability pensions is due to mental health problems

Mielenterveysperusteisen työkyvyttömyyseläkkeen saajat (%)

Source: Center for pensions
Costs of mental disorders in Finland

6-7 billion euro, mostly costs due to lost productivity

- Total costs of psychoses (2004): 1,3 billion
- Total cost of depression (2007): 1,3 billion

- 26 % of costs due to health
- 13 % of health care costs
Principles of Finnish health care

- Universality
- Solidarity
- Equity

- The right to adequate health care is enshrined in the Constitution
Finnish mental health care

- Mental Health Act
  - municipalities are responsible for mental health work (as for all health care and social services)
  - municipalities levy taxes to finance health care
  - mental health work: promotion, prevention, care and rehabilitation
  - community care is prioritised
Autonomous municipalities create a very heterogeneous service provision

- Finland offers unique possibilities to evaluate various ways of providing mental health services
  - heterogeneous service system is a real-life experimental study with natural controls
  - well developed national registers allow assessment of outcomes
Major changes in Finnish mental health services since 1980

- Downsizing of hospital care (80% of psychiatric beds have disappeared since 1980)
- Privatisation of long-term care in nursing homes
- Increase in child and adolescent psychiatric hospitalisations
- Integration with general health care
Transinstitutionalisation

Number of people with mental health disabilities living in nursing homes has multiplied..

Number of people living in mental health nursing homes

Private providers

All providers

Lähde: Sotkanet 11.10.2012 13
Merttu Project

• Set out to analyse the overall effectiveness of the mental health reform
• Nationwide mortality data for international comparisons
• Using municipalities as the basic analysis unit in Finnish analyses
• Mental health services were classified using the ESMS instrument
• Mainly funded by Academy of Finland
Psychiatric hospital beds per 100000

- Denmark
- Finland
- Sweden

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Mortality in psychiatric hospitals

- Excess mortality of psychiatric inpatients from natural causes has been reported from northern Finland
- 252 long-term inpatients were followed 1992-2000
- SMR was fourfold that of the general population
- Diseases of the circulatory system were the most common single cause of death in both genders
- Inadequately organised somatic care and the prevailing culture of "non-somatic" treatment in psychiatric wards were suggested to, at least in part, explain this phenomenon
- Räsänen et al, SPPE 2003
Trends in overall mortality of patients with severe mental disorders

• Previous studies have shown excess mortality among psychiatric patients, both due to natural and unnatural causes of death

• Mortality among people with mental disorders is a coarse measure of mental health system effectiveness

• In spite of reduced number of beds, population treated in psychiatric wards has remained remarkably stable over years (approx. 30 000 people)
Total life expectancy among people with severe mental disorders and general population in Denmark, Finland and Sweden 1987–2006 at 15 years of age

Wahlbeck et al., BJPych 2011
Mortality of people mental disorder

- Life expectancy has increased and mortality gap has diminished during the era of deinstitutionalisation
- In spite of major downsizing of psychiatric in-patient care in Finland, mortality gap has decreased more in Finland than in Sweden. It seems that suicide prevention has been more effective in Finland.
- Women evince a greater reduction of the mortality gap than men
Life expectancy 1981-2003 (women)

Westman et 2011, EurJPublHealth
Life expectancy 1981-2003 (men)

Westman et al 2011, EurJPublHealth
Did shortening of in-hospital stays lead to post-discharge suicides?

- Along with a general decline in suicide incidence, the steep deinstitutionalization between 1985-2001 decreased one year post-discharge suicides

  Pirkola, Psychiatr Serv 2007

- Suicides immediately after hospital discharge have decreased in spite of shortened hospitalisations

  Sohlman, Duodecim 2006
Relative risk of suicide within a year for discharged patients in 1985–1991 and timing of postdischarge suicide

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<tbody>
<tr>
<td>Committed suicide with a discharge within a year (N=1,978)</td>
<td></td>
<td>Discharged patients (N=163,236)</td>
<td></td>
<td>Discharged patients (N=1,863)</td>
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<tr>
<td>Discharge diagnosis&lt;sup&gt;a&lt;/sup&gt;</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
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<td>%</td>
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<tr>
<td>Substance-related disorder</td>
<td>176</td>
<td>8.9</td>
<td>19,588</td>
<td>12.0</td>
<td>249</td>
<td>13.4</td>
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<tr>
<td>Schizophrenia or similar psychosis</td>
<td>704</td>
<td>35.6</td>
<td>72,604</td>
<td>44.5</td>
<td>491</td>
<td>26.4</td>
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<tr>
<td>Affective disorder</td>
<td>686</td>
<td>34.7</td>
<td>30,474</td>
<td>18.7</td>
<td>834</td>
<td>44.8</td>
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<tr>
<td>Neurotic- and stress-related or somatoform disorder</td>
<td>116</td>
<td>5.9</td>
<td>12,383</td>
<td>7.6</td>
<td>107</td>
<td>5.7</td>
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<tr>
<td>Personality disorder</td>
<td>189</td>
<td>9.6</td>
<td>13,193</td>
<td>8.1</td>
<td>138</td>
<td>7.4</td>
</tr>
<tr>
<td>Other&lt;sup&gt;b&lt;/sup&gt;</td>
<td>107</td>
<td>5.4</td>
<td>14,994</td>
<td>9.2</td>
<td>44</td>
<td>2.4</td>
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<tr>
<td>Any mental disorder</td>
<td>1,978</td>
<td>100.0</td>
<td>163,236</td>
<td>100.0</td>
<td>1,863</td>
<td>100.0</td>
</tr>
<tr>
<td>Time from discharge to suicide&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
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<tr>
<td>0 to 7 days</td>
<td>652</td>
<td>33.0</td>
<td></td>
<td>512</td>
<td>27.5</td>
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<tr>
<td>1 week to 1 month</td>
<td>252</td>
<td>12.7</td>
<td></td>
<td>282</td>
<td>15.1</td>
<td></td>
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<tr>
<td>1 to 3 months</td>
<td>382</td>
<td>19.3</td>
<td></td>
<td>379</td>
<td>20.3</td>
<td></td>
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<tr>
<td>3 to 6 months</td>
<td>342</td>
<td>17.3</td>
<td></td>
<td>344</td>
<td>18.5</td>
<td></td>
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<tr>
<td>6 to 12 months</td>
<td>353</td>
<td>17.8</td>
<td></td>
<td>348</td>
<td>18.7</td>
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</tbody>
</table>

<sup>a</sup> For patients with multiple psychiatric hospitalizations, the last available discharge diagnosis was used for classification; for the difference between the two time periods, $\chi^2=97.2$, df=5, p<.001

<sup>b</sup> For the difference between the two time periods, $\chi^2=15.12$, df=4, p<.005

Pirkola, Psychiatr Serv 2007
Autonomous municipalities create a very heterogeneous service provision

- Finland offers unique possibilities to evaluate various ways of providing mental health services
  - heterogeneous service system is a real-life experimental study
  - well developed national registers allow assessment of outcomes
Psychiatric bed use 2007
(standardised for sex and age)

National average = 100
(range 0.41 – 1.45 /1000 inh.)

Source: Stakes 2007
Suicide as an outcome of provision of mental health services

• The project analysed effectiveness of mental health services, using municipalities as the basic analysis unit

• Mental health services were classified using the ESMS instrument
  • Residential services
  • Day care
  • Outpatient community care
  • Self-help and peer support services
ESMS

Classification of Finnish mental health services


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The regional variation of age- and sex-adjusted suicide risk according to pooled suicides from five years period.
Analyses

• Uni- and multivariate regression models explaining regional variation in suicide rates by service provision factors when controlling for socioeconomic factors and frequency of psychiatric hospitalization

• Socioecomical principal components for "disturbance" and "poverty"
Aggregate level socio-economics are strongly linked to suicide mortality

Two principal components explained 77% of suicide variability:

• Social instability and disturbance
  – Violence (0.83)
  – Alcohol sales (0.74)
  – Unemployment (0.71)

• Poverty and low resources
  – Annual income (-0.91)
  – Unemployment (0.53)

Pirkola, Lancet 2009
Associations with suicide incidence with and without adjustments for socio-economic factors

Service provision practices (ESMS)
- Number of outpatient service types
- Outpatient or inpatient service type ratio
- 24-h emergency services
- Mobile outpatient services

Organisational changes
- Number of organisational changes
- Transfer of services to primary care
- Proportion of non-outsourced services

Inpatient treatment use
- Involuntary admissions (O/E)
- Number of hospitalised patients (O/E)
- Number of psychiatric admissions (O/E)
- Inpatient days (O/E)

Unadjusted
Disturbance adjusted
Poverty adjusted
Both adjusted

Rate ratio
0.7 0.8 0.9 1.0 1.1 1.2 1.3

Lancet 2009
A wide variety of mental health services is linked to lower suicide rates

Lancet 2009
Prominence of out-patient services is linked to lower suicide rate
24-h availability of mental health services and outreach services are linked to lower suicide mortality.
The simultaneous effect of socioeconomic factors, involuntary referrals, strategic changes and outpatient-orientated service structure, to the regional variation in suicide risk

<table>
<thead>
<tr>
<th></th>
<th>BETA</th>
<th>95%C.I.</th>
<th>t</th>
<th>P</th>
<th>BETA</th>
<th>95%C.I.</th>
<th>t</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.C. for Disturbance</td>
<td>0.25</td>
<td>0.05-0.47</td>
<td>2.33</td>
<td>0.01</td>
<td>0.27</td>
<td>0.03-0.47</td>
<td>2.33</td>
<td>0.01</td>
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<tr>
<td>P.C. for Poverty</td>
<td>0.44</td>
<td>0.27-0.65</td>
<td>4.59</td>
<td>0.00</td>
<td>0.45</td>
<td>0.26-0.62</td>
<td>4.73</td>
<td>0.00</td>
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<tr>
<td>Involuntary referrals</td>
<td>0.29</td>
<td>0.14-0.44</td>
<td>3.85</td>
<td>0.00</td>
<td>0.29</td>
<td>0.16-0.43</td>
<td>4.15</td>
<td>0.00</td>
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<tr>
<td>Strategic changes</td>
<td>0.05</td>
<td>-0.1-0.18</td>
<td>0.66</td>
<td>0.26</td>
<td>0.06</td>
<td>-0.11-0.24</td>
<td>0.70</td>
<td>0.24</td>
</tr>
<tr>
<td>Outpatient/inpat service type ratio</td>
<td>-0.26</td>
<td>-0.43-0.08</td>
<td>-2.85</td>
<td>0.00</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Mobile outpatient services</td>
<td>-0.17</td>
<td>-0.36-0</td>
<td>-1.91</td>
<td>0.03</td>
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</tr>
</tbody>
</table>
The local mental health service system is linked to suicide mortality

- In addition to local socioeconomic factors, mental health service-related factors associated with suicide risk, too.
- Permanent emergency services and mobile mental health services, and a relative excess or diversity of outpatient unit types, combined with scarcity of inpatient unit types associated with decreased suicide mortality.
- Increased use of psychiatric hospital treatment periods, and involuntary referrals to hospital indicated associated with increased suicide risk.
Conclusions

• Municipalities with well developed mental health community services have lower suicide rates, while municipalities relying on in-patient psychiatric services have higher suicide rates.

• Suicide prevention can most likely be promoted by developing multi-faceted community-based mental health services.
• The Finnish reform of mental health services is only half-way – continued shift from hospital care to community-based care is needed

• Research indicates that public health impact of the reform so far has been beneficial, more so for women than for men

• No progress has been achieved in health of people with substance use problems

• A substantial health gap still exists for people with mental disorders