The educational patterning of health-related adversities in individuals with major depression

G. Klabbers¹, H. Bosma¹, A.J.W. Van der Does², N. Vogelzangs³, G.I.J.M Kempen¹, Van Eijk¹, B.W.J.H. Penninx²,³,⁴

¹ Maastricht University, School CAPHRI
² Leiden University Medical Centre, dept of Psychiatry
³ VU University Medical Centre, EMGO
⁴ University Medical Centre Groningen, dept of Psychiatry
Thesis

- SES
- Psychological factors
- Ischaemic heart disease
Background

- Depression prevalence
- Severity
- Suicide rates
- Life expectancy
- Persistence
- Response to treatment
- Treatment with pharmacotherapy

- Comorbidities
- Lifestyle
- Psychological function
Method

Sample & design

- NESDA sub-sample
- Including: individuals with current major depression, >24 yrs
- N=992, 34.4% men, Δ age 43.2 yrs ± 10.5
- Cross-sectional design

Measurements

- Education
- Depression severity
- No of somatic diseases
- Metabolic syndrome*
- Psychological function
- Lifestyles
- Treatment
Metabolic syndrome

*Cluster of 3 or more out of 5 abnormalities, predicting cardiac risk (NCEP, ATPIII)*

- Waist circumference >102 cm in men, > 88 cm in women
- Triglycerides ≥1.7 mmol/L, or drug treatment
- HDL cholesterol <1.0 mmol/L in men, <1.3 mmol/L in women, or drug treatment
- Fasting glucose >5.6 mmol/L or drug treatment
- Systolic BP ≥ 130 mmHg, diastolic BP ≥ 85 mmHg or drug treatment
Analyses

**EDUCATION**

- **Model 1**
  - age, sex, north-european ancestry

- **Model 2**
  - depression severity

- **Model 1**
  - Depression severity
  - Lifestyles

- **Model 2**
  - Metabolic Syndrome
  - Treatment
  - No of somatic diseases
  - Psychological function

Regression models:

- Multinomial regression
- Logistic regression
- Linear regression
Multinomial regression analyses: Depression severity

Education

- high
- intermediate
- low

Depression severity

- mild
- moderate
- severe
Multinomial regression analyses: Depression severity

Education
- high
- intermediate
- low

Depression severity
- mild
- moderate
- severe

OR_{mm}  OR_{sm}
Results of multinomial regression analyses: Depression severity

Education

high

low

Depression severity

mild

moderate

severe

$\text{OR}_{\text{mm}} = 1.84 \ (1.23-2.75)$

$\text{OR}_{\text{sm}} = 1.66 \ (1.14-2.41)$
Results of multinomial regression analyses: Odds ratios for adverse *lifestyles* at low educational level

<table>
<thead>
<tr>
<th></th>
<th>Model 1 Education + conf</th>
<th>Model 2 Education + conf + depr severity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Smoking</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td>2.28 (1.55-3.37)</td>
<td>2.25 (1.52-3.33)</td>
</tr>
<tr>
<td><strong>Alcohol consumption</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low (≤ 1 gl pw)</td>
<td>2.11 (1.50-2.97)</td>
<td>2.06 (1.46-2.90)</td>
</tr>
<tr>
<td>Excessive (&gt; 21 gl pw)</td>
<td>0.79 (0.43-1.44)</td>
<td>0.77 (0.42-1.42)</td>
</tr>
<tr>
<td><strong>Physical activity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>1.51 (0.99-2.30)</td>
<td>1.48 (0.97-2.25)</td>
</tr>
</tbody>
</table>
Results of logistic regression analyses: Odds ratios for *metabolic syndrome* and *depression treatment* at low educational level

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Education + conf</td>
<td>Education + conf + depr severity</td>
</tr>
<tr>
<td><strong>Metabolic syndrome</strong></td>
<td>2.24 (1.51-3.32)</td>
<td>2.15 (1.45-3.20)</td>
</tr>
<tr>
<td><strong>Treatment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any psychotherapy</td>
<td>0.73 (0.55-1.02)</td>
<td>0.74 (0.54-1.00)</td>
</tr>
<tr>
<td>Any antidepressant</td>
<td>1.54 (1.13-2.10)</td>
<td>1.48 (1.08-2.02)</td>
</tr>
</tbody>
</table>
Results of linear regression analyses: 
**b coefficients for no of somatic diseases and psychological function**

<table>
<thead>
<tr>
<th></th>
<th>Model 1 Education + conf</th>
<th>Model 2 Education + conf + depr severity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No of somatic diseases</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.27 (0.03-0.51)</td>
<td>0.24 (-0.01-0.48)</td>
</tr>
<tr>
<td><strong>Psychological function</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hopelessness</td>
<td>1.08 (0.24 - 1.93)</td>
<td>0.80 (-0.02 - 1.61)</td>
</tr>
<tr>
<td>Acceptance</td>
<td>0.11 (-0.29 - 0.51)</td>
<td>0.11 (-0.29 - 0.51)</td>
</tr>
<tr>
<td>Aggression</td>
<td>0.71 (-0.09 - 1.51)</td>
<td>0.53 (-0.26 - 1.31)</td>
</tr>
<tr>
<td>Control</td>
<td>-0.69 (-1.36 - -0.01)</td>
<td>-0.76 (-1.43 - -0.09)</td>
</tr>
<tr>
<td>Risk aversion</td>
<td>-0.04 (-0.80 - 0.72)</td>
<td>-0.18 (-0.93 - 0.58)</td>
</tr>
<tr>
<td>Rumination</td>
<td>-0.71 (-1.47 - 0.05)</td>
<td>-0.88 (-1.63 - -0.13)</td>
</tr>
</tbody>
</table>
In summary

In addition to
- Depressive disorders being more prevalent at lower socioeconomic levels
- Depressive disorders being more severe at lower socioeconomic levels

Less educated individuals with a major depression
- smoke more
- are more often abstinent
- have a higher risk of the metabolic syndrome
- tend to feel more hopelessness
- report less control
- are more likely to receive antidepressant medication
- are less likely to receive psychotherapy

when compared to more highly educated peers. These educational differences are not dependent on depression severity!!!
Discussion

- Higher susceptibility?
- Life-course effects?
- Treatment inequalities?
Implications

Research

- Examine educational inequalities in depression treatment and their effect on health and on the course of the depression in a longitudinal design
- Establish pathways (sequence) in a longitudinal design

Practical implications

- Routine screening for excess health risk in less educated major depressed individuals?