Unemployment Rates and Workers’ Health Risks

How do workers’ modifiable health risks respond to the health of their industry?

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Presenter Disclosures

BRIAN GIFFORD

(1) The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

No relationships to disclose
Background

- Recent media reports suggest that recession has some benefits for health
  - Reduced death rates
  - Less disposable income for vice
  - Less work-related stress, more time for exercise
- What about people who manage to keep their jobs in a downturn?
  - Less time for exercise?
  - More stress?
- Question of importance to employers
  - Purchasers of health and wellness benefits

Research Questions

- How do workers’ health risks relate to economic downturns in their industries?
  - Downturns:
    - Industry quarterly unemployment rate
    - YoY % change in industry’s quarterly unemployment rate
  - Risks
    - Smoking
    - Drinking
    - Body weight
    - Exercise
    - Psychological distress
Summary of Results

- Mixed evidence that economic downturns reduce health risks
- Levels of exercise improve with unemployment rate
  - Similar results whether employed or unemployed
  - No effect for YoY change
- Employed persons drink more as their industry’s unemployment rises (YoY)
  - Slightly weaker correlation for NILF
  - No effect for unemployment rate
- No relationship between unemployment on psychological distress
  - Unlikely mediator of recessions and health risks at the macro-level

Data

- NHIS 2005-2010
  - ~78,000 employed survey respondents
    - An additional ~37,000 NILF, ~5,000 unemployed workers as comparison groups
  - Health risks, industry, demographics, indicators of year and quarter of interview
- BLS
  - Industry unemployment rate
    - Rate during quarter of interview
    - YoY % growth in quarterly average
    - NILF assigned national rates, unemployed workers assigned rates for former industry
Summary of outcome variables

<table>
<thead>
<tr>
<th>BMI</th>
<th>Normal</th>
<th>Overweight</th>
<th>Obese I</th>
<th>Obese II</th>
<th>Obese III</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>38%</td>
<td>35%</td>
<td>17%</td>
<td>6%</td>
<td>4%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Drinking</th>
<th>Non-drinker</th>
<th>Infrequent drinker</th>
<th>Light drinker</th>
<th>Moderate drinker</th>
<th>Heavy drinker</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>40%</td>
<td>13%</td>
<td>29%</td>
<td>14%</td>
<td>5%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Smoker</th>
<th>Non-smoker</th>
<th>Occasional</th>
<th>Everyday</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>80%</td>
<td>4%</td>
<td>16%</td>
<td>46%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exercise</th>
<th>1-3 hours/week</th>
<th>4-7 hours/week</th>
<th>8+ hours/week</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>33%</td>
<td>14%</td>
<td>7%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Psych distress</th>
<th>Low</th>
<th>Moderate</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7%</td>
<td>3%</td>
<td></td>
</tr>
</tbody>
</table>

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Ordinal Logistic Regression

Linear Combinations

<table>
<thead>
<tr>
<th>Orthy.</th>
<th>BMI</th>
<th>Drinking</th>
<th>Smoking</th>
<th>Exercise</th>
<th>Psychological distress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemp.</td>
<td>Employed</td>
<td>0.0003</td>
<td>0.0033</td>
<td>-0.0023</td>
<td>0.0216*** 0.0100</td>
</tr>
<tr>
<td>NILF</td>
<td>-0.0111</td>
<td>-0.0140</td>
<td>#</td>
<td>0.0148</td>
<td>-0.0064 # -0.0066</td>
</tr>
<tr>
<td>Unemployed</td>
<td>-0.0096</td>
<td>-0.0021</td>
<td>#</td>
<td>-0.0176* #</td>
<td>0.0397*** # -0.0091 #</td>
</tr>
</tbody>
</table>

| YoY Δ in | Employed | 0.0004 | 0.0008* | 0.0000 | 0.0006+ -0.0009 |
| Unemp.  | NILF | 0.0002 | 0.0011+ | 0.0006 | 0.0006 |
| Unemployed | 0.0011 | 0.0013+ | 0.0010 | -0.0001 -0.0007 |

Pseudo R-squared | 0.022 | 0.058 | 0.073 | 0.050 | 0.073 |

N | 115,065 | 116,338 | 117,850 | 115,308 | 117,434 |

Total effect differs from zero: + p<0.10, * p<0.05, ** p<0.01, *** p<0.001
Interaction effect differs from employed workers: † p<0.10, # p<0.05, ## p<0.01, ### p<0.001

Risk = \( \alpha + \beta_1 Unemployment rate + \beta_2 YoY Unemployment + \beta Industry + \beta Time + \beta Demographics + \varepsilon \)
Implications

• Macro-relationships sensitive to specification of operational definition of economic downturn
  – Raw vs. YoY, industry rate vs. state rates, etc.
• Longitudinal micro-analyses of employment exit and entry would likely provide clearer guidance
• Employers should not necessarily conclude that cutting benefits during downturns will not have repercussions on worker health and productivity