Do adverse psychosocial working conditions cause the onset of depression?
International scientific evidence

Psychosocial job characteristics and depression and the related outcomes in Japanese workers

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Background and study objective

• Prospective evidence on the association between psychosocial job characteristics and depression is very limited, in particular among other than those conducted on western populations.

• The paper reviews findings from three recent epidemiologic studies with various Japanese working populations on the effects of psychosocial job characteristics on depression and the related outcomes.
Overview

• Prospective study on psychosocial job characteristics and depression
  – Japan Work Stress and Health Cohort Study

• Prospective study on low job control and suicide
  – Jichi Medical School Cohort Study

• Occupational class differences in risk of depression: role of Effort-Reward Imbalance
  – Cross-sectional study among civil servants
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Japan Work Stress and Health Cohort Study

- A large-scale prospective cohort study
- Multiple worksites
  - metal, automobile, electric, other manufacturing and electric power industries
- A total of 15438 employed men without history of psychiatry diseases were followed from 1997 to 2003.
- Depression cases with sickness absence of >= 30 days were registered by the occupational physician.
- Job characteristics were measured by NIOSH Generic Job Stress Questionnaire.
Job control and subsequent depression

- 50 cases:

- Incidence rate = 0.63 / 10^3 py

- Men with low job control had significantly higher RR for depression (RR 2.6; 95%CI 1.2-5.6).

- Role ambiguous and role conflicts were also associated with depression (2.1; 0.9-4.7, and 2.6; 1.2-5.8, respectively).

Adjusted for age, education, marital status, and occupation.
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The Jichi Medical School Cohort study

• Design:
  – Prospective cohort
  – 12 rural communities

• Participants:
  – Totally 12490 men and women

• Analyzed:
  – 3125 men aged <=65 without history of major illness were followed 9 years
  – More represent for community-dwelling workers

• Suicide confirmed by death certificate
• Job characteristics measured by WHO-MONICA DCQ
Job control and suicide death

• 14 suicides: a slightly lower suicide death rate (48.1 / 10^5 py) than the Japanese national rate for men 40-69 y of age in 2000 (54.6 / 10^5 py)

• The incidence rate of suicide among men with low job control (83.6 / 10^5 py) was substantially high.

Adjusted for age, occupation, study area, marital status, education, smoking, alcohol, and TC.
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Occupational class differences in risk of depression: role of ERI

• The impact of ERI on depression may be equal to low job control (Tsutsumi et al 2001).

• Health inequality is one of the most important public health issues.

• It is hypothesized that the lower social class, the more getting ill, and job stress might explain this phenomena.
Methods

• A cross-sectional study was conducted in 3856 Japanese civil servants.

• Depressive symptomatology was measured by Center for Epidemiologic Studies Depression Scale.

• The work related stress was evaluated by the model of effort-reward imbalance at work.
Prevalence of depressive symptoms according to occupational class and ERI, employees of a prefectual government office

Depressive symptoms

<table>
<thead>
<tr>
<th>Class</th>
<th>CES-D &gt; 15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managers (N=1490)</td>
<td></td>
</tr>
<tr>
<td>Clerks/ technicians (N=2366)</td>
<td></td>
</tr>
</tbody>
</table>

Depressive symptoms

<table>
<thead>
<tr>
<th>ERI Balance (N=2985)</th>
<th>CES-D &gt; 15</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERI (N=715)</td>
<td></td>
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</table>
Prevalence of effort-reward imbalance by occupational class

Relative risk of depressive symptoms by occupational class

Model I; adjusted for sex, age, education, working hours and workplace
Model II; adjusted for the above plus ERI
Combined exposure to lower occupational class and ERI in relation to depressive symptoms

Adjusted OR

Synergy index

\[ S_{AB} = \frac{(OR_{AB} - 1)}{(OR_A + OR_B) - 2} \]

\[ S_{AB} = 1.6 \]

1; perfect additivity,

>1; synergistic interaction

(Rothman, 1986)

Proportion of the effect that is attributable to the interaction of the two exposures:

\[ AP_{AB} = \frac{OR_{AB} - OR_A - OR_B + 1}{OR_{AB}} \]

\[ AP_{AB} = 32\% \]

Reference: manager & ERI(-)
Discussion

Re: prospective findings,
• Underestimation of the outcome
  – Depression case with sickness absence of \( \geq 30 \text{days} \)
  – Death certificate of suicide

Re: civil servant study,
• Cross-sectional design
• Supervisors = survivors?

Limited data among women
Conclusion

• Japanese data suggest that psychosocial job characteristics, in particular low job control, predict depression and the related outcomes.

• There may be an occupational class differences in risk of depressive symptomatology among Japanese workers. Workers in low occupational positions may suffer an increased susceptibility to ERI.

• Further studies are needed both for men and women, using more definite outcome measurement.
Thank you for your attention.