Work/Workplace Factors associated with Obesity, Hypertension, Cancer Screening, and Smoking Cessation:

Some Novel Findings from the 2010 National Health Interview Survey

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Acknowledgements

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
The National Health Interview Survey (NHIS)

- Conducted by the National Center for Health Statistics (NCHS) since 1957

- Cross-sectional, in-person household survey
  - Multistage area probability design
  - 35,000 – 40,000 households surveyed annually

- Consists of core questions and supplements
  - Detailed demographic & health questions asked of 1 sample adult (& 1 sample child) from each family
  - 2010 Occupational Health Supplement: questions about work-related health conditions and exposures/working conditions
Content of the 2010 NHIS-OHS

- **Supplemental work history**
  - Current/most recent job
  - Longest-held job

- **Work organization factors**
  - Work arrangements
  - Work hours/shifts

- **Psychosocial occupational exposures**
  - Job insecurity
  - Work-family imbalance
  - Hostile work environment (harassment)
Content of the 2010 NHIS-OHS (cont.)

- Physical/chemical occupational exposures
  - Potential skin hazards
  - Outdoor work
  - Second-hand smoke
  - Vapors, gas, dust, or fumes

- Work-relatedness of common health outcomes
  - Asthma
  - Dermatitis
  - Carpal tunnel syndrome
  - Injuries
Relevance of the NHIS-OHS to TWH

OHS variables can be combined with Core NHIS variables

To investigate work and non-work contributions to worker health conditions to better understand their sources and identify TWH interventions.
Data Analysis

- Public dataset available on NCHS website

- Complex sample design requires SAS survey procedures and/or SUDAAN

- Most OHS questions administered to all Sample Adults who worked in past 12 months
  - N=17,524
Novel Findings
Obesity

- 27.7% of U.S. workers obese (BMI ≥ 30)
- Work organization and psychosocial factors significantly associated with obesity:

<table>
<thead>
<tr>
<th>Factor</th>
<th>PR*</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long work hours (&gt;40 hours/wk)</td>
<td>1.08</td>
<td>1.01-1.17</td>
</tr>
<tr>
<td>Hostile work environment</td>
<td>1.13</td>
<td>1.01-1.26</td>
</tr>
</tbody>
</table>

*Adjusted for demographic covariates (sex, age, race/ethnicity and education) and health behaviors (smoking, exercise, and fruit and vegetable consumption)

Hypertension

• 19.4% of U.S. workers self-reported hypertension
  – Told by a healthcare provider on ≥ 2 visits

• Work organization and psychosocial factors significantly associated with hypertension:

<table>
<thead>
<tr>
<th></th>
<th>PR*</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job insecurity</td>
<td>1.11</td>
<td>1.04-1.19</td>
</tr>
<tr>
<td>Hostile work environment</td>
<td>1.15</td>
<td>1.03-1.29</td>
</tr>
</tbody>
</table>

*Adjusted for age, sex, race, BMI, physical inactivity, smoking, and health insurance coverage

Cancer Screening among Women

• Night shift work has been associated with breast cancer
  – 27.4% of female U.S. workers usually work alternative shifts (e.g., evening, night, rotating)

• Non-adherence to screening recommendations among alternative shift workers vs. daytime shift:

<table>
<thead>
<tr>
<th></th>
<th>PR*</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast cancer screening non-adherence (50-74 years old)</td>
<td>1.35</td>
<td>1.17-1.55</td>
</tr>
<tr>
<td>Colon cancer screening non-adherence (50-75 years old)</td>
<td>1.10</td>
<td>1.00-1.21</td>
</tr>
</tbody>
</table>

*Adjusted for health insurance coverage

Smoking Cessation: Quit Interest

- 65.2% of smoking workers were interested in quitting in the past year
- Work factors significantly associated with quit interest:

<table>
<thead>
<tr>
<th></th>
<th>OR*</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job insecurity</td>
<td>1.30</td>
<td>1.09-1.55</td>
</tr>
<tr>
<td>Long work hours (≥ 48/wk)</td>
<td>0.78</td>
<td>0.63-0.96</td>
</tr>
<tr>
<td>Frequent workplace skin and/or respiratory exposures</td>
<td>1.42</td>
<td>1.19-1.69</td>
</tr>
</tbody>
</table>

*Adjusted for demographic characteristics (age group, education, race/ethnicity, and marital status) and for all the listed significant factors.

Smoking Cessation: Quit Attempts

- 53.8% of U.S. workers who smoked attempted to quit in the past year
  - Denominator: current smokers who have smoked ≥2 years and former smokers who quit within the past year

- Work factors significantly associated with quit attempt:

<table>
<thead>
<tr>
<th></th>
<th>OR*</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hostile work environment</td>
<td>1.54</td>
<td>1.17-2.04</td>
</tr>
</tbody>
</table>

*Adjusted for demographic characteristics (age group, education, race/ethnicity, and marital status) and for other significant factors: Living in a home that permitted smoking, No. of cigarettes smoked per day

Smoking Cessation: Quit Success

• 6.8% of U.S. workers who smoked in the past year successfully quit
  – Denominator: current smokers who have smoked ≥ 2 years and former smokers who quit within the past year

• Work organization and psychosocial factors significantly associated with quit success:

<table>
<thead>
<tr>
<th>Frequent exposure to others smoking at work</th>
<th>OR*</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.52</td>
<td>0.34-0.80</td>
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</tbody>
</table>

*Adjusted for demographic characteristics (age group, education, race/ethnicity, and marital status) and for other significant factors: Living in a home that permitted smoking, Health insurance

## Summary

<table>
<thead>
<tr>
<th>Occupational Risk Factor</th>
<th>Obesity</th>
<th>Hypertension</th>
<th>Cancer Screening Non-adherence</th>
<th>Smoking Cessation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long work hours</td>
<td>X</td>
<td>NS</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Hostile work environment</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Job insecurity</td>
<td>NS</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Alternative shift</td>
<td>NS</td>
<td></td>
<td>X</td>
<td>NS</td>
</tr>
<tr>
<td>Skin and/or respiratory exposures</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Workplace SHS</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

X = Statistically significant association; NS = Non-significant; Blank = Association not tested; SHS = secondhand smoke
Limitations

- Illness and exposure based on self-report
- Exposure questions broad
- Cross-sectional survey
Future Plans

- NIOSH to sponsor another NHIS-OHS in 2015
  - Many questions from 2010 will be repeated
  - Proposed new topics
    - Work-related back pain
    - Ergonomic exposures
    - Safety culture
    - Psychological demand and control (single questions)
    - Workplace health promotion offerings

- Further analyses of 2010 NHIS-OHS data
  - Associations between various workplace exposures and additional health outcomes
Invitation and Request

- Please help us make use of these data!

- Please let us know about your use of the data!
  - We can provide you with a dataset that includes key recoded variables.
  - We want to track the project’s impact.

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http://www.cdc.gov/niosh/topics/nhis/