Why is work an important social determinant of health?

Peter Smith

UCLA Occupational Health Program

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Institute for Work & Health

VISION
Healthy, safe and inclusive work through excellent research

MISSION
To conduct and mobilize research that supports policy-makers, employers and workers in creating healthy, safe and inclusive work environments

VALUES
Excellence
Integrity
Innovation

Respect
Collaboration
Equity
Accountability
STRATEGIC DIRECTIONS: 2023 – 2027

1. Advance the science of work and health
2. Expand the reach and impact of IWH research
3. Strengthen the work and health ecosystem
4. Ensure IWH is a safe and healthy workplace

https://www.iwh.on.ca/corporate-reports/iwh-strategic-plan-2023-2027
IWH’s RESEARCH FOCUS:
2023-2027
Overview

Why is work an important social determinant of health?

How does work and the labour market contribute to health inequities?

How can we better understand the negative and positive aspects of work?

Six emerging challenges for the future of work
Conceptual framework of social determinants influencing work, health, and wellbeing

Inequalities in health and wellbeing

Social and health regulatory and benefits systems

Working conditions
- Working time
- Physical
- Chemical
- Biological
- Psychosocial

Individual susceptibility
- Physiological
- Psychological
- Behavioural

Employment conditions
- Full-time permanent employment
- Precarious employment
  - Part-time employees
  - Self-employed workers
  - Freelancers
  - Subcontractors
  - Agency workers
  - Platform and gig workers
- Unemployment

Social position
- Socioeconomic status
- Gender and sexual orientation
- Age
- Race and ethnicity
- Indigeneity and migration status

Socioeconomic and political conditions
- Labour market governance
- Politics and policies
- Economy
- Technological innovation
- Climate change
- Culture and societal values

Frank et al, 2023
Key Message One

Among the working aged population, work is important
Level of stress and main source of stress among Canadians 20 to 64 years of age

General Social Survey, 2015 (N = 8,646)
Labour market experiences (the availability and nature of work) can reinforce and exacerbate inequalities in health at the population level.
Labour market experiences can be related to:

- The availability of work (e.g. unemployment, underemployment)
- The nature of work (e.g. work exposures)
Percent of unemployment by education level. 1997 to 2021

Source: Statistics Canada’s Labour Force Survey
Percent of unemployment by immigrant status. 2017 to 2021

Source: Statistics Canada’s Labour Force Survey
Median hourly wage by education level. 1997 to 2021

Source: Statistics Canada’s Labour Force Survey
Median hourly wage by immigrant status. 2017 to 2021

- Recent immigrant (10 years or less)
- Immigrant (more than 10 years)
- Non-Immigrant

25% with bachelors education and higher

51% with bachelors education and higher

Source: Statistics Canada’s Labour Force Survey
The 12 most sex/gender segregated occupations in Canada. 1987 to 2015

Source: Statistics Canada’s Labour Force Survey
Gendered occupations in Canada (75% or more male/female). 2022

Source: Statistics Canada’s Labour Force Survey
Adjusted prevalence ratio for disability type and employment quality. Canada, 2020

- Instrumental versus standard
  - No disability: 1.93
  - Physical: 3.35
  - Mental/Cog: 1.80
  - Both: ref

- Precarious versus standard
  - No disability: 1.97
  - Physical: 4.36
  - Mental/Cog: 2.18
  - Both: ref

Shahidi et al 2023
The nature of work and health isn’t just about work-related injuries and illnesses – although work-related injuries and illnesses still contribute large costs to workers, their families and their communities.
Incidence (left) and adjusted hazard ratio (right) of heart disease by sitting/standing at work. Ontario. 2003-2015

Smith et al, 2018
Adjusted HR for low job control and incident hypertension (left) and diabetes (right). Ontario

Men (HBP): 1.85
Women (HBP): 0.96
Men (DM): 0.92
Women (DM): 2.04

Smith et al 2013 (left) and Smith et al 2012 (right)
Relationship between different types of sitting and risk of diabetes (13 year follow-up) (N = 4,811)
Effect of high compared to low levels of occupational physical activity on all cause mortality (based on 17 studies with 193,696 participants)

Coenen et al, 2018
Key Message Four

Understanding the risk of poor health from work requires focusing on more than individuals and individual hazards
Job tenure and work injury

Figure 1  First-time claim rates per 100 full time equivalents by age and job tenure adjusting for occupation, industry, and sex.

Breslin and Smith, 2006
Understanding work contexts that increase risk of injury or illness (OHS vulnerability)

Workers are vulnerable when they are exposed to hazardous environments without adequate protections.

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Protections</th>
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<tbody>
<tr>
<td>No</td>
<td>Adequate</td>
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<tr>
<td></td>
<td>Least Vulnerable</td>
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<tr>
<td></td>
<td>Somewhat Vulnerable</td>
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<tr>
<td>Yes</td>
<td>Adequate</td>
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<td></td>
<td>Somewhat Vulnerable</td>
</tr>
<tr>
<td></td>
<td>Most Vulnerable</td>
</tr>
</tbody>
</table>

Smith et al, 2015
Relationship between OHS vulnerability and work injury

- Time off work due to injury
- Any physical injury
- Worry about injury

Lay et al., 2017
### Adjusted prevalence of anxiety symptoms by PPE and ICP adequacy (N = 5,988 healthcare workers)

<table>
<thead>
<tr>
<th>PPE</th>
<th>ICP</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPE (100% met)</td>
<td>ICP (100% met)</td>
</tr>
<tr>
<td>43%</td>
<td>44%</td>
</tr>
<tr>
<td>PPE (50 to 99% met)</td>
<td>ICP (50 to 99% met)</td>
</tr>
<tr>
<td>50%</td>
<td>48%</td>
</tr>
<tr>
<td>PPE (1 to 49% met)</td>
<td>ICP (1 to 49% met)</td>
</tr>
<tr>
<td>56%</td>
<td>57%</td>
</tr>
<tr>
<td>PPE (0% met)</td>
<td>ICP (0% met)</td>
</tr>
<tr>
<td>61%</td>
<td>61%</td>
</tr>
</tbody>
</table>

PPE = Personal protective equipment; ICP = infection control procedures

Smith et al 2021a
Adjusted prevalence of anxiety symptoms by work status and ICP adequacy (N = 3,305 non-healthcare workers)

ICP = infection control procedures

Smith et al 2021b
OHS vulnerability, inadequate employment standards (ES) protections and prevalence of physical and mental work injury

Nadalin, Mustard & Smith, 2021
Understanding how work relates to health also requires focusing on more than just hazards, but also the positive aspects of work.
An integrated approach to (mental) health

LaMontagne et al 2014
Relationship between job control and social support with risk of mental disorder symptoms and mental well being

Fan, Mustard and Smith, 2019
Six emerging challenges for the future of work

1. The influence of technology
2. Intersectionality
3. Immigration
4. Precarious employment
5. Long and irregular hours
6. Climate change and work
The impact of work on well-being: 6 factors that will affect the future of work and health inequalities

Published: October 15, 2023 8:27am EDT

If public health bodies and policymakers put greater focus on improving the work environment, it could achieve major gains in population health and reduce health inequalities. (Shutterstock)
Technology and occupational health and safety

Share of workers usually working from home, Canada, 2016 to 2023

- 2016: 7.1%
- 2021: 24.3%
- 2022: 22.4%
- 2023: 20.1%

https://www150.statcan.gc.ca/n1/daily-quotidien/230822/g-b001-eng.htm
Adjusted mean scores for psychosocial exposures between online and in-person educators (N = 5,438)

* = statistically significant; ** = statistically significant and practically important

Smith et al, 2022
Artificial intelligence and the work–health interface: A research agenda for a technologically transforming world of work

I am required to be available for my workplace during non-work hours.

I am often required to be available for the workplace after hours for problems.

I am expected to regularly work (beyond checking communications) on off-hours.

During non-work hours, I often monitor my work, but am not required to respond.

I often choose to check my email or calendar during my non-work hours.

I am not connected to my workplace after hours.

Victoria (N = 1,978)

British Columbia (n = 991)

Canada (N = 2,008)
Adjusted prevalence of ‘not being connected to work’, by work location. British Columbia and Canada, and Victoria, 2023

British Columbia and Canada

- Mostly from home: 33%
- Combination: 28%
- Mostly from work: 42%
- At home: 41%
- Various locations: 35%
- At the workplace: 51%

Victoria
Connection to work outside of work hours and mental health (higher scores = worse mental health)

(K6: range 0 to 24; median = 5; mean = 6.06)

(CESD: range 0 to 30; median = 7; mean = 8.63)
Key messages (1)

1. Among the working aged population work is important

2. Labour market experiences (the availability and nature of work) can reinforce and exacerbate inequalities in health at the population level

3. The nature of work and health isn’t just about work-related injuries and illnesses – although work-related injuries and illnesses still contribute large costs to workers, their families and their communities

4. Understanding the risk of poor health from work requires focusing on more than individuals and individual hazards

5. Understanding how work relates to health also requires focusing on more than just hazards, but also positive aspects of work
Key messages (2)

6. Addressing the work environment is an underused lever to address health inequalities.

7. As highlighted through the COVID-19 pandemic, greater collaboration and data sharing, as well as collaborative efforts to increase and improve data capacity, is required between occupational health and (at least) public health.

8. The world of work will continue to change, and we need to make sure we have the data and the methods to evaluate these changes in relation to their impacts on health inequalities at the population level.
References

References (cont)


Thank you

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