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at work

Information on workplace research from the **Institute for Work & Health**

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INSTITUTE FOR WORK & HEALTH
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Research Excellence Advancing Employee Health

Injury statistics don't tell the whole story of women's work-health issues

While some reports suggest that women are at a lower risk of injury on the job than men, injury rate statistics don't necessarily provide a complete picture of the occupational hazards experienced by women in the workplace.

In a new study published in the September issue of *Occupational and Environmental Medicine*, Institute for Work & Health researchers Peter Smith and Cameron Mustard say on the surface it may appear that women have fewer injuries than men. However, when they compared injury rates between genders within different occupations, they found some concerning patterns, especially among women working in jobs with high physical demands.

The study looked at lost-time claims in Ontario among major industry groups for the years 1990 to 2000, including manufacturing and other goods industries, retail, health and social services, and other service industries (such as food and beverage).

In the sample there were 23,406 lost-time claims for women in the year 2000 who were injured on the job, while men had 57,305 lost-time claims. But Smith, a Research Associate at the Institute, says researchers need to go beyond this to truly understand what's happening. "Our analysis suggests that more than half of the difference in injury rates between women and men can be attributed to the types of jobs they performed and the industry group in which they worked–for example manufacturing, health services or retail trade."

While there are fewer women working in physically demanding manual jobs, the study suggests that women who hold these jobs are likely doing more repetitive tasks than males. The findings show that these women are more than twice as likely to suffer non-traumatic musculoskeletal injuries (such as tendinitis and carpal tunnel syndrome) compared to men, who are more likely to suffer more acute and traumatic injuries (such as injury due to falls).

"When we look at women who are doing the same jobs with similar physical demands as their male colleagues, they have rates of injury as high as or sometimes higher than their male colleagues," says Smith. "This is possibly because the job equipment and personal safety equipment are designed to fit the average man."

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The Institute for Work & Health is an independent, not-for-profit organization whose mission is to conduct and share research with workers, labour, employers, clinicians and policy-makers to promote, protect and improve the health of working people.

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Study finds link between depression and the onset of neck & low-back pain

People who report more signs of depression are far more likely to develop troublesome neck or low-back pain over the next year than those who report fewer symptoms, according to a study published by researchers from the Institute for Work & Health (IWH).

The results confirm what many researchers have suspected–that depression somehow makes people more vulnerable to neck or low-back pain, says IWH Scientist Dr. Pierre Côté. He was one of the investigators along with first author Dr. Linda Carroll and Dr. David Cassidy, both IWH Adjunct Scientists.

The study involved 790 Saskatchewan adults who were relatively free of back and neck pain at the time of the initial survey. They were surveyed again six and 12 months later with questionnaires designed to detect the incidence and severity of both depression and back or neck pain.

By the end of the year-long study period, 89 people had reported the onset of troublesome (defined as "intense and/or disabling") back or neck symptoms.

"When we compared those with the highest depression scores to those who scored lowest during the initial survey, we found that the high scorers were four times more likely to have reported a new or recurrent episode of back or neck pain over the course of the 12 months," says Carroll, a professor in the Public Health Sciences Department at the University of Alberta.

She adds that the finding was independent of other known risk factors for both depression and pain–such as poor general health, back injuries and socioeconomic factors like education and income.

Côté says the study is unique in two ways: while other studies have found links between depression and pain, most have focused on whether back or neck

pain made people more vulnerable to depression, rather than the reverse. And unlike other research in this area, the study used a prospective model. "We started with subjects who were largely pain-free and then followed them over time to see who developed symptoms."

How do the scientists explain this apparent link? More research is needed to determine the exact mechanism, Côté says. "Our findings don't imply a simple and direct causal pathway between depression and these physical symptoms. Pain is best understood as an interaction of cognitive, emotional, motivational, behavioural and physical components."

One possible explanation may be a response called "passive coping" which has been consistently associated with both depression and severe pain. "Depressed people often become passive and inactive," explains Carroll. "This may lead them to magnify unpleasant events, including physical symptoms like pain. As well, coping with pain in a passive way–such as withdrawing from social activities and focusing attention on the pain–may worsen the pain and increase the distress of having a pain problem."

The researchers say their findings have implications for clinical practice. "For example, early identification of pain problems in a depressed patient may improve practitioners' ability to intervene more effectively, which may lead to a better outcome," Carroll says.

The results of this study appear in the journal Pain, *107 (2004), 134-139.*

Health and safety policy-makers welcome a new systematic review

A new systematic review is providing some timely help to policy-makers in Ontario and other provinces. The review examines whether financial incentives from insurance and the enforcement of occupational health and safety regulation decrease injury in the workplace.

Led by Institute scientist and economist Dr. Emile Tompa, the review team looked at 44 studies published between 1977 and 2002 in the economics and workplace health literature.

"We wanted to know how employers respond to two specific programs," Tompa explains. "The first is experience rating–an insurance premium setting practice that links the premiums employers must pay to how often workers are injured in their workplace. The second is the enforcement of occupational health and safety regulations."

The study found moderate evidence that the introduction or degree of experience rating had an impact on injury rates. However, it found only limited evidence that the threat of a Ministry of Labour inspection led to a decrease in injury rates.

"Simply knowing that an inspector might visit a workplace and do an inspection does not lead to fewer or less severe injuries," Tompa says. "On the other hand, there is strong evidence that when companies are given orders or fines as the result of inspections, there is an impact on the rate and severity of injuries."

The study was welcomed by Dr. Ed McCloskey, Director of the Occupational Health and Safety Branch at the Ontario Ministry of Labour. "This is exactly the kind of research we're looking for," says McCloskey, who oversees occupational health and safety inspections and enforcement. "In fact, the review will be considered as we develop our front-line enforcement strategies."

McCloskey and his team found the Institute's research so valuable, they shared it with ministries of labour and workers' compensation boards across Canada.

"You can't imagine how critical this piece of information is to us right now," says Kim Dunphy, Assistant Deputy Minister, Occupational Health & Safety of the Newfoundland Government Services Department. "Financial considerations are requiring many governments to undergo program evaluations from a cost benefit perspective. This paper very much validates the important role enforcement programs play in workplace health and safety."

"The study is very timely," says Allan Walker, Executive Director of Saskatchewan Labour's Occupational Health and Safety Division. "We are currently redirecting our enforcement and education activities to be more effective and this study will be quite helpful in developing policies and programs."

For a summary and/or copy of the working paper, please go to http://www.iwh.on.ca/products/wp.php and download working paper #213.

Injury statistics don't tell the whole story of women's work-health issues – continued from page 1

The rate of non-traumatic musculoskeletal injuries is of concern, adds Smith, as they can be hard to diagnose and treat, and therefore accessing compensation for these injuries can be difficult.

"The increased rate of non-traumatic musculoskeletal injuries in women compared to men in jobs with both high and moderate physical demands, and women's lower rates of acute and traumatic injuries, supports the view that there is a strong gendered division of labour in these workplace environments," he says.

"Employers should consider strategies such as job rotation in addition to adjustable machinery and safety equipment that fits women as a way to decrease the risk of non-traumatic and traumatic injury among women in physically demanding jobs," says Smith.

The study is the first to try to explain trends of declining injury rates in Ontario by comparing genders by industry occupations and physical demands.

The results of this study appear in Occupational and Environmental Medicine, *(2004) 61, 750-756.*

Scientists collaborate in new centres

Two new research centres are bringing together scientists who share a common interest in preventing work-related injuries and illnesses. Institute for Work & Health staff are participating in both centres' programs.

The Centre of Research Expertise for the Prevention of Work-Related Musculoskeletal Disorders and Disability (CRE-PREMUS) and the Centre of Research Expertise in Occupational Disease (CRE-OD) were launched earlier this year. Both are funded by the Ontario Workplace Safety & Insurance Board's (WSIB) Research Advisory Council.

"These centres are a welcome complement to the work-health research initiatives under way at the Institute and elsewhere in the province," says Dr. Cameron Mustard, IWH President. "Collaboration with these centres will enable the Institute to expand its research and knowledge transfer and exchange capacity through research partnerships and interactions with other scientists, workplaces and stakeholders."

CRE-PREMUS is based at the University of Waterloo under the direction of Dr. Richard Wells, a professor of kinesiology at the University of Waterloo.

"Our focus is the prevention of work-related injuries, including low-back pain and disorders affecting the upper limb," explains Wells. "The centre's role is to fund, launch and support a broad range of relevant research in the area of musculoskeletal injury–everything from learning more about the biological changes that occur with these injuries to implementing and evaluating workplace interventions in different work sectors and environments."

CRE-OD focuses on the prevention and treatment of occupational diseases such as noise-induced hearing loss and allergic reactions in the workplace. Dr. Linn Holness is the director of the centre, which is being administered through the University of Toronto and St. Michael's Hospital.

"Occupational diseases remain a significant issue in the workplace. Although we still see traditional occupational diseases (such as occupational asthma), new ones, like Severe Acute Respiratory Syndrome, are being identified. The number of claims submitted to the WSIB for these diseases is increasing," she says.

"We are creating a network of researchers, and linking with workplaces and community partners to identify key issues and questions related to occupational diseases," explains Holness. "We also hope to increase the number of researchers active in this field through mentoring programs and training opportunities for MSc and PhD students."

Dr. Wells and Dr. Holness are IWH Adjunct Scientists.

Workplace health: "The next big idea?"

What would it take to make healthy work environments a top national priority? According to Dr. Graham Lowe, this will only happen when employers, employees, unions, professional associations, and governments find common ground.

Lowe delivered this message to an audience of nearly 100 who attended the Annual General Meeting (AGM) of the Institute for Work & Health held in Toronto earlier this year. Lowe is president of the Graham Lowe Group Inc., a research and consulting firm that specializes in creating healthy and productive work environments.

The Institute invited Lowe, who recently joined the Institute's Scientific Advisory Committee, to deliver the 2004 Alf Nachemson Lectureship at its AGM. The lectureship was established in 2002 to honour the significant contribution made by distinguished Swedish orthopedic surgeon and researcher Dr. Nachemson, who used research evidence as a factor in clinical decision-making.

"Right now the players are on largely parallel courses," Lowe says. "Employers want efficiency, productivity and adaptability. Employees want decent jobs that offer dignity, respect, personal development and economic security. Communities and citizens want ethical corporate behaviour. Unions want equity and fairness. Governments are promoting innovation and skills as the route to a better quality of life. And not least, researchers want the best evidence on healthy workplace determinants translated into practice."

It's possible to make healthy work environments "the next big idea" in Canadian workplaces, he adds, but only if the players start working co-operatively. He also believes it's time to link employee health and safety to performance and business strategy.

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Q&A on qualitative research with Dr. Ellen MacEachen

Like all scientists at the Institute for Work & Health, Dr. Ellen MacEachen wants to learn more about workplace health and injury. But as a qualitative researcher she approaches research problems differently than many of her colleagues.

MacEachen, a medical sociologist, received the 2003 Mustard Fellowship in Work Environment and Health at IWH, as well as funding from the Social Sciences and Humanities Research Council to study how the new economy influences managers' commitment to employee health.

Q. What's the difference between a qualitative researcher and one who does quantitative research?

We ask different types of research questions and use different methods. Let's say you wanted to study managers' commitment to health and safety programs. A quantitative researcher might develop a survey based on what's known about manager commitment, administer it to hundreds of managers, then do a statistical analysis of the responses and present the findings using numbers and percentages.

As a qualitative researcher, I would take a fresh look at the whole concept of manager commitment. I might meet personally with a much smaller sample–say 40 managers–and ask open-ended questions like: "Tell me about your experience as a manager" and "How are you able to commit to health and safety in your workplace?" I would present my findings in a narrative–rather than numerical–fashion and also place the results in context, to try and understand why managers responded as they did.

Q. Does the area of workplace health lend itself to using this kind of open-ended approach?

Absolutely. Qualitative research is useful for learning about phenomena that are relatively new or poorly understood, and also those that involve people's beliefs and understandings. Workplaces are complex and changing social systems, and we need to understand these complexities if we are to fully understand such issues as workplace health and safety, risk, and prevention of illness and injury.

Q. Who uses the results of such qualitative research?

During in-depth interviews, we often discover some unforeseen outcome of a particular policy that isn't visible in the statistics. Such findings are of interest to policy-makers who want to know how well health and safety regulations or interventions are working.

Qualitative research can also play a role in developing evidence-based practices. By exploring the beliefs and understandings of workers, managers, clinicians and others, we can learn why the research findings aren't being implemented or implemented successfully.

Q. You recently looked at how decision-makers in four organizations dealt with repetitive strain injury in workers. Why did this interest you?

When I gathered my data five years ago, RSI was a huge and costly problem that was being heralded in the media as the workplace epidemic of the 1990s. I felt that as a complex health condition, RSI was not well-understood and wondered how front-line managers were dealing with it.

Q. What did you find out?

I hadn't anticipated how strongly the managers would view RSI as an administrative problem, and how this would impact on their interventions. It's difficult for managers to set aside departmental production needs and consider health and safety problems. The study suggests that preventing RSI in workplaces goes far beyond our current understanding of physical and psychosocial risk factors. The managers I interviewed saw RSI risk as multi-dimensional. Their RSI management

Dr. Ellen MacEachen

strategies considered physical risk factors in the workplace, but also organizational changes, workers' compensation claims costs, flexibility around contract issues, and labour relations issues.

Q. You are currently looking at how managers function in new economy workplaces? What does that mean and why is it important?

In the past decade, profound changes have occurred in how work is organized. Current health and safety policies still rest on an outdated model of stable workplaces and ongoing, long-term worker-workplace relationships. I want to learn what kinds of commitment managers can make now that everyone tends to have shorter job tenure and much looser contractual relationships.

Q. What does the future hold for qualitative research here at IWH and elsewhere?

I think qualitative research can help to conceptualize workplace health issues by asking "What are some emerging forces in workplace health? How do workplaces practice health and safety? What can we learn about the context of these events?" I believe we'll see more of a "teaming up" of quantitative and qualitative researchers. I recently participated in a systematic review with IWH Scientist Dr. Renée-Louise Franche (see *Infocus*, fall 2004). The review is unique because it involved collaboration between quantitative and qualitative researchers to determine what interventions are most effective in safe and early return to work.

Institute News

IWH fall plenary series in full swing

Each year from September to June, the Institute hosts a series of external plenaries devoted to discussing new or ongoing research related to workplace health. The usual format is a presentation followed by discussion. The presenter may be an Institute scientist or an outside expert.

To see a list of presentations scheduled for the fall series, visit the IWH web site at: http://www.iwh.on.ca/about/plen.php

Published research from the Institute

The following working papers were recently published in peer-reviewed journals. Complete lists of available and published working papers can be found on the IWH web site at www.iwh.on.ca, then click on *Products & Publications*.

- Examining the associations between physical work demands and work injury rates between men and women in Ontario, 1990-2000. PM Smith, CA Mustard. *Occupational and Environmental Medicine* [2004] 61, 750-756.
- Reconceptualizing the nature and health consequences of work-related insecurity for the new economy: the decline of workers' power in the flexibility regime HK Scott. *International Journal of Health Services* [2004] 34, 143-153.

Syme Fellowships Appointments

Congratulations to the recipients of this year's *S. Leonard Syme Training Fellowships in Work & Health*. Both recipients are PhD students in social science and health, studying at the University of Toronto. The recipients are:

Bianca Seaton who is in her first year of her PhD program and is focusing on the occupational risks of health-care workers, including infectious diseases like Severe Acute Respiratory Syndrome (SARS). Her thesis work will describe health-care workers' understanding of their occupational health risks, their related work practices and hospital policies designed to protect workers' health.

Heather Scott

Heather Scott, a part-time Research Associate at the Institute. She is pursuing research into recent forms of work-related insecurity and the impact this has on workers' health over time.

The Fellowship awards were launched in 2003 to recognize the contributions of Dr. S. Leonard Syme to the Institute for Work & Health as past chair of the Scientific Advisory Committee. Syme, a professor emeritus in the School of Public Health at the University of California at Berkeley, served as chair for six years.

The Fellowships are awarded to masters' or doctoral students and supports the Institute's commitment to developing and training researchers in the field of work and health.

Workplace health: "the next big idea" continued from page 4

Right now workplace health promotion programs are focused on changing the health-related behaviours and attitudes of employees, says Lowe, who is also a research associate at the Canadian Policy Research Networks. "So any link between health and a business' overall strategy remains weak," he explains. "And because workplace health promotion focuses on changing employee behaviours, this keeps organizational factors that support health and wellness off the executive team's agenda."

Lowe believes "change agents" (individuals who plan and implement organizational change) must take three important steps:

"First, they must take every opportunity to link employee health and safety to the organization's performance and its business strategy. Second, they must expand the scope of individual attitudes and behaviours beyond the realm of health to include productivity. And third, they must start thinking of healthy work environments as the enabling context for learning and innovation."

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