

otwork

IN THIS ISSUE

2 / Partnering on a tool to estimate the occupational risks of COVID

3 / COVID worries highest among workers with both physical, mental health disabilities

5 / Grant round-up: A selection of new studies supported by external grants in 2020-21

6 / Inadequate employment standards, OHS vulnerability add to higher injury risks

7 / Emerging evidence points to negative health effects of physical work demands

Photo ©iStock.com/maxvis

IWH hosts new program to mentor Ontario's frontline doctors in occupational medicine

Project ECHO program aims to build health-care providers' knowledge about work-related illness, injury and workers' compensation system

Over a video screen, Dr. Andrea Furlan listens to a family doctor in Colborne, Ont., describe a case she has been grappling with—a patient living with chronic pain following a traffic collision. Joining Furlan are a team of specialists and frontline practitioners across a range of disciplines—including general physicians, nurse practitioners, psychiatrists, occupational therapists and pharmacists. They take turns asking the family doctor questions about her patient before offering a diagnosis and treatment recommendations, all the while acknowledging the case as both difficult to manage and all too familiar in their own practices.

"In these sessions, everyone walks away having learned something—not just the practitioners on the frontlines but even the specialists leading the session," says Furlan, a scientist at the Institute for Work & Health (IWH) who also holds a staff physician



Dr. Andrea Furlan

and senior scientist post at the Toronto Rehabilitation Institute.

"I've heard people say they learn more in these sessions than they do from textbooks and journals. They discuss real-life cases, which can be messy and complicated. What they learn in these sessions, they don't learn anywhere else," says Furlan.

Since 2014, Furlan has been leading an initiative that connects medical specialists with practitioners across Ontario to share knowledge in the management of chronic pain and opioid stewardship. It's based on a hub-and-spoke model of health-care mentoring and support called Project Extension for Community Healthcare

continued on page 4

IWH updates

Mustard post-doc fellow named IWH associate scientist

Dr. Faraz Vahid Shahidi has been appointed an associate scientist at the Institute for Work & Health (IWH). Shahidi recently completed the Mustard post-doctoral fellowship in work and health at the Institute. He holds a PhD in social and behavioural health sciences from the University of Toronto and an MPhil in comparative social policy from the University of Oxford. To see Shahidi's bio, go to: www.iwh.on.ca/people/faraz-vahid-shahidi

IWH research associate awarded Health System Impact Fellowship

IWH Research Associate **Sara Lacarte** has been awarded a Health System Impact Fellowship by the Canadian Institutes of Health Research (HSIF). Lacarte has been working with IWH Senior Scientist **Dr. Emile Tompa** at the Centre for Research on Work Disability Policy (CRWDP). As an HSIF fellow, Lacarte will be embedded at the Canadian Autism Spectrum Disorder Alliance (CASDA) in support of its work with the Public Health Agency of Canada to create a comprehensive national autism strategy. With the support of CRWDP, Lacarte will conduct research to identify key gaps in services for persons with autism in obtaining and sustaining employment. Her study is aimed at developing policy recommendations on improvements in vocational supports and community structures across Canada. To see her bio, go to: www.iwh.on.ca/people/sara-lacarte

XXII World Congress on Safety and Health at Work launches in less than a month

Don't miss your chance to join leading experts and decision-makers in occupational health and safety (OHS) as they discuss the most important topics and trends affecting workers and workplaces now and in the future. Sign up now for the XXII World Congress on Safety and Health at Work, taking place virtually September 20-23. IWH is a national co-host of the Congress. For more information and to sign up, go to: www.safety2021canada.com

STAY CURRENT



Follow us on Twitter:
www.twitter.com/iwhresearch



Connect with us on LinkedIn:
www.linkedin.com/company/institute-for-work-and-health



Subscribe to our YouTube channel:
www.youtube.com/iwhresearch



Sign up for IWH News:
www.iwh.on.ca/subscribe

What Research Can Do

Partnering on a tool to estimate the occupational risks of COVID

Early in the COVID-19 pandemic, as public health officials and policy-makers tried to understand the new coronavirus, it became clear that certain communities were affected more severely. A strong link was becoming apparent between the social determinants of health, including work, and the risks of COVID-19 infection and poor outcomes.

At Public Health Ontario (PHO), a team led by Drs. Brendan Smith and Erin Hobin saw a need to better understand how work-related exposure to COVID-19, such as working in close proximity to others, differed across—and interacted with—sociodemographic factors (e.g. age, sex, race or ethnicity, immigrant status and household income). The team set out to create an open-source interactive data visualization tool that drew on publicly available data to describe the different risk levels. The result is the Occupational Exposure to COVID-19 Risk Tool, launched in December 2020.

"It may be hard to remember, but early in the pandemic, very limited data was available to understand what factors were leading to higher rates of COVID-19 in certain communities," says PHO's Smith, who co-led a team that included scientists from the Institute for Work & Health (IWH)—an example of system collaboration to answer emerging research questions. "We were trying to figure out what role work played in increasing the risks of COVID-19 across different communities, different racial and ethnic groups, etc."

The tool draws on three sources of data. The provincial/territorial lists of essential services helped the team identify the workers who could work remotely during the pandemic. The second source, the 2016 Canadian Census, provided data on the occupations and industries of 18 million Canadians, as well as information on the sociodemographic profile of 500 different occupation groups.

The third source, the O*NET database in the United States, offered detailed descriptions of job contexts and work descriptions for specific jobs and industries. This information allowed the team to assign scores representing, for each occupation in the tool, whether and to what extent workers

are exposed to infectious diseases, do their work outdoors, are in close proximity with others or potentially do their work from home. Smith stressed that this information was developed prior to the pandemic and did not reflect adjustments made in response to COVID—e.g. physical distancing measures, and so on.

The tool allows users to examine data by key sociodemographic and work characteristics, and to find risk profiles across different occupations within a given industry. Importantly, the tool also lets users filter for results specific to the public health units or health regions within provinces. "We wanted to make local or regional data available for people to use in making decisions," Smith explains.

Since launching the tool, Smith has seen it used in ways that went beyond the team's original intent. Some have used the tool for information on worker populations in specific industry or occupational groups. More recently, the tool helped inform the Ontario Ministry of Health and Long-Term Care's vaccine prioritization plan for health-care and other sectors. Smith's team also made available regional data for each public health unit in the province to help identify which health-care occupations were most at risk and how many workers would be affected.

Smith credits the involvement of IWH scientists for their expertise on occupational data sources. "IWH scientists contributed extensive experience working with occupation and industry classification information to the team," he says. "They have been key to helping us interpret findings, especially with regards to which groups of workers were at higher risks."

This collaboration has already led to additional studies exploring patterns of COVID risks during the pandemic, says IWH Senior Scientist Dr. Peter Smith. "Working on this tool connected IWH and PHO, and has led to other projects examining levels of worker protections across industry and demographic groups, and allowed for accurate estimates of COVID infection rates due to workplace outbreaks across industries."

COVID worries highest among workers with both physical, mental health disabilities

Greater concerns among workers with disabilities stem from their work conditions, not disability status

How worried were people with disabilities during the COVID-19 pandemic about their finances, their health and the level of workplace support they perceived?

An Institute for Work & Health (IWH) study examining this question among workers—both physically at work and working from home—found a nuanced picture. But it also saw a number of clear patterns. Overall, the study found heightened perceived vulnerability among people with both a physical and mental health disability. This group consistently reported greater concerns about their health, their finances and the level of workplace support given to them, in comparison to people who had no disabilities or who had either a physical or a mental health disability.

A second clear pattern was the importance of job conditions—not disability—in predicting workers' COVID concerns. In other words, the heightened concerns reported by workers with disabilities in this study were linked to such work factors as low job control, high job stress, unmet accommodation needs, little job security and lack of work options. Once these factors were accounted for, differences across the disability groups no longer remained.

"The reasons why people with disabilities were more concerned and perceived less support can be traced back to their work situations before the onset of COVID, which were often precarious," says IWH Senior Scientist Dr. Monique Gignac, who led this study.

She points to the type of work people with disabilities were more likely to hold, such as part-time work or work in short-term contracts. But even more important

were the job conditions they described, she notes. "The stressful job, the job with low job control, the feeling of being 'locked in' or not having options, the lack of accommodations—these were the job conditions that made workers with disabilities feel so concerned and unsupported during the pandemic," says Gignac.



She notes that the surveys were conducted early in the pandemic, during the first wave, and that, overall, survey participants reported feeling supported by their employers. "We don't know if and how people's perceptions changed in successive waves of the pandemic—or to what extent workplaces continued to support their workers."

Four groups of workers surveyed

The study, published online in June 2021 in *Disability and Health Journal* (doi:10.1016/j.dhjo.2021.101161), drew on a large sample of 3,000 survey participants. It compared pandemic experiences across four groups of workers: those with no disability (1,960 participants), a physical disability (455), a mental health disability (360), and both types of disability (291).

In the survey, workers with no disability reported more pay, more job control and less job stress compared to those with a mental health or both a physical and mental health disability. Workers in all disability groups were more likely to see themselves as locked in their jobs. Workers with a physical disability, compared to those with no disability, reported greater concern about their health. Workers with a mental health disability were significantly less willing to speak with a supervisor about their needs for workplace accommodations.

Workers with both types of disability were also less willing to speak with a supervisor about their accommodation needs. They also reported more unmet accommodation needs and felt they had less organizational support to manage their personal needs than any of the other groups. When compared to people with a physical disability, individuals with both types of disability were more concerned about their finances.

Another finding of note was the lack of major differences in the experiences of people with a physical or mental health disability. "The job conditions associated with COVID concerns were similar for both groups," Gignac says. "The message for workplaces is that the supports and accommodations don't always need to be different for people living with mental health disabilities versus physical disabilities. Employers need to address job conditions and provide healthy and supportive psychosocial environments. These will go a long way."

Gignac notes that the vulnerabilities experienced by people with both types of disability will continue to be a concern post-pandemic. "As we've seen in various contexts, the pandemic has shone a light on different types of precarity that our society needs to address," says Gignac. "This study reveals that the challenges encountered by people living with a disability go beyond the symptoms and limitations created by health conditions. They revolve around perceptions of support, concerns about negative consequences if a disability is disclosed, and other psychosocial work factors." ■

Family doctors and other frontline health-care providers often unfamiliar with workers' compensation and return-to-work cases

continued from page 1

Outcomes—also known as Project ECHO. The initiative uses videoconferencing technology to build health-care capacity, especially in remote and underserved communities, to reduce inequities in service delivery across different regions. One of the mottos of the project is ‘We move knowledge, not people,’” says Furlan.

She's now starting a new Project ECHO focused on occupational and environmental medicine (OEM), in partnership with Dr. Anil Adisesh, the director of the occupational medicine division at the University of Toronto. The two-year pilot initiative, housed administratively at IWH, will launch September 2021. An assessment of learning needs was conducted in the spring of 2021, and over the summer, the project team developed the training curriculum and invited specialists to form the expert “hub”.

The specialists will consist of professionals in occupational medicine/nursing/therapy, environmental health, occupational health and safety, disability management, mental health and occupational hygiene, as well as experts in Ontario's workers' compensation system—i.e. the Workplace Safety and Insurance Board (WSIB). By the end of the summer, frontline health-care providers—“the spokes”—will be able to register for the program through a dedicated project website.

“Occupational medicine is a lot like chronic pain in that it can involve very complex situations,” says Furlan. “Treating patients with work-related injuries and illnesses can be time-consuming. And in family medicine, you don't learn a lot about how to manage the more complicated cases.”

Studies highlight training gap

Furlan and Adisesh point to research, conducted at IWH and elsewhere, that shows frontline health-care practitioners play a key role in supporting injured or ill workers in returning to work. But doctors and other frontline health professionals aren't always familiar with how to communicate

with workplaces about adjustments or work modifications, how to take a work history to determine whether an injury or illness is work-related, or how to communicate with workers' compensation systems about medical diagnoses or recovery expectations.

Research has also shone a light on the potential for mistrust and miscommunication across the different professions involved in return to work—whether that's between disability managers and health-care providers or even among health-care providers of different disciplines.

“These types of issues can really challenge our competence, and it's not always easy for frontline providers to turn to a colleague for answers,” says Furlan.

Two-year pilot project

In this two-year pilot project, Furlan and Adisesh will run two 12-week cycles, each comprising up to 100 health-care practitioners with an injured or ill worker in their case load. Practitioners can include physicians, physician assistants, nurse practitioners, registered nurses, pharmacists, psychologists, social workers, chiropractors, registered massage therapists, and physical and occupational therapists—whether in team or solo

practice. Participants will meet via video conferencing once a week for 90 minutes.

Each session will consist of a training component and a case discussion component. Participation in the first 12-week cycle is limited to practitioners who have a patient with an active WSIB claim. Depending on the success of the first cycle, eligibility criteria may be expanded for the second cycle to include practitioners treating anyone whose return to work is not going as planned, whether the injury or health condition is work-related or not. The pilot project will also consist of a research component focused on evaluating the effectiveness of this model for building competencies in the field.

Even months before program launch, Furlan has already seen signs of enthusiasm for it. She was approached by a practitioner in Nunavut, who learned of the program when the needs assessment survey went out and wanted to take part. For now, the program remains restricted to professionals serving injured workers in Ontario, but the response indicates to Furlan how pent-up the need is for such a program.

For more about the project, go to: www.iwh.on.ca/projects/echo-oem-piloting-tele-mentoring-program-in-occupational-and-environmental-medicine. ■

ABOUT PROJECT ECHO

The Project ECHO model was created by Dr. Sanjeev Arora at the University of New Mexico in 2003 in response to inequitable service delivery in the treatment of viral hepatitis across rural, underserved and socially disadvantaged regions. The program's goals are to use video conferencing technology to leverage scarce health-care resources, share best practices and reduce variation in care. The model has been replicated in 800 programs in 39 countries.

A Project ECHO program on chronic pain and opioid stewardship, which Dr. Andrea Furlan created with Dr. Ruth Dubin of Queen's University, was the first ECHO program in Canada. In 2018, with funding from the Ontario government, a “superhub” was established to support about 30 ECHO projects throughout Ontario—in such practice areas as autism, bariatric care, chronic pain, epilepsy, geriatric care, mental health, opioid use and pediatric care. A 2016 systematic review of 39 studies describing Project ECHO's involvement in addressing 17 medical conditions suggests that Project ECHO changes provider behaviours, improves patient outcomes and is potentially cost effective.

Grant round-up: A selection of new studies supported by external grants in 2020-21

Opioid-related harms and workers, PTSD support for first responders among research funded

Researchers at the Institute for Work & Health (IWH) rely on funding support to examine emerging questions at the intersection of work and health. The Institute is supported by core funding from Ontario's Ministry of Labour, Training and Skills Development. But it also draws on other funding agencies and programs to further explore injury and disability prevention issues.

Understanding the use of cannabis to treat work-related conditions

Interest is growing in the potential medical benefits of cannabis to treat work-related conditions. Yet, we know virtually nothing about patterns of cannabis use among injured workers. In a new research project funded by the Canadian Institutes of Health Research (CIHR), IWH Associate Scientist Dr. Nancy Carnide and Senior Scientist Dr. Peter Smith are tapping into a sample of 1,200 Ontario workers who had been part of an earlier IWH study on health and work outcomes following a work-related injury. In this new study, Carnide's team will conduct follow-up interviews focused on the use of cannabis to treat work-related conditions.

The study aims to identify the factors workers consider in deciding whether to use cannabis and to seek medical authorization and reimbursement for its use. The team will also examine changes over time in patterns of use and authorization, as well as associations between use and long-term indicators of recovery such as return to work, pain, mental health and sleep.

Monitoring opioid-related harms among Ontario workers

In 2016, the Occupational Cancer Research Centre (OCRC) launched the Occupational Disease Surveillance System (ODSS), a unique system that draws on linkages between provincial health-care databases and workers' compensation claims information.

Designed to identify groups of workers whose occupations may have higher exposure to substances or conditions that increase the risk of occupational illness, the ODSS can be used to investigate numerous cancers and non-malignant diseases across hundreds of occupational and industry groups.

In a new project collaboration, a team co-led by IWH's Carnide and OCRC Director Dr. Paul Demers is using the ODSS to monitor patterns of opioid use and opioid-related harms among injured workers. The research, funded by the Public Health Agency of Canada, will capture current trends in opioid-related hospitalizations and emergency department visits. The results of this research will help inform targeted prevention and opioid harm reduction activities. "As part of this project, we hope to develop an interactive data-visualization platform," says Carnide. "It will allow members of the public to generate customized reports of the findings for different worker subgroups."

Supporting first responders after a post-traumatic stress injury

Studies conducted to date estimate that between eight and 23 per cent of first responders experience a post-traumatic stress injury (PTSI). However, little is known about how workplaces can support first responders in returning to work following a PTSI. Although studies have shown that the return-to-work process is similar for physical and mental health conditions, psychological injuries that arise from work exposure may require different strategies.

In a study funded by Alberta's Supporting Psychological Health in First Responders program, IWH Scientist Dr. Dwayne Van Eerd and IWH Senior Scientist Dr. Emile Tompa are synthesizing the existing research literature on workplace policies and practices to prevent work disability following PTSI. The team is using a method developed at

the Institute, which integrates systematic review findings with current organizational practices and policies. "Considering practice evidence ensures that perspectives of key stakeholders, such as first responder staff and supervisors, are included in the evidence synthesis," says Van Eerd. "In synthesizing the best available evidence about organizational policies and practices, we hope to provide policy and practice recommendations for first responder organizations."

Exploring sex/gender differences in work-related communicable disease exposure

Do men and women within the same occupations have different exposures to workplace-acquired communicable diseases? Although women make up nearly half the Canadian labour force, much of our understanding of work exposures is still male-centric. Social (gender) and biological (sex) differences can affect men and women in different ways when it comes to the risks of workplace-acquired communicable diseases. Social factors may include the types of jobs and industries in which men and women work, differences in their levels of compliance to infection control measures or the availability of personal protective equipment that is designed for both men and women. Biological factors such as differences in immunity to infections can also affect how men and women are exposed to communicable diseases in their workplaces.

A team led by IWH Associate Scientist Dr. Aviroop Biswas is conducting a systematic review focused on differences between men and women in the same occupations or industries. "There can be a perception that sex/gender differences in work-related communicable diseases do not exist or that, if they exist, they're due to the representation of men and women in certain jobs and industries," says Biswas. "By comparing work-related disease exposures for men and women in the same occupations, we hope our research can inform where potential inequalities exist in prevention practices and policies." ■

Inadequate employment standards, OHS vulnerability add to higher injury risks

IWH study finds injury risks increased five-fold when both types of work vulnerability were present

In all Canadian jurisdictions, legislated employment standards set minimum working conditions and basic entitlements regarding pay, vacation, sick days, work breaks and more. Although people whose workplaces or jobs fail to meet these standards are thought to be vulnerable workers, a lack of these standards is not typically thought to cause a greater risk of being injured or getting sick due to work.

A new study at the Institute for Work & Health (IWH) now suggests that inadequate employment standards are a risk factor for work-related injuries. The study found consistent and statistically significant differences in injury outcomes between survey participants who experienced adequate employment standards overall and those who didn't. For example, self-reported physical injuries were more common among workers who didn't have regular pay, meal breaks, paid vacation or paid sick leave.

What's more, the study found the risk of injury was higher when inadequate employment standards overlapped with occupational health and safety (OHS) vulnerability. Here, the study used the definition of OHS vulnerability developed at the Institute. Under this definition, workers are considered to experience OHS vulnerability when they are exposed to hazards at work and lack at least one (or any combination) of three types of protection: health and safety policies, awareness of OHS rights, and individual empowerment to take preventive measures.

"Past research at IWH found that workers who experience OHS vulnerability report higher injury rates. In this study, we wanted to examine the risk of injury associated with inadequate employment standards apart from, and then combined with, inadequate protections from workplace hazards," says Victoria Nadalin, an IWH research analyst and lead author of the article on the study,

published online in July 2021 by the journal *Safety and Health at Work* (doi:10.1016/j.shaw.2021.07.002). "By combining the two types of risk, we were looking to see if there was a super-additive—or synergistic—effect."

The team did find occupational health and safety vulnerability and inadequate employment standards were each associated on their own with increased injury outcomes. Workers reporting inadequate employment

and inadequate employment standards, Nadalin notes that nearly half of this group (46 per cent) reported being injured or sick due to work in the previous 12 months.

"The super-additive effect that experiencing both inadequate employment standards and a lack of OHS protection has on injury rates is an important finding, given the fact that a proportion of workers experience both together," she says.

Senior Scientist Dr. Peter Smith, who led the study, concurs that the takeaway is the need to understand that the risk of these inadequacies can combine to cause greater risk of injury.

"When people refer to vulnerable workers, they are often not specific about whether they are referring to OHS vulnerability or another type of vulnerability like inadequate employment standards," he says.

"While these two types of vulnerability don't always occur together, when they do, our study showed their combined association with work injury outcomes appears to be synergistic. That is, they are associated with a higher-than-expected risk of work injury—higher

than the association of either inadequate employment standards and OHS vulnerability on its own. This synergistic effect suggests that employment standards should be part of what's considered when assessing a workplace's OHS program."

How the study was done

The study is based on surveys conducted in Ontario and British Columbia in the fall of 2017, and in Alberta in the spring of 2018.

Eligible participants were people aged 18 years or older who worked at least 15

continued on page 8

| INJURY RISK AND VULNERABILITY | |
|--|----------------|
| The following table shows the risk of physical injuries/illnesses among surveyed workers according to their reported adequacy of employment standards and OHS vulnerability. | |
| Vulnerability | Risk of injury |
| Adequate employment standards, no OHS vulnerability (comparison group) | 1.00 |
| Inadequate employment standards, no OHS vulnerability | 1.82 |
| Adequate employment standards, OHS vulnerability | 2.86 |
| Inadequate employment standards, OHS vulnerability | 5.11 |
| Synergy index | 1.53 |

standards alone were at an increased risk of workplace injury. Workers reporting OHS vulnerability alone were at an even higher risk of injury.

The team also found a synergistic effect. That is, when workers reported both types of vulnerability—inadequate employment standards and OHS vulnerability—their risk of injury was greater than it was among those reporting just one type of vulnerability alone, and five times greater than among those reporting neither type of vulnerability.

While only 14 per cent of the study participants reported both OHS vulnerability

Emerging evidence points to negative health effects of physical work demands

Findings on 'physical activity paradox' suggest need for warm-ups, work breaks for labourers: scientist

A growing body of research is showing an association between physically demanding work and detrimental health outcomes such as heart disease and early death. Some call this association the “physical activity paradox” because, on its surface, it seems to run counter to the association between exercise and improved health outcomes.

And while more research is needed to understand the reasons or factors behind this paradox, workplaces and policy-makers should not wait to address the risks of physically demanding work.

These were among the key messages delivered by Institute for Work & Health (IWH) Associate Scientist Dr. Aviroop Biswas in a recent IWH Speaker Series presentation. (To watch the webinar, go to: www.iwh.on.ca/events/speaker-series/2021-may-11).

Biswas clarified that physically demanding work should not be confused with exercise or resistance training. Physically demanding work involves tasks such as prolonged standing, heavy lifting, and monotonous and awkward working postures, often performed for long periods, with insufficient recovery time or without sufficient warm-up.

“Emerging research suggests that this type of very physically strenuous work is not beneficial. It may even be bad for you,” he added.

A body of evidence

In the presentation, Biswas summed up several studies pointing to this paradox. Among them is a study led by Danish researcher Dr. Andreas Holtermann and published in the *European Heart Journal* in April 2021 (doi:10.1093/eurheartj/ehab087).

With a sample of over 100,000 women and men aged 20 to 100, followed for 10 years between 2003 and 2014, the study found people with higher levels of leisure time physical activity had a 15 per cent lower risk of a major adverse cardiovascular

event—a term that includes heart attack, heart failure, stroke, bypass surgery and other serious consequences of heart dis-



ease. They also had a 40 per cent lower risk of dying from any cause.

In contrast, those with higher levels of physically demanding work had a 35 per cent *greater* risk of major adverse cardiovascular events and 27 per cent greater risk



Dr. Aviroop Biswas

of dying from any cause. What's more, Biswas noted that people who had both high levels of leisure time exercise and high levels of work-related physical activity were among those with the highest risks of major heart events.

“Usually, you think that the more vigorous exercise you do, the lower your risk of cardiovascular events. But at least in this study, we're seeing a net risk when leisure time physical activity is combined with strenuous physically demanding work,” said Biswas.

The paradox is most pronounced among workers with pre-existing conditions, Biswas added. He pointed to another study in Denmark, this time of female nurses aged 45 to 64, followed for 15 years (doi:10.1177/2047487316631681).

This study found nurses with high blood pressure who had high physical work demands were three times more at risk of heart disease than nurses with normal blood pressure who had moderate physical demands at work. (In contrast, nurses with normal blood pressure who had high physical work demands were only about 30 per cent more at risk of heart disease—a difference that was not statistically significant and may

have been due to chance.)

A similar pattern was seen in a study on the risk of hardening arteries among people with coronary heart disease (doi:10.5271/sjweh.1171), as well as in a study on the risk of heart disease among people with low and high fitness levels (doi:10.1097/JOM.0b013e318233865f).

Ontario study on diabetes

Biswas also pointed to his own research on the risk of diabetes in a sample of more than 7,000 Ontario workers, followed for 15 years. The study, published in March 2021 in the *American Journal of Preventive Medicine* (doi:10.1016/j.amepre.2020.09.017), found people who worked in sedentary jobs and who met Canadian physical activity guidelines—i.e. engaged in at least 150 minutes of moderate to intense leisure time physical activity a week—had a 37 per cent lower risk of developing diabetes over 15 years.

However, the benefits of intense leisure time activity on reducing diabetes risk were

continued on page 8

AT WORK

At Work is published by:
Institute for Work & Health
Editor: Uyen Vu
Layout: Uyen Vu, Jan Dvorak
Director of Communications: Cindy Moser
President: Cameron Mustard
Issue #105 / Summer 2021 / ISSN # 1261-5148
© Copyright 2021

INSTITUTE FOR WORK & HEALTH

400 University Avenue, Suite 1800
Toronto, Ontario M5G 1S5
Phone: 416.927.2027 Fax: 416.927.4167
Email: atwork@iwh.on.ca

MISSION

The Institute for Work & Health promotes, protects and improves the safety and health of working people by conducting actionable research that is valued by employers, workers and policy-makers.

BOARD OF DIRECTORS

CHAIR

Kevin Wilson

Former Assistant Deputy Minister, Policy, Program and Dispute Resolution Services
Ontario Ministry of Labour

DIRECTORS

Melissa Barton

Former Director, Organizational Development and Occupational Health, Safety and Wellness
Sinai Health System

Andréane Chénier

National Representative, Health and Safety
Canadian Union of Public Employees (CUPE)

Mark Dreschel

Director of Talent and Culture
Coldbox Builders

Kelly Jennings

Senior Consultant, Jennings Health Care Consulting

Kate Lamb

Executive Director, Client and People Services
Law Society of Ontario

Louise Lemieux-Charles

Professor Emeritus, Institute of Health Policy, Management and Evaluation, University of Toronto

Cameron Mustard

President & Senior Scientist
Institute for Work & Health

Norman Rees

Former Chief Financial Officer, Public Health Ontario

Emily A. Spieler

Chair, IWH Scientific Advisory Committee
Edwin W. Hadley Professor of Law
Northeastern University School of Law

Michael Wolfson

Adjunct Professor, Epidemiology and Law
University of Ottawa



The Institute for Work & Health operates with the support of the Province of Ontario. The views expressed in this publication are those of the Institute and do not necessarily reflect those of the Province of Ontario.

OHS vulnerability defined as being exposed to hazards while lacking protection

continued from page 6

hours a week in workplaces with five or more employees. The sample of nearly 3,000 workers was primarily drawn from an existing panel of people willing to be contacted for surveys. To test this sample for potential selection bias, 10 per cent of the sample was recruited via random phone dialing.

The surveyed workers were asked five questions about employment standards: In the last 12 months, has your employer ever failed to pay you the wages you are due? Do you have a regular payday? Do you have the right to paid vacation? Do you have the right to paid sick leave? In your job, how often do you work more than five hours without a meal break?

Study participants were also asked to complete IWH's validated 27-item OHS Vulnerability Measure, which includes questions

about nine common workplace hazards, as well as questions about the three types of OHS protection: OHS policies and practices, OHS awareness and OHS empowerment.

Workers were considered vulnerable if they said they were

exposed weekly or daily to two or more hazards or one key hazard, and if they disagreed or strongly disagreed that they were protected by one or more of the three types of OHS protection. Study participants were also asked whether they had a work-related injury or illness in the previous 12 months, either physical or psychological, and whether they missed work due to the injury or illness. ■



Workplaces can start acting on growing evidence: scientist

continued from page 7

not observed among people working in non-sedentary occupations.

Researchers are still working to understand the physiological reasons for this physical activity paradox, Biswas noted.

"Don't think of physically demanding work as being the same as exercise. The physically demanding work that we're seeing associated with heart disease is more like snow shovelling, where you're doing a lot of arm work that increases blood pressure drastically, while your legs don't move much, raising your blood pressure even more," said Biswas.

"If you're in poor physical shape or if your blood vessels have blockages, your heart might struggle to pump blood around your body and not get enough oxygen. That's where we see the risk of heart attack."

Even as more evidence is being gathered, workplaces should not wait to adopt practices to protect workers who may be most at risk in their physically demanding jobs, said Biswas.

"These practices include allowing and encouraging workers to do warm-ups before starting a physically strenuous job task and to take frequent breaks to give their bodies time to recover," he said. ■