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at work

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

This Issue

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INSTITUTE FOR WORK & HEALTH
INSTITUT DE RECHERCHE SUR LE TRAVAIL ET LA SANTÉ

Research Excellence Advancing Employee Health

Study shows many factors important in reducing RSIs

The management of a workplace is as important as workstation set-up when it comes to repetitive strain injuries (RSIs)–at least in an office setting–says IWH Senior Scientist Dr. Donald Cole.

He and his colleagues have just completed a major, six-year collaborative workplace study looking at the burden of these injuries and the impact of an ergonomic policy on more than 1,000 office workers at a Toronto daily newspaper.

Initial results showed that both physical factors–for example, keyboard set-up and mouse position–and workplace organizational factors–such as social support at work–were important if workplace parties wanted to reduce the burden associated with RSIs (see definition on page 5).

The Intervention

The intervention involved a series of initiatives and measures aimed at reducing RSIs. An RSI committee was formed at the newspaper comprising representatives from both labour and management, and with researchers participating during the study. The committee, which is still operating today, designed and implemented an RSI Program that formed the basis of the intervention. Here are some of the initiatives:

• More than 1,000 ergonomic workstation assessments were completed by over 40 trained assessors, proactively reaching 881 employees.

• Mandatory RSI-awareness training sessions were held in all departments. New employees received the training as part of their orientation.

• Four employee surveys were conducted to determine the extent of, and changes in, RSI.

• A new Ergonomic Policy was developed and introduced as part of the newspaper's collective bargaining agreement with the union.

• Guidelines affecting the purchase of new computer equipment were also developed.

One change that was implemented during the study introduced on-site physiotherapy to counsel and treat workers with repetitive strain symptoms. Even though the study is now over, the newspaper has continued to offer this treatment on-site.

The Results

Cole and his team evaluated the intervention and documented a number

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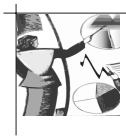


Classifying MSK disorders could help communication among researchers

Many workers are affected by disorders in their shoulders, elbows, wrists and hands. But are these disorders consistently classified and defined in the same way?

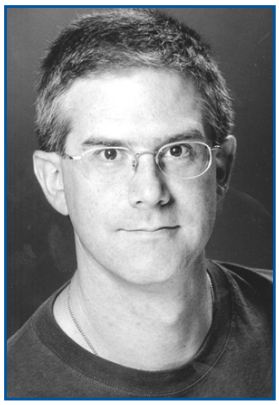
This is a serious question for workplace health researchers like IWH Research Associate Dwayne Van Eerd. "To obtain useful information about upper-limb musculoskeletal (MSK) disorders in workers, we must pay attention to definitions and to how these disorders are classified," he explains. "If everyone is working from different definitions, how can we generate reliable, useful information to help people avoid or manage these problems?"

Van Eerd and colleagues have reviewed the scientific literature on how MSK disorders of the upper limb are classified in workers. In this case, IWH researchers define a "classification system" as a description of the disorders and a list of the criteria required to define each disorder.

"We searched through more than 1,600 titles and articles that potentially addressed how upper-limb disorders in workers are classified and found 27 different classification systems," he says. "The systems did not describe the same sets of disorders, nor did they use a consistent set of labels–or names–for the disorders. When the systems did describe the same disorders, they often used different criteria to define the disorder."

While these different classification systems may not seem like a huge problem to those affected by upper-limb pain, they point to an underlying problem.

"For example, if a researcher would like to determine the number of rotator cuff syndrome cases prevalent in workers, he or she might start by reviewing the literature on that disorder," explains



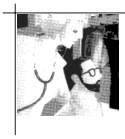
Dwayne Van Eerd

Van Eerd, a kinesiologist, who recently completed a Master's degree in health research methodology at McMaster University. "But if the definition of rotator cuff injury is not consistent in the literature, the results could lead to different estimates of the number of rotator cuff injury cases in workers."

Would it be possible to develop some kind of universal classification system for these disorders? "The desire for a more consistent classification system does exist in the research community," Van Eerd says. "There's a sense that if we could tidy up the definitions and criteria across the board, we could be much more productive in terms of developing prevention and treatment options for many kinds of musculoskeletal disorders."

But developing a new, improved classification system that would be widely adopted by the research community is no easy task, he adds. "To do this, decisions about which disorders to include and which criteria that could best define these disorders would best be made with consensus methods using an evidence-based approach."

The results of this review were published in the "Variance and Dissent" section of the October, 2003 edition of the Journal of Clinical Epidemiology.



Clinicians

Finding better ways to measure recovery from injury

When someone is ill or injured, there's a natural desire to measure recovery. This often begins with a simple question like: "How are you now?"

"Clinicians usually ask such questions to learn if treatment has been effective," explains Dr. Dorcas Beaton, an IWH Scientist specializing in health measurement.

But there's evidence that some patients who should be better–based on X-rays and other tests–don't always feel better. One 1999 study found that while 44 per cent of patients with ankle fractures had been rated by their doctors as "having an excellent clinical outcome," the patients did not feel they had recovered.

"We really don't have a good model of how people recover from traumatic injuries," says Beaton, who is also Director of the Mobility Program Clinical Research Unit at St. Michael's Hospital in Toronto.

To capture a better definition of recovery, at least from the patient's point of view, she and her colleagues have been collecting data from more than 250 people who had surgery to repair a fractured arm or leg within the past 18 months.

To develop their "model of recovery," the researchers are combining a range of patient-based measures like perceived health status, quality of life, work status and sense of recovery. They are also looking at the clinical findings, X-ray evidence and how clinicians view each patient's outcome.

"We chose to look at recovery from fractures because these are common injuries and the costs of delayed or failed recovery is high for everyone involved," Beaton explains.

Workplace Safety & Insurance Board (WSIB) data show that in 1999, nearly half a million work days were lost in Ontario due to arm and leg fractures, at a cost of $30.7 million in wage replacement benefits.

"Other studies show that a significant number of fracture patients have not returned to work one year after injury," says Beaton. Among those who do return, many can't function at their pre-injury level.

Preliminary results from Beaton's survey suggest that, before people see themselves as "better," they pass through certain stages. Some enter a "readjustment" phase, when they reorganize life to avoid aggravating the ailment or disability. Others experience a period of "redefinition"–they reconsider what is essential to their quality of life, then focus on those activities.

The final results of Beaton's study will be published later this year.

"We think our model will be useful to those interested in the course, prognosis and treatment effectiveness after traumatic injury," she says. "We also hope to identify factors that maximize patients' perceptions of recovery to see if they might be integrated into health-care programs."

Researcher to examine ways to prevent disability in people with low-back pain and arthritis

After five years away from the Institute for Work & Health, Dr. Jaime Guzman has returned to pursue his research interests in preventing disability in low-back pain and arthritis patients.

Guzman, who is both a physician–with specialties in rehabilitation and rheumatology–and a clinical epidemiologist, says these conditions have similarities and differences, which make them interesting to study at the same time.

"Both low-back pain and arthritis involve chronic pain and physical limitation, but people think about them quite differently," he explains. "For example, back pain is often thought to be an injury that mainly affects working-age males. Arthritis is usually considered a disease of old age."

Dr. Jaime Guzman

Guzman, an IWH Associate Scientist, believes that comparing these conditions will yield important insights into how disability is caused and how it can be prevented. "I think there is a great deal of disability in people with low-back pain and arthritis that shouldn't be there," he says.

He hopes to determine what key factors (for example, flexible and accommodating work, personal sense of self-efficacy) prevent participation restrictions–a more precise term used by the World Health Organization instead of disability–in people with acute low-back pain and early arthritis. "Any intervention that is able to prevent participation restrictions–even to a minor degree–will have implications for population health and the health of the Canadian economy," he adds.

His next step is to identify key research currently taking place on low-back pain and arthritis. Then, he plans to establish collaborations with other researchers with different professional backgrounds. "A multi-stakeholder team offers a diverse representation of different ideas. A person can have a background in law, anthropology or economics, but the question is, do they bring different insights to the table?"

Continued on page 6

Policy-makers

Leading Canadian research efforts to reduce injury

Injury is a major public health issue in Canada. It is the leading cause of death among Canadians under the age of 44. Among working-age adults, one of every four disabling injuries arises from work.

Health Canada estimates the total economic cost of injuries (including treatment, compensation claims and rehabilitation) in 1998 was $12.7 billion. The estimated cost of unintentional injuries alone–such as slips and falls in the workplace and vehicle crashes–is $8.7 billion annually.

What can be done? "The good news is that most injuries are preventable," says Dr. Cameron Mustard, President of the Institute for Work & Health. "But in order to do a better job of injury prevention, treatment and rehabilitation, we need a more co-ordinated approach. We also need a new investment in injury research so we have better informed prevention efforts."

Mustard says that those working in the injury field have been calling for a national prevention strategy for about a decade. This past fall, he was part of a national consultation process that took important steps towards the development of that strategy.

"*Listening for Direction on Injury* brought together researchers, policy-makers, program planners and caregivers from across Canada at five regional workshops held over a two-month period," says Mustard, who served as Co-chair of the consultation's National Scientific Advisory Committee with Dr. Rob Brison from Queen's University. "During these meetings, we discussed injury research themes and what questions should be a priority, as well as opportunities for cross-collaboration."

The consultation process was funded in part by the Canadian Institutes of Health Research (CIHR). The advisory

group is currently preparing a report for the CIHR which will propose a model and strategic plan to implement the research program ideas formed during the consultation.

The report is expected to be presented to the CIHR in March.

To read more about the consultation, the background papers and summaries of the workshops, visit www.injurypreventionstrategy.ca/research.

Workplaces

Conference emphasizes evaluation in planning and practice

What is evaluation and why should you know about it?

More than 150 people–including health and safety practitioners, policy-makers, clinicians, managers, researchers and program administrators–gathered at a two-day event in Toronto last November for answers to these and other questions.

The goal of the conference, called *Making Evaluations Work for You*, was to introduce people in the health and safety community to the various concepts of evaluation that exist today, said Helle Tosine, Assistant Deputy Minister (Operations) of Labour and chair of the Occupational Health and Safety Council of Ontario (OHSCO). The event was sponsored by the Institute in partnership with OHSCO and the Ontario chapter of the Canadian Evaluation Society (CESO).

Experts define evaluation as "the systematic assessment of the worth or merit of something. Objects of evaluation include institutions, programs, projects, services, personnel, students, materials, and facilities." In practice, this might mean evaluating health and safety interventions, programs, projects and products.

Those who attended the workshop heard a wide-ranging lecture on evaluation by Dr. Michael Quinn Patton, past president of the American Evaluation Association who is recognized as a "guru" by those in the international evaluation community. Participants also took part in workshops designed to demonstrate how evaluation could be used to improve their own projects, interventions and products.

"The workshop was well attended and it sought to address a need identified by the health and safety community," explains Jane Gibson, the Institute's Director of Knowledge Transfer & Exchange (KTE). Managers have become increasingly aware of the link between planning successful programs and building evaluation into the process right from the start, she adds.

To learn more about evaluation and read an interview with keynote speaker Dr. Michael Quinn Patton, see the spring 2004 issue of Infocus.

IWH Board Change

After 10 years of dedicated service, Dr. Lorna Marsden has retired from the Institute for Work & Health's Board of Directors.

Marsden was appointed Vice-Chair in 1998 and was elected Chair the following year. She remained in this capacity until the fall of 2002 and continued to serve as a Director until the winter of 2003. While a board member, Marsden provided valuable guidance and leadership and contributed to many Institute initiatives.

"I truly enjoyed my time with the Institute and appreciate the many friendships that I've formed over the past 10 years with professionals dedicated to improving worker health and safety. I hope to remain a friend of the Institute throughout the next several years," says Marsden.

Marsden is President and Vice Chancellor of York University in Toronto. She was President and Vice Chancellor of Wilfrid Laurier University from 1992 to 1997.

Dr. Graham Lowe to speak at Annual General Meeting

One of Canada's leading work experts is the recipient of this year's Alf Nachemson Lectureship.

Dr. Graham Lowe, President of The Graham Lowe Group Inc. and a professor of sociology at the University of Alberta (on leave), will be the Alf Nachemson lecturer at the Institute's Annual General Meeting on June 21, 2004. The Alf Nachemson Lectureship was established in 2002 to honour Dr. Nachemson's significant contribution to research evidence in clinical decision-making.

Lowe–one of the newest members of the IWH Scientific Advisory Committee–is also an associate editor of *Canadian Public Policy* and a frequent contributor to the trade publication, *Canadian HR Reporter*. He also serves on Statistics Canada's Advisory Committee for the Workplace and Employee Survey and recently wrote a book entitled, *The Quality of Work: A People-Centered Agenda*.

Throughout his career and his association with the Institute for Work & Health, Dr. Alf Nachemson has championed the use of research evidence in clinical decision-making. An advocate of evidence-based practice, he has been a pioneer, outspoken and often controversial, in his views on the role of government, policy-makers and clinicians in contributing to the health of the population.

IWH at annual health and safety conference

Several IWH staff will present their research findings at one of Canada's premier health and safety conferences in April. The Industrial Accident Prevention Association's annual conference–*Knowledge in Motion: Health and Safety 2004 Conference and Trade Show*–takes place from April 26 to 28 at the Metro Toronto Convention Centre.

On Monday April 26, Visiting Scientist Dr. Dov Zohar will present an introductory talk about recent developments in safety climate research. He will also discuss the link between supervision/leadership and organizational climate.

On Tuesday April 27, Knowledge Transfer Associate Dr. Dee Kramer and Adjunct Scientist Dr. Richard Wells will co-facilitate a workshop on how to make ergonomics part of a workplace health and safety plan. Also on Tuesday, Adjunct Scientist Dr. Benjamin Amick III will discuss his research that links a workplace ergonomic intervention to increased productivity.

Visit the IWH booth at the trade show. For more information on the conference, visit the IAPA web site at www.iapa.on.ca.

Study shows many factors important in reducing RSIs–continued from page 1

of changes in the workplace. By analyzing the data collected over the six-year period, they found that:

- Workers increased their knowledge about and awareness of RSIs.
- The proportion of workers suffering from severe or frequent pain decreased.
- With increased awareness, workers experiencing RSI-related pain changed their posture, used both exercise and relaxation techniques and sought advice from a health-care practitioner.

"Although the workplace improved several physical and workplace organizational risk factors, intense competitive pressures brought about aggravation of others," Cole explains. The workplace environment constantly changed, as did the technology. For example, some workers increased their keyboard time and, when a "mousing" environment was introduced, workers found themselves "mousing" for more hours than before. This was detrimental for those who were already experiencing pain and it could have been the cause of some additional workers acquiring RSI.

This collaborative project involved representatives from Toronto Star management, the Southern Ontario Newspaper Guild (SONG), the on-site physiotherapy clinic and scientists and researchers from the Institute for Work & Health, the University of Waterloo and York University in Toronto.

What is RSI?

Repetitive Strain Injury, or RSI, is pain and discomfort in the neck, shoulders, arms and hands (it can also occur in the back). RSI is a term used to describe a number of activity-related soft-tissue injuries that include carpal tunnel syndrome (affecting the wrists and hands), tennis elbow (inflammation of muscles and tissues), tendinitis (inflammation of a tendon), forearm myalgia (muscle pain) and nerve entrapment syndromes (usually affecting the neck and arms).

Some scientists prefer to use the term "work-related musculoskeletal disorders" (WMSD) to describe these ailments, since people can develop symptoms even if their job tasks are not repetitive.

What's new on the web?

What role is the IWH playing in an international task force looking at neck pain and its associated disorders?

What does the Institute's new Chief Scientist Dr. Tony Culyer really think about knowledge transfer and exchange (KTE)? What are some of the barriers to successfully developing and delivering workplace health and safety messages?

To find out more, visit ZOOM, the new feature spot located on the home page of our web site. Every few months, web users will find two new, in-depth stories or interviews–one focusing on our research, the other about KTE.

Chief Scientist Dr. Tony Culyer

To read these two new stories, go to www.iwh.on.ca and click on the ZOOM links under "Web Spotlight."

Paper now available

A new report prepared by Institute staff for the College of Physiotherapists of Ontario (CPO) is also available from the web site. This report– *Practice Review for the Physiotherapy Management of Soft-tissue Disorders of the Shoulder*–describes part of the CPO practice review project that examined physiotherapy practice patterns and client outcomes for patients with soft-tissue injuries of the shoulder.

To download this report, go to www.iwh.on.ca and click on the "Practice review" link located on the home page under "New Reports."

Celebrate Safe Beginnings: NAOSH Week 2004

Each year, health and safety advocates and organizations across North America try to increase awareness of the importance of health and safety during North American Occupational Safety and Health (NAOSH) Week. This year the week runs from May 2 to 8.

The theme for 2004 is *Building a Safe Beginning, Safety and Health: A Foundation for Excellence.* What does this mean? The Ontario NAOSH Network, a group representing many of the province's prevention partners including the Institute for Work & Health, is recommending organizations focus this year on new and young worker health and safety, a major workplace challenge.

The first few weeks on the job can be very exciting for a new employee–young or old. But research has shown that it's also the time most job-related injuries occur. Our research shows that new workers are five to seven times more likely to be hurt during their first month at a new job than workers with more experience. In 2002, more than 14,000 young workers were injured seriously enough to require time off work and 14 young workers lost their lives due to work-related injuries. Since 2000, 40 young people under the age of 24 have lost their lives on the job in Ontario.

A number of events supporting health and safety awareness are scheduled to take place in communities across Ontario during NAOSH week. Visit www.naosh.ca for more information and ideas.

Researcher to examine ways to prevent disability in people with low-back pain and arthritis – continued from page 3

Guzman first joined the IWH shortly after he immigrated to Canada from Mexico in 1995. He spent three years at the IWH as a Research Fellow while studying for his Master's degree in clinical epidemiology at the University of Toronto. In 1999, he joined the University of Manitoba as a research associate. While there, Guzman was part of a study that examined the physicians' role in returning injured workers to work. It was while he was in Manitoba that he developed his research ideas. "When it was time for me to choose a home for my research program, I thought of Toronto. The research environment, especially with its researchers from many disciplines, was a strong magnet drawing me back."

Guzman's recruitment was a joint initiative between the Institute and the Toronto Rehabilitation Institute (TRI), where he is a clinician investigator. At TRI, Guzman treats people with musculoskeletal injuries and arthritis.

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