

Documenting and decoding the dynamics between work and pain

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The participant was subject to pivotal whole body vibration in either seated or standing posture. Credit: Sargent College of Health and Rehabilitation Sciences, Boston University

Workers suffering from chronic pain takes an immense toll on both employees and employers. Whether the pain that individuals experience is physical or psychological, constant or intermittent, or caused by work conditions or brought to the job, its effect on their productivity and wellbeing is a huge problem. Not surprisingly, work and pain are the subjects of a growing body of research, as technological advances transform healthcare at the same time as they created new challenges.

Understanding the interaction between [work](#) and pain is an important

focus of [*WORK: A Journal of Prevention, Assessment & Rehabilitation*](#). WORK's scope covers the entire occupation of work and presents evidence and best practices to help manage illnesses, injuries, and disabilities through interventions, rehabilitation, and treatment. To that end, WORK has published [a special collection](#) of seven new research articles on work and pain. In her editorial introducing this issue, Editor-in-Chief and Founding Editor Karen Jacobs noted that since 2008, WORK has published more than 20,000 [research articles](#) and reviews on the subject, which represents "more pain-related articles than any of the 'recognized' pain journals."

Each of the articles in the special issue looks at the interplay of work, stress, and pain across diverse job roles, industries, and geographic locations including the United States, Scotland, Iran, Thailand, Hong Kong, and Australia. Findings support the following conclusions:

- Higher levels of presenteeism (being present at work in body but not mind) are associated with [lower back pain](#).
- Repetitive work, heavy lifting, and limited rest increase discomfort from common musculoskeletal conditions.
- Workers (especially older individuals) often fail to disclose their chronic knee pain for fear of losing their jobs.
- Job stress is linked to chronic pain, with psychological symptoms intensifying physical ones. Interestingly, that study noted that employees without [chronic pain](#) sometimes begin to think catastrophically about [physical pain](#) as their stress level ramps up. Female allied [health professionals](#) and those with chronic musculoskeletal conditions are more susceptible to depression and anxiety as a result of job stress.

Two of the articles highlight challenges and opportunities that technology brings to the dynamic relationship of work and pain. Using one of today's most essential business tools, a smartphone, puts users'

necks at risk when they make calls or send texts, according to Rose Boucaut, DEd, MPH, at the School of Health Sciences (Physiotherapy) University of South Australia, iCAHE (International Centre for Allied Health Evidence), Adelaide, Australia. "Smartphone users typically bend their neck slightly forward when reading and writing text messages. They also sometimes bend or twist their neck sideways when speaking and put their [upper body](#) and legs in awkward positions. These postures put uneven pressure on the soft tissues around the spine and can lead to persistent discomfort," she explained.

This observation is based on the results of a study on which she collaborated with a team of investigators led by Suwalee Namwongsa, Ph.D., Research Center in Back, Neck, Other Joint Pain, and Human Performance (BNOJPH), and School of Physical Therapy, Faculty of Associated Medical Sciences, Khon Kaen University in Thailand. They conducted a cross-sectional survey study of 779 Thai university students and found that musculoskeletal disorders are more common among the students who used smartphones for five or more hours a day (other significant factors included smoking and an insufficient amount of exercise). Nearly a third of the students reported neck pain, more than a quarter of them reported shoulder pain, and a fifth either upper back pain or wrist/hand pain. Significantly more (71%) of the women in the study group experienced musculoskeletal pain than men (28%).

"It is doubtful whether people experiencing back and neck pain, especially young people, are aware that it could be the result of excessive smartphone use. Health practitioners need to educate their patients about safe postures and curtailing time spent using smartphones to help prevent these issues," said Dr. Namwongsa. She added that many smartphone companies notify customers of the average time they spend daily on their phones, feedback that "may help users connect neck discomfort with smartphone use and encourage them to be mindful of their posture and time on the phone. In addition, healthcare providers can develop

preventive initiatives that discourage flexed necks and other problematic positions (as well as smoking)."

Another featured article in the collection zeroes in on how a technology can be fine-tuned to better manage lower back pain, a chronic condition that causes presenteeism and impedes workplace performance. This study investigated the effects of pivotal whole body vibration on an individual's proprioception (awareness of the body's positions and movements), which has potential application in treating musculoskeletal conditions such as lower back pain.

"Our findings demonstrate that five minutes of pivotal whole body vibration (18Hz, 6mm amplitude) can significantly improve spinal proprioception including body posture, lumbar repositioning ability, maximum reaching distance, and lumbopelvic coordination in healthy individuals," said lead investigator Daniel H.K. Chow, Ph.D., Department of Health & Physical Education, The Education University of Hong Kong, Tai Po, Hong Kong. He explained that "the effects do not differ when the participants are seated or standing. Moreover, the choice of frequency and amplitude of whole body vibration protocol is critical as vibration could produce very different responses, either beneficial or dangerous. This a valuable finding as it could potentially lead to a treatment for lower back [pain](#)."

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