

THE VULNERABLE WORKER by Uyen Vu and Peter Smith

The term “vulnerable workers” is used increasingly in Occupational Health and Safety (OHS) to describe those at greater risk of injury. The term no doubt conjures up a certain image in your mind of who these workers might be.

You might see a home-care worker who’s still relatively new to Canada. Or maybe you see a teenager who works part-time loading heavy boxes from delivery trucks to the stockroom of a retail store, or a manual labourer taking whatever job that comes up through a temporary work agency.

When you think about these workers, do you wonder whether it’s the worker or the work that makes them vulnerable? Do you think similar factors make each of these workers vulnerable, or if the factors contributing to their increased risk of injury differ?

Research at the Institute for Work & Health (IWH) has recently explored these questions. The result is a new 29-item questionnaire that measures the extent to which workers are at increased risk of work-related injury and illness. It conceives vulnerability as a function of four distinct dimensions. These are:

- the presence of work hazards;
- the level of workplace protection against work injury and illness, in the form of OHS policies and procedures;
- the level of worker awareness of OHS rights and responsibilities; and
- the extent to which workers feel empowered to take part in injury and illness prevention efforts.

This measure can potentially be used by employers as a leading indicator of the ways in which their employees might be placed at increased risk of injury, and identify particular things they can do to reduce this

risk. By reporting separate scores on each of the four dimensions, this measure helps identify different strategies for improving health and safety outcomes for different groups of workers. Organizations may find that worker awareness or empowerment scores aren’t as high in some business units as in others. Or workers in some occupation groups report lower scores on the policy and procedure dimensions than others. Knowing these differences can help determine the appropriate primary prevention activities for different circumstances.

Using a multidimensional lens

Studies have indeed shown that certain groups of workers experience higher rates of work injury. These would include workers who are young, who are new to the workplace, who have low levels of education, who work in temporary agencies, or who are new to Canada. But relying on these characteristics to indicate OHS vulnerability can result in the perception that injury risk is inherent to these groups. It also means you can’t measure changes in vulnerability over time. As the workforce ages, for example, does OHS vulnerability automatically decline?

Looking at vulnerability along the four dimensions helps fill out the picture. If certain groups are more susceptible to injury, why is that the case and, more constructively, what preventive measures would be most effective to reduce their risk of injury? Similarly, while there may be risks intrinsic to certain types of work, what measures are taken to mitigate these risks? Even in high-hazard industries, for example, organizations can make a difference on worker safety with robust policies and practices,

increasing their employees’ awareness of their rights and responsibilities, and creating an environment where workers feel empowered to participate in injury prevention.

Developing the measure

This project to develop an OHS vulnerability measure began with a thorough review of the existing literature—including peer-reviewed, non-peer-reviewed and grey literature—to find existing instruments that measure factors within any of the four dimensions. At the same time, the research team conducted a series of focus groups in Ontario and Victoria, Australia to get feedback on the conceptual model of vulnerability. With their input, the team developed an initial list of 97 items, which was further reduced to 64. A pilot test with 328 workers in Ontario and British Columbia helped reduce the number of items to 29. This final 29-item measure was then tested on a larger sample of 1,835 workers in Ontario and British Columbia.

Defining vulnerability

The 29-item questionnaire (shown on page 18) defines OHS vulnerability as arising when a worker reports being exposed to work hazards *plus* deficiencies in one or more of the other three dimensions: that is, the worker indicates he or she is regularly exposed to work hazards, *and* inadequate protection in terms of policies and practices *and/or* low health and safety awareness *and/or* a low sense of empowerment.

Using this questionnaire, a worker is considered to be exposed to hazards if, on a weekly or daily basis, he or she experiences two or more of the nine work conditions covered in the questionnaire—conditions such as excessive noise or

prolonged standing, among others. However, four of the nine hazards are so concerning that a worker who experiences just one of them is considered to be engaged in hazardous work. These include: (1) having to manually lift, carry or push items heavier than 20 kilograms at least 10 times a day; (2) working at a height two metres or more above the floor; (3) working with hazardous substances such as chemicals, flammable liquids and gas; and (4) being bullied or harassed at work. The measure contains seven items on policies and procedures, such as the existence and implementation of safety training, accident investigation and so on. If a worker disagrees or strongly disagrees with one or more of the items in this dimension then he or she is considered to be vulnerable in this area. Likewise, the measure contains six items on workers' knowledge of rights and responsibilities and five items on worker empowerment. If a worker scores one or more items poorly in either of these dimensions, he or she is considered vulnerable in this area.

Finding some patterns

Analysis is underway to examine the correlation between scores on the measure and injury rates, but

employers may want to start using this tool to establish benchmarks across the organization, to measure the impact of a change in policy or practice or to identify areas of weakness within their OHS programs.

The research team is also examining the results from the 1,835 respondents to better understand the broader patterns of vulnerability experienced by different demographics. The analysis shows that, overall, vulnerability was higher among the respondents who were younger, who held temporary contracts, and who worked in smaller workplaces. The young respondents, in particular, scored low across all four dimensions.

Participants working in small businesses were more likely to be exposed to workplace hazards and inadequate workplace policies and procedures. But they were no more likely to be exposed to workplace cultures that discouraged worker participation. However, as the sample was not representative of the labour market, further research is needed before these findings can be extrapolated to the working populace.

There is a growing recognition among organizations that injury rates are poor metrics to use when assessing the level of health and safety protection provided at

the workplace. This measure of 29 items can enable an organization to move beyond injury rates to start to measure and monitor changes in key dimensions which are thought to increase risk of injury, and to help pinpoint pockets of vulnerability throughout an organization. This information can be then used to help identify what the organizations need to do to improve worker health and safety.

The study on the development of the questionnaire is now available as an open access paper, published in the September 2015 edition of the journal *Accident Analysis & Prevention* (Vol. 82, pp. 234-243: doi:10.1016/j.aap.2015.06.004). Look for further research findings based on the use of this measure in an article coming in the fall of 2015 in the *American Journal of Industrial Medicine*.

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OHS VULNERABILITY QUESTIONNAIRE

A new tool developed by researchers at the Institute for Work & Health Scientist is designed to measure workers' vulnerability to occupational health and safety (OHS) risks. It's composed of 29 questions covering the four dimensions: the presence of work hazards; the presence of protective OHS policies and procedures; worker awareness of OHS rights and responsibilities; and worker empowerment.

Workplace hazards

How often do you/are you....

1. Have to manually lift, carry or push items heavier than 20 kg at least 10 times during the day?
2. Have to do repetitive movements with your hands or wrists (packing, sorting, assembling, cleaning, pulling, pushing, typing) for at least three hours during the day?
3. Have to perform work tasks, or use work methods, that you are not familiar with?
4. Interact with hazardous substances such as chemicals, flammable liquids and gases?
5. Have to work in a bent, twisted or awkward work posture?
6. Experience pain or discomfort as a result of your job?
7. Work at a height that is two metres or more above the ground or floor?
8. Work in noise levels that are so high that you have to raise your voice when talking to people less than one metre away?
9. Face being bullied or harassed at work?
10. Have to stand for more than two hours in a row?
11. Come to work feeling fatigued?

Response options: Never, once a year, every six months, every three months, every month, every week, every day, or don't know/not applicable.

Policies and procedures

How strongly do you agree or disagree with the following statements: At my workplace

12. Everyone receives the necessary workplace health and safety training when starting a job, changing jobs or using new techniques.
13. There is regular communication between employees and management about safety issues.
14. Systems are in place to identify, prevent and deal with hazards at work.
15. Workplace health and safety is considered to be at least as important as production and quality.
16. There is an active and effective health and safety committee, and /or worker health and safety rep.
17. Incidents and accidents are investigated quickly in order to improve workplace health and safety.
18. Communication about workplace health and safety procedures is done in a way that I can understand.

Response options: Strongly agree, agree, disagree, strongly disagree, or don't know/not applicable.

Worker awareness

How strongly do you agree or disagree with the following statements: At my workplace

19. I am clear about my rights and responsibilities in relation to workplace health and safety.
20. I am clear about my employer's rights and responsibilities

in relation to workplace health and safety.

21. I know how to perform my job in a safe manner.
22. If I became aware of a health or safety hazard at my workplace, I know who (at my workplace) I would report it to.
23. I have the knowledge to assist in responding to any health and safety concerns.
24. I know what the necessary precautions are that I should take while doing my job.

Response options: Strongly agree, agree, disagree, strongly disagree, or don't know/not applicable.

Empowerment

How strongly do you agree or disagree with the following statements: At my workplace

25. I feel free to voice concerns or make suggestions about workplace health and safety at my job.
26. If I notice a workplace hazard, I would point it out to management.
27. I know that I can stop work if I think something is unsafe and management will not give me a hard time.
28. If my work environment was unsafe, I would not say anything and hope that the situation eventually improves (reverse scored).
29. I have enough time to complete my work tasks safely.


Response options: Strongly agree, agree, disagree, strongly disagree, or don't know/not applicable.

Scoring

Using this questionnaire, a worker is considered to be exposed to hazards if, on a weekly or daily basis, he or she experiences two or more of the nine hazards work conditions covered in the questionnaire—conditions such as excessive noise or prolonged standing, among others. However, four of the nine hazards are so concerning that a worker who

experiences just one of them is considered to be engaged in hazardous work. These include: (1) having to manually lift, carry or push items heavier than 20 kilograms at least 10 times a day; (2) working at a height two metres or more above the floor; (3) working with hazardous substances such as chemicals, flammable liquids and gas; and (4) being bullied or harassed at work.

For each of the other dimensions, if workers disagree or strongly disagree with one or more of the items in the dimension, then the protections for the work in this area are considered to be inadequate. Workers are considered vulnerable overall if they are exposed to hazards and they have inadequate protections on one or more of the three other dimensions.



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