IMPLICATIONS OF AN AGING WORKFORCE FOR WORK INJURY, RECOVERY, RETURNING TO WORK AND REMAINING AT WORK

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The Canadian population is aging, with the proportion of people 65 years of age and over expected to double in the next 25 years, according to Statistics Canada (2010). The Canadian workforce is also aging, with the 45- to 64-year-old age group making up a large proportion of workers (42.4 percent) in 2011 and the average age of labour market participants predicted to continue to rise until 2031 (Martel et al, 2012).

In light of this trend, employers rightly have questions about the implications for work injury, recovery, return to work and remaining at work. Some may expect that risks of injury are higher among older workers, that their injuries are more severe, or that timelines to recover and return to work are longer. However, findings from recent studies, including several conducted at the Institute for Work & Health (IWH), paint a more nuanced picture.

At a glance:

- Older workers are not, on average, at greater risk of work-related injuries than their younger counterparts. However, if they do get hurt on the job, older workers tend, on average, to take longer to return to work.
- These longer post-injury absences are not explained by older workers having more severe injuries or certain types of injuries, or by their working in more physically demanding jobs.
- Longer absences post-injury are explained in part by the greater likelihood of older workers having pre-existing chronic conditions. Yet, even after taking pre-existing conditions into account, about 70 to 80 percent of the effect of age on longer absences remains unexplained.
- Workplace factors may explain the longer absences, including ageism.
- Occupational health nurses dealing with the return to work of older workers are advised to:
  - check their organization's implicit biases about age and aging,
  - consider the individuality of each older worker,
  - implement return-to-work plans that incorporate health care, case coordination and work modification interventions, and
  - implement accommodation policies and programs that are flexible and promote autonomy among all workers.

Older workers and the likelihood of sustaining a work-related injury

Are older workers more likely to be injured on the job than their younger counterparts? And what types of injuries are they more likely to sustain? In general, the research literature to date has shown no evidence that the risk of work-related injuries rises as people grow older (Laflamme & Menckel, 1995). Some studies have raised questions about whether age is associated with a greater risk of certain types of injuries. For example, a literature review conducted by Okunribido, Wynn and Lewis (2011) found a link between aging and risk of musculoskeletal injuries; another literature review (Salminen, 2004) found younger workers faced higher injury risks, but the injuries they experienced were less likely to be fatal than those sustained by older workers.

In a study based on WorkSafeBC claims data over three different periods spanning from 1997 to 2006, researchers at IWH looked at the link between injury risks and age across seven types of injuries (Smith et al, 2013a). The study found no association between older age and the probability of a lost-time claim for musculoskeletal conditions. Rather, older workers faced elevated risks for fractures and dislocations, with women over 55 facing nearly 2.5 times the risk faced by their middle-aged coun-

terparts (35 to 44 years of age). For older men, the risk of this type of injury (categorized as trauma to the bones, nerves and spinal cords in the paper) was 40 percent higher than for the middle-aged men.

However, for MSD-related injuries, which are about eight times more common than fractures and dislocations, risks were highest for workers 35 to 44 years of age, among both men and women. And although the study period spanned nearly a decade, the relative risk of injury across age groups did not change over that time. This suggests that the increased participation of older workers in the labour force over that period had no impact on the relative risk of injury due to age.

Older workers and duration of time off following an injury

Are older workers off work longer than their younger counterparts after a work-related injury and, if so, why? The research has been consistent in showing older workers take longer to come back to work after an injury. Why that might be the case is a rather interesting question. Researchers have proposed some different theories, and we at the Institute have conducted a few studies to examine some of them.

One theory is that, although older workers sustain fewer injuries than younger workers, the injuries they do experience may be more severe, resulting in longer recovery time. To investigate this, an IWH team conducted a study that examined compensation claims from 54,600 injured workers in Victoria, Australia, from 2005 to 2011; our sample consisted of injured workers who were off work and on benefits for more than 10 days (Fan, Black & Smith, 2016). The study examined the severity of the injury (based on incidence of hospitalization and total health

Occupational health and safety initiatives need to monitor workers' weekly and daily workload, duration of shifts and health concerns raised.

care expenditures within 30 days of the injury) and type of injury (for example, head injury, fracture, burn, and so on). As expected, time off work increased with age among both men and women. However, even after accounting for age differences in type and severity of injuries, time off work still increased with age. In other words, the longer absences of older workers were not explained by their having more severe injuries or certain types of injuries. The overall relationship between age and time off work was also similar across different types of injuries and levels of severity.

Another study conducted at IWH also examined whether the physical demands of the job play a role (Smith et al, 2014a). This study was based on the premise that people in physically demanding jobs need to perform at a higher percentage of their full capacity. With the decline in mental and physical function that comes with age, older workers may need more time before they can regain the higher level of functional capacity needed to return to physically demanding work.

Drawing on the B.C. claims data from 1997 to 2006 used in the study mentioned earlier, the research team looked at the link between injury outcomes, age and strength requirements of claimants' occupations. (Information about occupations were contained in claims records. For strength requirements, the team turned to the National Occupational Classification Career Handbook, which described the physical demands of occupational groups.) Although the study found older age and higher physical demands were both linked with poorer injury outcomes (based on health expenditures following injuries, days of wage replacement and injuries classified as long-term disabilities), it didn't see a change in the link between age and injury outcomes when looking at occupational strength requirements. The link between age and injury outcomes varied little whether people worked in occupations with light or heavy physical demands.

Another potential explanation for longer recovery time among older workers could be the higher prevalence of chronic conditions among this population. Pre-existing conditions such as heart disease, diabetes, arthritis and the like may put older workers at already diminished health status prior to an injury so that, once injured, these workers may be slower to recover.

To test this theory, IWH conducted a study using three B.C. population databases: claims records from WorkSafeBC, hospital discharge records, and all records of outpatient medical services provided to B.C. residents (Smith et al, 2014b). The last two datasets allowed the research team to identify workers' compensation claimants who had pre-existing chronic conditions based on their pre-injury health care use. The study examined eight conditions, including diabetes, osteoarthritis, coronary heart dis-

ease, hypertension, hearing loss, depression, thyroid disorder, and rheumatoid arthritis.

The first study looked at the link between older age and number of days workers were off work following an MSD injury. Without taking into account chronic conditions, it found a straightforward link between age and time off for men. The older the male workers, the more days they were off. For women, the number of days peaked among the middle-aged (the 35-to-44 and the 45-to-54 age groups); women over 55 took the same number of days off as women in the 25-to-34 age group.

Once chronic conditions were taken into account, certain conditions had a greater effect than others on recovery time. This held true even after factoring in things like previous injuries, parts of the body injured, physical demands and physical posture at work, and industry. For both men and women, diabetes and depression were linked to more days off. Coronary heart disease was associated with more days off for women but not for men. Osteoarthritis was associated with more days off for men but not women. Despite these increases in days off, however, the statistical analysis showed that chronic conditions did not fully account for longer sickness absences among injured workers. Approximately 70 to 78 percent of the effect of age on the length of such absences remained unexplained after accounting for pre-existing conditions.

Other potential explanations for older workers' longer time off

The studies described above looked at type of injuries, severity of injuries and chronic conditions and found that these factors did not explain—or only partially explained, in the case of chronic conditions—the association between older age and longer work absences following work-related injury. So, what else might account for the longer time it takes older workers to return to work (RTW)? We need to turn now to factors related to the workplace and to the RTW process itself.

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Several studies in the research literature have shown differences in the management of post-injury or sickness absences of older workers. Koehoorn, McLeod and Maas (2017) at the University of British Columbia have found older workers are less likely to receive an offer of modified work. Another recent example is a 2015 study of 8,000 workers' compensation claimants in Alberta; it found older workers past the typical retirement age to be a disadvantaged group from a vocational rehabilitation perspective (Algarni, Gross, Senthiselvan & Battie, 2015). The older workers were less likely to report available options of modified work or be offered rehabilitation, despite having more severe injuries.

Researchers at IWH found similar results in a study of 850 compensation claimants in Victoria, Australia. This study set out to examine differences in RTW across three age groups, via surveys that claimants completed three times over a 12-month period. The surveys covered a range of RTW processes and outcomes, including workplace reaction to injury, workplace contact, recovery expectations, interactions with health care providers, interactions with RTW coordinators, interactions with RTW case managers, fairness of the RTW, and self-efficacy to RTW, among others.

This study, which was shared briefly in a 2015 IWH Speaker Series presentation and will be the subject of an upcoming paper, found older workers more likely than younger workers to say their supervisors and co-workers reacted to their injuries with support, rather than blame and skepticism. Older workers more often reported feeling confident about returning to the same job than did younger workers; fewer older workers reported feeling stressed about interactions with case managers and health care providers. Despite these promising indications, however, older workers were still less likely to get an RTW date or an offer of modified duties.

These findings point to another potential explanation: ageism. Many studies have documented negative attitudes about older workers, such as stereotypes that they are less productive or less trainable (Malinen & Johnston, 2013). Several studies have also found that older workers receive fewer opportunities for job interviews and job training, suggesting discriminatory practices towards older workers. If these findings indicate a discrepancy between older workers' positive experiences of key RTW interactions and the less-than-positive RTW outcomes, the explanation may lie somewhere in workplace parties' expectations of older workers'

How occupational health nurses can help

In light of the research outlined above, how can occupational health nurses help older workers return to work? First, they might check if their organizational policies include implicit biases about age and aging. Remember that chronological age is only a number. Aging refers to biological, physiological, and social changes that occur over time—changes that can occur at different rates among individuals. Two people can be the same chronological age but need very different resources in the workplace.

Consider, as well, the heterogeneity of worker characteristics in this age group. In a cross-section of people between the ages of 55 to 64, for example, we will find people along a broad spectrum when it comes to their physical fitness, mental acuity, lifestyle, family responsibilities, and health conditions. From the health perspective, this group will include all individuals from those who have had no health issues, to those who've managed a chronic illness all their lives, to those trying to adapt to the new realities of a recent diagnosis. It will include people recovering from a first injury and those who've faced recurrent bouts of cancer. From the work angle, a cross-section of older workers will include individuals with a vast array of skills, habits and experiences—from those who've developed an expertise after 30 years in the same job and at the same company, to those who've moved through multiple career changes, whether by choice or circumstances. And, finally, consider the diversity of attitudes and perspectives in this population group—toward their health or illness, their aging process, and their needs and desires related to work and retirement. Little wonder that some, such as Bal and Jansen (2015), have even suggested that older workers are more heterogeneous than other age groups.

Occupational health nurses might also want to consider programs and policies that are flexible in providing accommodation as needed and that support autonomy among workers, allowing workers to choose the way they complete work tasks or the order in which they do them. Work autonomy approaches also include hazard prevention strategies that involve older workers in finding solutions. Studies have shown that work autonomy increases productivity, job efficacy, and work performance; studies have also shown that older workers with more job control stay at work longer, and that higher work engagement among older workers is linked to better health

outcomes (Van Eerd, Steenstra, Cullen & Irvin, 2016).

Some may wonder about introducing disease state management programs or wellness programs to improve RTW outcomes for older workers. For advice on these two approaches, we look to a paper by Pransky (2016) summarizing the state of the evidence on employer practices for managing the rising prevalence of chronic health conditions. According to this paper, diagnosis-based medical case management focuses primarily on improving clinical care and compliance, without substantial integration of workplace issues. This approach "fails to take into account the wide variation in work ability within a single diagnosis" (p. 468). It's therefore generally not effective in preventing work disability or improving RTW. As for wellness and fitness programs, they generally have limited impact on work disability rates. These programs "usually fail to engage those who could most benefit, and few have documented long-term sustained health benefits in large numbers of enrollees" (p. 467).

Occupational health nurses might want to package together programs and policies that, in sum, address different dimensions of the RTW process, including health care, case coordination, and work modifications. In a systematic review published in 2017, an IWH team found that multi-component interventions, especially those involving a health care provider on the intervention team, were effective in helping older workers who faced a risk of job loss to return to work (Steenstra et al, 2017). The systematic review, which set out to synthesize studies on return to work or stay at work interventions aimed at workers 50 or older (or 45 or older if in physically demanding jobs), found 14 studies of medium or high quality. Of these, five studies described multi-component interventions, which consisted of programs such as job-focused vocational rehabilitation, worker education or training, an RTW plan, case management and communication between the workplace and health care provider. All five interventions involved work modifications, such as modified hours, workstation design or job duties.

This message regarding the effectiveness of multi-component interventions is not a new one. It dovetails with the Seven Principles for Successful Return to Work (2007) developed by IWH based on the outcomes of a systematic review on effective workplace-based RTW interventions (Franche et al, 2005). For example, the Seven Principles

suggest that employers make offers of modified work (also known as work accommodation) to injured/ill workers so they can return early and safely to work activities suitable to their abilities, and that employers and health care providers communicate with each other about the workplace demands as needed (and with the worker's consent). In a recent update of the review, the effectiveness of multi-component interventions was strongly supported (Cullen et al, 2017).

Finally, occupational health nurses might want to encourage their organizations to continue to offer the many workplace supports that are generally available in many Canadian workplaces. An IWH study of older workers with two common chronic conditions, arthritis and diabetes found that these workers need a range of workplace supports (Gignac, 2018). Some of the more needed supports include flexible hours, special equipment/adaptations (e.g. built-up keyboards), modified job duties, altered work schedules, compressed work weeks, more breaks and rest periods, work-at-home arrangements, extended health benefit plans, short-term leave and wellness programs. Most study participants used two or three of these supports, as needs arose; no single support was dispensable, and none was a must-have for everyone. Supports and accommodation programs should be in place for all workers, not just older workers. When offered proactively and widely across the organization, these supports can improve productivity outcomes. They are used by people with health conditions at similar levels as their healthy peers, who may need them for other reasons such as childcare or eldercare.

Further research needed

The research literature consistently shows a link between age and longer duration of time off following an injury. However, the reasons why older workers are off work longer following injuries are unclear—which points to the need for further research, particularly on recovery and fatigue in this population. Additional research to better help workplaces to develop policies and practices suited to older workers and their work participation is still necessary.

That said, the current research literature does point to several practical workplace strategies and approaches that occupational health nurses can implement to help older workers return to work. They can encourage employers to package multiple programs that address different aspects of the RTW process, including health care, modified work, and case coordination. They can reinforce the value of responding to individual needs with tailored measures that enhance worker autonomy. They can help ensure common workplace supports such as flexible scheduling, job modifications, and work-from-home options continue to be offered proactively and widely—not just for older workers or for workers with chronic conditions.

This last message is one that we need to underline. The findings we've seen in the research literature suggest that the policies and practices that improve RTW among older workers are generally the same practices and policies that improve RTW among all workers. While it's true that older workers may experience physiological or mental decline, these changes may be offset by their greater experience and by the adaptations they make to compensate for their new challenges—for example, by taking additional precautions or switching out of demanding jobs. That older workers are not more likely to be injured seems to bear this out. The fact that they take longer to return to work may suggest that something in the way older workers are perceived or treated may be the difference.

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