

IWH Research Alert
September 14, 2018

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***Chen C, Smith PM, and Mustard C. Gender differences in injuries attributed to workplace violence in Ontario 2002-2015. *Occupational and Environmental Medicine*. 2018; [Epub ahead of print].**

<http://dx.doi.org/10.1136/oemed-2018-105152> [open access]

Abstract: OBJECTIVES: The aim of the study is to compare trends in the incidence of injury resulting from workplace violence for men and women at the population level over the period 2002-2015 among working-age adults in Ontario, Canada. METHODS: Administrative records of injury resulting from workplace violence were obtained from two population-based data sources in Ontario: 21 228 lost-time workers' compensation claims (2002-2015) and 13 245 records of non-scheduled emergency department visits (2004-2014), where the main problem was attributed to a workplace violence event. Denominator counts were estimated from labour force surveys conducted by Statistics Canada, stratified by age and sex. Age-standardised rates were calculated using the direct method. RESULTS: Over the observation period, workplace violence incidence rates were in the range of 0.2-0.5 per 1000 full-time equivalent workers. Incidence rates of injury due to workplace violence among women increased over the observation period, with an average annual per cent change (APC) of 2.8% (95% CI 1.7% to 3.9%) in compensation claims and 2.7% (95% CI 1.0% to 4.4%) in emergency department visits. In contrast, there was no change in workplace violence injury rates among men in compensation claims (APC: -0.2% (95% CI -1.2% to 0.9%)) or in emergency department visits (APC: -0.5% (95% CI -1.6% to 0.6%)). A pronounced increase in workplace violence injury rates was observed in the education sector with an APC=7.0% (95% CI 5.6% to 8.5%) for women and an APC=4.1% (95% CI 0.9% to 7.4%) for men. CONCLUSIONS: Differences in the

risk of injury resulting from workplace violence for women relative to men in Ontario between 2002 and 2015 were verified by two data sources. The relative risk of violence for men and women also differed across industries

***Davis AM, Ibrahim S, Hogg-Johnson S, Beaton DE, Chesworth BM, Gandhi R, Mahomed NN, Perruccio AV, Rajgopal V, Wong R, and Waddell JP. Presurgery osteoarthritis severity over 10 years in 2 Ontario prospective total knee replacement cohorts: a cohort study. CMAJ Open. 2018; 6(3):E269-E275.**

<http://dx.doi.org/10.9778/cmajo.20170164> [open access]

Abstract: BACKGROUND: It has been suggested that total knee replacement is being performed in people with less-severe osteoarthritis. We aimed to determine whether there were differences in the presurgery profile, symptoms and disability of 2 cohorts who underwent total knee replacement over a 10-year period.

METHODS: Patients aged 18-85 years undergoing primary total knee replacement for osteoarthritis at 1 of 4 sites in Toronto and Strathroy, Ontario, were recruited in a cohort study during 2006-2008 (cohort 1) and 2012-2015 (cohort 2). Patients undergoing unicompartmental or revision arthroplasty were excluded. Demographic and health (body mass index [BMI], comorbidity) variables and osteoarthritis severity, as assessed with the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) and the disability component of the Late-Life Function and Disability Instrument (LLFDI-D), were collected before surgery. We calculated proportions, means and standard deviations with 95% confidence intervals (CIs) for all data. We constructed density plots by tertile score for the WOMAC pain and physical function subscales and the LLFDI-D limitation scale. RESULTS: There were 494 patients in cohort 1 and 251 patients in cohort 2. There were no differences in age, sex, education, living status, BMI, comorbidity, pain severity or disability between the cohorts based on overlapping 95% CIs and the density plots. More patients in cohort 1 than in cohort 2 were single (176 [35.6%], 95% CI 32.5%-41.1% v. 63 [25.1%], 95% CI 20.3%-31.0%). Patients in cohort 2 reported less limitation in higher-demand activities than did those in cohort 1 (mean score on LLFDI-D 62.3 [95% CI 60.7-63.9] v. 59.2 [95% CI 58.2-60.2]). INTERPRETATION: The patient profile and reported osteoarthritis severity were similar in 2 cohorts that had total knee replacement over a 10-year period. This suggests that increasing total knee replacement volumes over this period likely were not driven by these factors

***Yanar B, Kosny A, and Smith P. Occupational health and safety vulnerability of recent immigrants and refugees. International Journal of Environmental Research and Public Health. 2018; 15(9):2004.**

<http://dx.doi.org/10.3390/ijerph15092004> [open access]

Abstract: Recent immigrants and refugees have higher rates of work-related injuries and illnesses compared to Canadian-born workers. As a result, they are often labelled as vulnerable workers. This study explored the factors that contribute to occupational health and safety (OHS) vulnerability of recent

immigrants and refugees with a focus on modifiable factors such as exposure to hazards and access to workplace protections, awareness of OHS and worker rights, and empowerment to act on those rights. Eighteen focus groups were conducted with 110 recent immigrants and refugees about their experiences looking for work and in their first jobs in Canada. A thematic content analysis was used to organize the data and to identify and report themes. The jobs described by participants typically involved poor working conditions and exposure to hazards without adequate workplace protections. Most participants had limited knowledge of OHS and employment rights and tended to not voice safety concerns to employers. Understanding OHS vulnerability from the lens of workplace context can help identify modifiable conditions that affect the risk of injury and illness among recent immigrants and refugees. Safe work integration depends on providing these workers with information about their rights, adequate job training, and opportunities for participating in injury prevention

Alberdi A, Aztiria A, Basarab A, and Cook DJ. Using smart offices to predict occupational stress. *International Journal of Industrial Ergonomics*. 2018; 67:13-26.

<http://dx.doi.org/10.1016/j.ergon.2018.04.005>

Altassan KA, Sakr CJ, Galusha D, Slade MD, Tessier-Sherman B, and Cantley LF. Risk of injury by unionization: survival analysis of a large industrial cohort. *Journal of Occupational and Environmental Medicine*. 2018; 60(9):827-831.

<http://dx.doi.org/10.1097/JOM.0000000000001347>

Abstract: OBJECTIVE: To investigate the effect of union status on injury risk among a large industrial cohort. METHODS: The cohort included hourly employees at 19 US plants between 2000 and 2007. Plants were classified by union status, and injuries were classified by severity. Cox-proportional hazard shared frailty model was used to determine time to first reportable injury. RESULTS: A total of 26,462 workers were included: 18,955 (72%) unionized and 7507 (28%) non-unionized. Union workers incurred 3194 injuries (16.9%) compared with 618 injuries for non-union workers (8.2%). After adjusting for multiple covariates, union workers had a 51% higher risk of reportable injury. CONCLUSIONS: Our results provide evidence for higher risk of reportable injuries in union workers; explanations for this increased risk remain unclear

Arranz J, Garca-Serrano C, and Hernanz V. Short-time work and employment stability: evidence from a policy change. *British Journal of Industrial Relations*. 2018; 56(1):189-222.

<http://dx.doi.org/10.1111/bjir.12250> [open access]

Boll C and Bublitz E. A cross-country comparison of gender differences in job-related training: the role of working hours and the household context. *British Journal of Industrial Relations*. 2018; 56(3):503-555.

<http://dx.doi.org/10.1111/bjir.12299> [open access]

Cochrane A, Higgins NM, Rothwell C, Ashton J, Breen R, Corcoran O, FitzGerald O, Gallagher P, and Desmond D. Work outcomes in patients who stay at work despite musculoskeletal pain. *Journal of Occupational Rehabilitation*. 2018; 28(3):559-567.

<http://dx.doi.org/10.1007/s10926-017-9748-4>

Abstract: Purpose To assess self-reported work impacts and associations between psychosocial risk factors and work impairment amongst workers seeking care for musculoskeletal pain while continuing to work. Methods Patients were recruited from Musculoskeletal Assessment Clinics at 5 hospitals across Ireland. Participants completed questionnaires including assessments of work impairment (Work Productivity and Activity Impairment Questionnaire), work ability (single item from the Work Ability Index) and work performance (Work Role Functioning Questionnaire; WRFQ). Logistic and hierarchical regressions were conducted to analyse the relation between psychosocial variables and work outcomes. Results 155 participants (53.5% female; mean age = 46.50 years) who were working at the time of assessment completed the questionnaires. Absenteeism was low, yet 62.6% were classified as functioning poorly according to the WRFQ; 52.3% reported having poor work ability. Logistic regression analyses indicated that higher work role functioning was associated with higher pain self-efficacy (OR 1.51); better work ability was associated with older age (OR 1.063) and lower functional restriction (OR 0.93); greater absenteeism was associated with lower pain self-efficacy (OR 0.65) and poorer work expectancy (OR 1.18). Multiple regression analysis indicated that greater presenteeism was associated with higher pain intensity (beta = 0.259) and lower pain self-efficacy (beta = - 0.385). Conclusions While individuals continue to work with musculoskeletal pain, their work performance can be adversely affected. Interventions that target mutable factors, such as pain self-efficacy, may help reduce the likelihood of work impairment

Dean EE, Shogren KA, Hagiwara M, and Wehmeyer ML. How does employment influence health outcomes? A systematic review of the intellectual disability literature. *Journal of Vocational Rehabilitation*. 2018; 49(1):1-13.

<http://dx.doi.org/10.3233/JVR-180950>

Fleuren BP, van Amelsvoort LG, de Grip A, Zijlstra FR, and Kant I. Time takes us all? A two-wave observational study of age and time effects on sustainable employability. *Scandinavian Journal of Work, Environment & Health*. 2018; 44(5):475-484.

<http://dx.doi.org/10.5271/sjweh.3741>

Abstract: Objectives Various cognitive and physical abilities decline with age. Consequently, sustainable employability research has focused on the labor market participation of older employees. However, it remains unclear whether age actually affects employees' work and labor-market functioning. A major complicating factor is that age effects can be distorted by time effects. That is,

changes over time may not be due to aging but to some structural difference between the times of measurement. The present article aims to provide clarity by estimating age effects on sustainable employability while controlling for potential time effects. Methods Based on two-wave survey data from a sample of 2672 employees (ages 35-65 years) multilevel regressions are estimated to analyze the effects of age and time on sustainable employability. Here, sustainable employability is operationalized as a formative construct consisting of nine dimensions, each capturing a different facet of an individual's ability to function at work and in the labor market. Results The analyses reveal that age has small effects on only two dimensions (employability and perceived health) while time affects three dimensions (fatigue, job performance, and skill gap) of sustainable employability. Moreover, for all dimensions of sustainable employability most variance exists between (61.43-84.96%) rather than within (15.04-38.57%) subjects. Conclusions These findings suggest that the process of aging has a limited effect on working individuals' capacities to function in their job and the labor market. Consequently, the focus on age in the context of sustainable employability policies and research may require reconsideration

Hankivsky O, Springer KW, and Hunting G. Beyond sex and gender difference in funding and reporting of health research. *Research Integrity and Peer Review*. 2018; 3:6.

<http://dx.doi.org/10.1186/s41073-018-0050-6> [open access]

Abstract: Background: Understanding sex and gender in health research can improve the quality of scholarship and enhance health outcomes. Funding agencies and academic journals are two key gatekeepers of knowledge production and dissemination, including whether and how sex/gender is incorporated into health research. Though attention has been paid to key issues and practices in accounting for sex/gender in health funding agencies and academic journals, to date, there has been no systematic analysis documenting whether and how agencies and journals require attention to sex/gender, what conceptual explanations and practical guidance are given for such inclusion, and whether existing practices reflect the reality that sex/gender cannot be separated from other axes of inequality. Methods: Our research systematically examines official statements about sex/gender inclusion from 45 national-level funding agencies that fund health research across 36 countries (covering the regions of the EU and associated countries, North America, and Australia) and from ten top-ranking general health (the top five in "science" and the top five in "social science") and ten sex- and/or gender-related health journals. We explore the extent to which agencies and journals require inclusion of sex/gender considerations and to what extent existing strategies reflect state of the art understandings of sex/gender, including intersectional perspectives. Results: The research highlights the following: (a) there is no consistency in whether sex/gender are mentioned in funding and publishing guidelines; (b) there is wide variation in how sex/gender are conceptualized and how researchers are asked to address the inclusion/exclusion of sex/gender in research; (c) funding

agencies tend to prioritize male/female equality in research teams and funding outcomes over considerations of sex/gender in research content and knowledge production; and (d) with very few exceptions, agency and journal criteria fail to recognize the complexity of sex/gender, including the intersection of sex/gender with other key factors that shape health. Conclusions: The conceptualization and integration of sex/gender needs to better capture the interacting and complex factors that shape health-an imperative that can be informed by an intersectional approach. This can strengthen current efforts to advance scientific excellence in the production and reporting of research. We provide recommendations and supporting questions to strengthen consideration of sex/gender in policies and practices of health journals and funding agencies

Lima TM and Coelho DA. Ergonomic and psychosocial factors and musculoskeletal complaints in public sector administration: a joint monitoring approach with analysis of association. *International Journal of Industrial Ergonomics*. 2018; 66:85-94.

<http://dx.doi.org/10.1016/j.ergon.2018.02.006>

Nexo MA, Kristensen JV, Gronvad MT, Kristiansen J, and Poulsen OM. Content and quality of workplace guidelines developed to prevent mental health problems: results from a systematic review. *Scandinavian Journal of Work, Environment & Health*. 2018; 44(5):443-457.

<http://dx.doi.org/10.5271/sjweh.3731>

Abstract: Objectives A wide range of guidelines have been developed to prevent work-related mental health problems (MHP), but little is known about the quality of such guidelines. We systematically reviewed the content and quality of workplace guidelines aiming to prevent, detect, and/or manage work-related MHP. Methods We conducted systematic online and database searches (MEDLINE; Web of Science; PsychNET; occupational safety and health databases) to identify guidelines. Eligibility criteria included guidelines recommending primary, secondary, or tertiary preventive interventions to be implemented at the workplace by employers, employees or organizational staff. A minimum of minimum three independent reviewers assessed the quality of guidelines using the Guidelines for Research and Evaluation (AGREE II). Guidelines rated $\geq 65\%$ with regards to domain I, II, and III were considered to be of good developmental quality. Results Seventeen guidelines were quality assessed. Guidelines mainly targeted employers: eight guidelines recommended primary preventive interventions (eg, reduction of psychosocial hazards by risk management procedures), three recommended tertiary (eg, stay at work or return to work procedures for management), and six recommended a combination of primary, secondary and tertiary interventions (eg, facilitate return to work by increasing mental health literacy of all staff and coordination of sick-listed employees). Four guidelines had developed recommendations of good quality, but the evidence of two guidelines was outdated and studies documenting the effect of implementation were not yet available. Conclusions Few guidelines have

been developed with sufficient rigor to help employers prevent or manage work-related MHP and evidence of their effectiveness remains scarce

Roelofs C. Without warning: worker deaths from heat 2014-2016. *New Solutions*. 2018; 28(2):344-357.

<http://dx.doi.org/10.1177/1048291118777874>

Abstract: Worker deaths from heat exposure are unlike heat deaths in the general population; workers tend to be outside in variable temperatures and younger than sixty-five years. Climate change will increase the frequency, duration, and variability of hot temperatures. Public health warning systems, such as the Heat Index of the National Weather Service, do not generally account for workers' greater likelihood of exposure to direct sunlight or exertion. Only 28% of the 79 worker heat-related fatalities during 2014-2016 occurred on days when the National Weather Service warning would have included the possibility of fatal heat stroke. Common heat illness prevention advice ignores workers' lack of control over their ability to rest and seek cooler temperatures. Additionally, acclimatization, or phased-in work in the heat, may be less useful given temperature variability under climate change. Workers' vulnerability and context of heat exposure should inform public health surveillance and response to prevent heat illness and death

Stiehl E and Forst L. Safety climate among nontraditional workers in construction: arguing for a focus on construed external safety image. *New Solutions*. 2018; 28(1):33-54.

<http://dx.doi.org/10.1177/1048291117752461>

Abstract: Safety climate, employees' perceptions of work-related safety, (1) has been promoted as a leading indicator of workplace safety in construction. (2, 3) While research has primarily examined internal organizational sources (e.g., manager attitudes, formal organizational policies) on these perceptions, external sources of information might be more relevant to construction workers in nontraditional jobs who work for a limited time and/or have limited interaction with other employees. This paper argues for the future development of a construed external safety image scale to measure employees' perceptions about how external groups view their organization's safety. (4) The construed external safety image would capture the external sources that nontraditional workers use to assess safety climate and will allow public health researchers to identify and change dangerous workplaces while more effectively communicating information about safe workplaces to workers. The public health relevance of safety climate and construed external safety image for monitoring and communicating safety to nontraditional workers require examination

Telle-Lamberton M, Faye S, Pontin F, Bensefa-Colas L, de Claviere C, Le Barbier M, and Lasfargues G. Trends in work-related mental disorders by sector in France. *Occupational Medicine*. 2018; 68(7):431-437.

<http://dx.doi.org/10.1093/occmed/kqy090>

Abstract: Background: Notifications of work-related mental disorders (WRMDs)

are increasing while little data are available on trends by industrial sector. Aims: To assess WRMD notifications and trends from 2001 to 2011 by industrial sector using data collected by the French National Network for Occupational Disease Vigilance and Prevention (RNV3P) network. Methods: We calculated standardized notification ratios (SNRs) per sector. To analyse trends over time, we used odds ratios, analysed by logistic regression, including time as a discrete variable or as a continuous variable. Results: We found higher than expected WRMD notifications in manufacturing; paper and book (SNR = 2.16; 95% CI [1.88-2.48]), chemical and pharmaceutical (SNR = 1.79; 95% CI [1.58-2.03]), textile and clothing (SNR = 1.27; 95% CI [1.04-1.54]). In the trade sectors, retail (SNR = 1.60; 95% CI [1.52-1.68]), motor vehicle and cycle trade and repair (SNR = 1.19; 95% CI [1.05-1.34]). In the services sector personal (SNR = 2.09; 95% CI [1.83-2.38]), information technology (SNR = 1.54; 95% CI [1.36-1.74]), financial and insurance (SNR = 1.42; 95% CI [1.31-1.53]), post and telecommunication (SNR = 1.44; 95% CI [1.30-1.60]), human health and social work (SNR = 1.29; 95% CI [1.24-1.34]). We found an increase in notifications in agriculture, post-telecommunication services and the human health/social work sectors and a decrease in chemical/pharmaceutical, metal, and paper and book manufacturing sectors ($P < 0.05$). Conclusions: These results reveal trends in notifications for WRMDs by industrial sector. This highlights the importance of monitoring trends in WRMDs in specific worker subsets, using specialized networks such as the RNV3P

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