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June 12, 2020

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***Sale JEM, Frankel L, Bogoch E, Gignac M, Hawker G, Elliot-Gibson V, et al. Few fragility fracture patients perceive that their bone health is affected by their comorbidities and medications. *Osteoporosis International*. 2020; [epub ahead of print].**

<https://doi.org/10.1007/s00198-020-05409-w> [open access]

Abstract: We examined fragility fracture patients' perceptions of associations between bone health and other chronic conditions and medications. Awareness of the associations between bone health and these conditions and medications was low. Providers should increase patients' awareness of these associations in order to minimize the risk of future fracture. **Introduction:** Among patients with a fragility fracture presenting with at least one other chronic health condition, we examined (1) perceptions of the association between bone health and their other health conditions, and (2) perceptions of the association between bone health and prescribed medications taken for other health conditions. **Methods:** We identified fragility fracture patients presenting to a Canadian urban fracture clinic with at least one self-reported chronic health condition (in addition to bone fragility). In-depth interviews, 60-90 min in duration, were conducted. Our qualitative methodology was informed by saliency analysis.

Results: We interviewed 26 patients (21 females, 5 males) aged 45 to 84 years old. Participants were taking 1-13 medications each and presented with a variety of comorbidities (range 1-7). All participants described at least one condition or medication they were currently taking for which there existed evidence of a negative effect on bone health (increased risk of fracture, bone loss, falling). Two participants perceived a correct association between their other health conditions and compromised bone health, and four participants perceived a correct association between their medications and compromised bone health. Conclusion: All patients reported a chronic health condition and/or were taking at least one medication that potentially compromised their bone health. Patient awareness of the association between bone health and other health conditions and prescribed medications was low. Health care providers should increase patients' awareness of the bone health significance of their chronic conditions and medications in order to minimize the risk of future fracture.

Alessa FM, Nimbarte AD, and Sosa EM. Incidences and severity of wrist, hand, and finger injuries in the U.S. mining industry. Safety Science. 2020; 129:104792.

<https://doi.org/10.1016/j.ssci.2020.104792>

Andersen LL, Villadsen E, and Clausen T. Influence of physical and psychosocial working conditions for the risk of disability pension among healthy female eldercare workers: prospective cohort. Scandinavian Journal of Public Health. 2020; 48(4):460-467.

<https://doi.org/10.1177/1403494819831821> [open access]

Abstract: Aim: To investigate the influence of physical and psychosocial working conditions on the risk of disability pension among eldercare workers. Methods: After responding to a questionnaire in 2005, 4699 healthy female eldercare workers - free from chronic musculoskeletal pain, depressive symptoms and long-term sickness absence - were followed for 11 years in the Danish Register for Evaluation of Marginalization. Time-to-event analyses estimated the hazard ratio (HR) for disability pension from physical exertion during work, emotional demands, influence at work, role conflicts, and quality of leadership. Analyses were mutually adjusted for these work environmental factors as well as for age, education,

smoking, leisure physical activity and body mass index. Results: During follow-up, 7.6% received disability pension. Physical exertion and emotional demands were associated with risk of disability pension, and both interacted with age. In age-stratified analyses, older eldercare workers (mean age 53 years at baseline) with moderate and high physical exertion (reference: low) were at increased risk with HRs of 1.51, 95% CI [1.06-2.15] and 2.54, 95% CI [1.34-4.83], respectively. Younger eldercare workers (mean age 36 years at baseline) with moderate emotional demands (reference: low) were at decreased risk with an HR of 0.57, 95% CI [0.37-0.85]. Conclusions: While a higher level of physical exertion is a risk factor for disability pension among older female eldercare workers, a moderate level of emotional demands is associated with lower risk among the younger workers. The age of the worker may be an important factor when providing recommendations for promoting a long and healthy working life

Borgheipour H, Eskandari D, Barkhordari A, Mavaji M, and Tehrani GM. Predicting the relationship between safety climate and safety performance in cement industry. Work. 2020; 66(1):109-117.

<https://doi.org/10.3233/WOR-203155>

Abstract: BACKGROUND: As cement industries have remarkably affected the economy of producer's countries, one of the main concerns of these industries is to prevent accidents and related costs. OBJECTIVE: The present study investigates the relationship between the safety climate and safety performance with the moderating role of safety knowledge and the mediating role of safety motivation in the cement industry. METHODS: Data were collected from 230 Iranian employees of the cement industry using a safety climate and performance questionnaire. The relationships between variables and analysis of the collected data were tested using structural equation modeling. RESULTS: The results indicated that the safety climate had a positive effect on safety performance in the cement industry. Moreover, management's commitment to safety was positively or negatively related to the social support and production pressure. There was either a positive and negative relationship between social support and production pressure of safety knowledge and safety motivation, respectively. CONCLUSION: The integrative model

suggested that it was important to promote the safety knowledge at all organizational levels to develop spontaneous activities and raise safety in the intended organization

Bravo G, Viviani CA, Lavalliere M, Arezes PM, Martinez M, Dianat I, et al. Do older workers suffer more workplace injuries? A Systematic Review. International Journal of Occupational Safety and Ergonomics. 2020; [epub ahead of print].

<https://doi.org/10.1080/10803548.2020.1763609>

Abstract: Aging populations are a dramatically-increased worldwide trend, both in developed and developing countries. This study examines the prevalence of fatal and non-fatal work-related injuries between young (under 45) and older workers (45 and above). A systematic literature review was used aimed at examining studies comparing safety outcomes, namely fatal and non-fatal injuries, between older and younger workers. Results show that 50% of the reviewed papers suggest that fatal injuries are suffered mainly by older workers, while the remaining 50% show no differences between older and younger workers. Regarding non-fatal injuries, 49% of the reviewed papers found no relationship between workers' age; 31% found increased age as a protective factor against non-fatal injuries; and 19% showed that older workers had a higher risk of non-fatal injuries than younger ones. This review suggests that older workers experience higher rates of fatal injuries, and younger workers higher rates of non-fatal injuries

Cummings KJ, Stanton ML, Kreiss K, Boylstein RJ, Park JH, Cox-Ganser JM, et al. Work-related adverse respiratory health outcomes at a machine manufacturing facility with a cluster of bronchiolitis, alveolar ductitis and emphysema (BADE).

Occupational & Environmental Medicine. 2020; 77(6):386-392.

<https://doi.org/10.1136/oemed-2019-106296>

Abstract: Objectives: Four machine manufacturing facility workers had a novel occupational lung disease of uncertain aetiology characterised by lymphocytic bronchiolitis, alveolar ductitis and emphysema (BADE). We aimed to evaluate current workers' respiratory health in relation to job category and relative exposure to endotoxin, which is aerosolised from in-use metalworking fluid.

Methods: We offered a questionnaire and spirometry at baseline and

3.5 year follow-up. Endotoxin exposures were quantified for 16 production and non-production job groups. Forced expiratory volume in one second (FEV1) decline =10% was considered excessive. We examined SMRs compared with US adults, adjusted prevalence ratios (aPRs) for health outcomes by endotoxin exposure tertiles and predictors of excessive FEV1 decline. Results: Among 388 (89%) baseline participants, SMRs were elevated for wheeze (2.5 (95% CI 2.1 to 3.0)), but not obstruction (0.5 (95% CI 0.3 to 1.1)). Mean endotoxin exposures (range: 0.09-28.4 EU/m³) were highest for machine shop jobs. Higher exposure was associated with exertional dyspnea (aPR=2.8 (95% CI 1.4 to 5.7)), but not lung function. Of 250 (64%) follow-up participants, 11 (4%) had excessive FEV1 decline (range: 403-2074 mL); 10 worked in production. Wheeze (aPR=3.6 (95% CI 1.1 to 12.1)) and medium (1.3-7.5 EU/m³) endotoxin exposure (aPR=10.5 (95% CI 1.3 to 83.1)) at baseline were associated with excessive decline. One production worker with excessive decline had BADE on subsequent lung biopsy. Conclusions: Lung function loss and BADE were associated with production work. Relationships with relative endotoxin exposure indicate work-related adverse respiratory health outcomes beyond the sentinel disease cluster, including an incident BADE case. Until causative factors and effective preventive strategies for BADE are determined, exposure minimisation and medical surveillance of affected workforces are recommended.

Di Nota PM, Anderson GS, Ricciardelli R, Carleton RN, and Groll D. Mental disorders, suicidal ideation, plans and attempts among Canadian police. Occupational Medicine. 2020; 70(3):183-190.

<https://doi.org/10.1093/occmed/kqaa026> [open access]

Abstract: BACKGROUND: Recent investigations have demonstrated a significant prevalence of mental health disorders, including post-traumatic stress disorder (PTSD), and suicidal ideation, plans and attempts among Canadian public safety personnel, including police officers. What remains unknown is the relationship between mental disorders and suicide among sworn police officers, and the prevalence of both among civilian police workers. AIMS: To examine the relationship between suicidal ideation, plans and attempts and positive mental health screens for depression, anxiety, panic

disorder, alcohol abuse and PTSD among Canadian sworn and civilian police employees. **METHODS:** Participants completed an online survey that included self-report screening tools for depression, anxiety, panic disorder, alcohol abuse and PTSD. Respondents were also asked if they ever contemplated, planned or attempted suicide. Between-group (Royal Canadian Mounted Police [RCMP], provincial/municipal police and civilians) differences on mental health screening tools were calculated using Kruskal-Wallis analyses. The relationship between mental disorders and suicidal ideation, plans and attempts was evaluated with a series of logistic regressions. **RESULTS:** There were 4236 civilian and sworn officer participants in the study. RCMP officers reported more suicidal ideation than other police and scored highest on measures of PTSD, depression, anxiety, stress and panic disorder, which were significantly associated with suicidal ideation and plans but not attempts. Relative to provincial and municipal police, civilians reported more suicide attempts and scored higher on measures of anxiety. **CONCLUSIONS:** The results identify a strong relationship between mental health disorders and increased risk for suicidal ideation, plans and attempts among sworn and civilian Canadian police employees

Froyland K and Terjesen HCA. Workplace perceptions of older workers and implications for job retention. *Nordic Journal of Working Life Studies*. 2020; 10(2):23.

<https://doi.org/10.18291/njwls.v10i2.120819> [open access]

Abstract: Older workers' opportunities for late careers are influenced by employer attitudes and willingness. Nordic managers seem unwilling to hire and retain older persons. In this article, we explore Norwegian workplace perceptions of older workers and the way they are positioned at the workplace. We base this article on qualitative interviews with managers and both union and HR-representatives from 19 companies. Previous research has linked this unwillingness to stereotypes and ageism among employers. We find that the perceptions of older workers do not rest only on stereotypes and ageism, but also on concrete experiences of older workers and processes or mechanisms of positioning and polarization that sometimes occur within the workplace. These actors perceive older workers as a heterogeneous group. We argue that these perceptions may lead to ambivalence towards older workers as a group, and in

how to handle them individually. Qualified and available support and flexible strategies are needed.

Koopmans E, Fyfe T, Eadie M, and Pelletier CA. Exploring prevention and mitigation strategies to reduce the health impacts of occupational exposure to wildfires for wildland firefighters and related personnel: protocol of a scoping study. Systematic Reviews. 2020; 9(1):119.

<https://doi.org/10.1186/s13643-020-01381-y> [open access]

Abstract: BACKGROUND: With an increase in wildfire activity across the globe and growing numbers of personnel involved each year, it is necessary to explore the health impacts of occupational exposure to wildfires and the practices and policies that can be implemented to mitigate these effects. The aim of this work is to (1) identify the impact occupational exposure to wildfires has on health outcomes including physical, mental, and social wellbeing; (2) examine the characteristics and effectiveness of mitigation strategies or policies to reduce negative health impacts as reported by current literature and reports; and (3) develop a program of research to address and understand the health impacts of occupational exposure to wildfires based on gaps in the literature and stakeholder priorities. METHODS: This scoping study will be conducted in two phases: (1) scoping literature review and (2) modified Delphi process. The literature review will follow a methodologically rigorous scoping review approach that includes (a) identifying the research question (and protocol development), (b) identifying literature (an iterative process), (c) selecting relevant studies, (d) extracting data into tables, and (e) synthesizing, summarizing, and reporting results. Alongside this, a modified Delphi process will be conducted to define priorities for wildland fire occupational health research. A partnership with the British Columbia (BC) Wildfire Service will enable exploring the appropriateness of identified mitigation strategies and health risks for the BC context. DISCUSSION: This two-phase approach will provide an in-depth review of the literature of the health impacts of occupational exposure to wildfires and identify mitigation strategies or policies implemented to protect workers and reduce negative health impacts. It is anticipated that these findings may provide recommendations for "quick wins" or initial action that can be implemented within the BC context to reduce negative health

outcomes, and inform gaps in context-specific research that needs to be addressed through a strategic, collaborative research program over the next 5 years. SYSTEMATIC REVIEW REGISTRATION: Open Science Framework osf.io/ugz4

Kudo T and Belzer MH. Excessive work hours and hypertension: evidence from the NIOSH survey data. Safety Science. 2020; 129:104813.

<https://doi.org/10.1016/j.ssci.2020.104813>

Lind CM, Forsman M, and Rose LM. Development and evaluation of RAMP II: a practitioner's tool for assessing musculoskeletal disorder risk factors in industrial manual handling. Ergonomics. 2020; 63(4):477-504.

<https://doi.org/10.1080/00140139.2019.1710576> [open access]

Abstract: RAMP II is an observation-based tool developed for assessing a wide range of musculoskeletal disorder risk factors related to industrial manual handling. RAMP II, which is part of the RAMP tool, is based on research studies and expert judgments. The assessment relies mainly on direct or video observations of the work being assessed, but additionally on measured push/pull forces and weights of handled objects, and on perceived workload and discomfort. Over 80 practitioners participated in the development of the tool. According to the evaluations, 73% of the assessment items evaluated had acceptable reliability, and the majority of the potential end-users reported that RAMP II is usable for assessing risks and as a decision base. It is concluded that this study provides support that RAMP II is usable for risk assessment of musculoskeletal disorder risk factors in industrial manual handling. Practitioner summary: RAMP II is an observation-based assessment tool for screening and assessing major musculoskeletal exposures in industrial manual handling jobs. Over 80 practitioners participated in the development of the tool. This study provides support that RAMP II is usable for risk assessment of musculoskeletal disorder risk factors in industrial manual handling. Abbreviations: CTS: carpal tunnel syndrome; HARM: the Hand Arm Risk Assessment method; IMP: intramuscular pressure; K(w): linearly weighted kappa; LBD: lower back disorders; LBP: lower back pain; MAWL: maximum acceptable weight of lift; MHO: manual handling operations; MSD: musculoskeletal disorder;

MNSD: neck-shoulder disorder; NSP: neck-shoulder pain; OCRA: the Occupational Repetitive Action methods; OHS: occupational health and safety; PABAK: prevalence and bias adjusted kappa; p0: proportion of agreement; RAMP: Risk Assessment and Management tool for manual handling Proactively; ROM: range of motion; RPL: risk and priority level; RSI: the Revised Strain Index; RULA: the Rapid Upper Limb Assessment; SWEA: Swedish Work Environment Authority; UEMSDs: upper-extremity work-related musculoskeletal disorders; WMSD: work-related musculoskeletal disorder; WRMSD: work-related musculoskeletal disorder; workday(8h): eight hours workday

Uhrenholdt Madsen C, Kirkegaard ML, Dyreborg J, and Hasle P. Making occupational health and safety management systems 'work': a realist review of the OHSAS 18001 standard. Safety Science. 2020; 129:104843.

<https://doi.org/10.1016/j.ssci.2020.104843>

Milner A, Aitken Z, Byars S, Butterworth P, and Kavanagh A. Do gender and psychosocial job stressors modify the relationship between disability and sickness absence: an investigation using 12 waves of a longitudinal cohort. Scandinavian Journal of Work, Environment & Health. 2020; 46(3):302-310.

<https://doi.org/10.5271/sjweh.3865> [open access]

Abstract: Objectives A considerable proportion of the working population reports a disability. These workers may be at risk of adverse outcomes, including longer periods of sickness absence. This study examined the causal effect of disability on sickness absence and the role of psychosocial job stressors and gender as effect modifiers. Methods Data on paid and unpaid sick leave, disability (yes/no) and psychosocial job stressors were available from 2005 to 2017 from the Household, Income and Labour Dynamics in Australia (HILDA) survey. Negative binomial models were used to model the rate of sickness absence in a year. Results In the random effects model, workers with disability had 1.20 greater rate of sickness absence in a year [95% confidence interval (CI) 1.17-1.23, $P < 0.001$] after adjustment for confounders. The rate was slightly lower in the fixed effects model. There was evidence of multiplicative interaction of the effect by gender and job control. The effect of

disability on sickness absence was greater among men than women, and higher for people with low job control compared to those with high job control. Conclusions There is a need for more research about the factors that can reduce sickness leave among workers with disabilities

Rosemberg MA. Health and safety considerations for hotel cleaners during Covid-19. Occupational Medicine. 2020; 70(3):214-215.

<https://doi.org/10.1093/occmed/kqaa053> [open access]

Shah SC, Boffetta P, Johnson KC, Hu J, Palli D, Ferraroni M, et al. Occupational exposures and odds of gastric cancer: a StoP project consortium pooled analysis. International Journal of Epidemiology. 2020; 49(2):422-434.

<https://doi.org/10.1093/ije/dyz263>

Abstract: BACKGROUND: Gastric cancer pathogenesis represents a complex interaction of host genetic determinants, microbial virulence factors and environmental exposures. Our primary aim was to determine the association between occupations/occupational exposures and odds of gastric cancer. METHODS: We conducted a pooled-analysis of individual-level data harmonized from 11 studies in the Stomach cancer Pooling Project. Multivariable logistic regression was used to estimate the odds ratio (OR) of gastric cancer adjusted for relevant confounders. RESULTS: A total of 5279 gastric cancer cases and 12 297 controls were analysed. There were higher odds of gastric cancer among labour-related occupations, including: agricultural and animal husbandry workers [odds ratio (OR) 1.33, 95% confidence interval (CI): 1.06-1.68]; miners, quarrymen, well-drillers and related workers (OR 1.70, 95% CI: 1.01-2.88); blacksmiths, toolmakers and machine-tool operators (OR 1.41, 95% CI: 1.05-1.89); bricklayers, carpenters and construction workers (OR 1.30, 95% CI: 1.06-1.60); and stationary engine and related equipment operators (OR 6.53, 95% CI: 1.41-30.19). The ORs for wood-dust exposure were 1.51 (95% CI: 1.01-2.26) for intestinal-type and 2.52 (95% CI: 1.46-4.33) for diffuse-type gastric cancer. Corresponding values for aromatic amine exposure were 1.83 (95% CI: 1.09-3.06) and 2.92 (95% CI: 1.36-6.26). Exposure to coal derivatives, pesticides/herbicides, chromium, radiation and magnetic

fields were associated with higher odds of diffuse-type, but not intestinal-type gastric cancer. **CONCLUSIONS:** Based on a large pooled analysis, we identified several occupations and related exposures that are associated with elevated odds of gastric cancer. These findings have potential implications for risk attenuation and could be used to direct investigations evaluating the impact of targeted gastric cancer prevention/early detection programmes based on occupation

Tran BX, Vu GT, Latkin CA, Pham HQ, Phan HT, Le HT, et al. Characterize health and economic vulnerabilities of workers to control the emergence of COVID-19 in an industrial zone in Vietnam. Safety Science. 2020; 129:104811.

<https://doi.org/10.1016/j.ssci.2020.104811> [open access]

Abstract: The detection of first COVID-19 infected industrial worker in Vietnam on 13 April 2020 prompted timely effort to examine the health problems, behaviors, and health services access of industrial workers to inform effective and appropriate COVID-19 control measures, minimizing the risk of industrial sites becoming the next disease cluster. A search strategy involving search terms corresponding to 'health', 'industrial worker', and 'Vietnam' was applied to search for related papers published in English on Web of Science, PubMed, and Google Scholar. Duplicates were removed, and relevant data were extracted from the full text of remaining publications. Results showed that underlying health problems, including respiratory system problems, were common among industrial workers. Many suffered occupational diseases and/or work-related injuries. Self-treatment (without medication) was the most used method when having health problems (by 28.2–51% of participants), followed by visiting commune health centers (24%) and self-medication (20.3%). Findings suggest a high risk of disease spreading among industrial workers and of them suffering more severe conditions when infected. Economic vulnerabilities may be the reason for workers' reluctance to taking time off work to attend hospital/clinic. These imply a need for involving local pharmacies, commune health centers, traditional health providers or village health collaborators as local health gatekeepers who are the first point of detecting and reporting of suspected COVID-19 cases, as well as a channel where accurate information regarding COVID-19, protective

equipment, and intervention packages can be delivered. Having COVID-19 testing centers at or near industrial sites are also recommended.

Weir A, Kitto S, Smith J, Presseau J, Colman I, and Hatcher S. Barriers and enablers to conducting cluster randomized control trials in hospitals: a theory-informed scoping review. Evaluation and Program Planning. 2020; 80:101815.

<https://doi.org/10.1016/j.evalprogplan.2020.101815>

Abstract: BACKGROUND: Cluster randomized control trials (cRCTs) have unique challenges compared to single site trials with regards to conduct of the trial, and it is important to understand these barriers. The aim of this scoping review was to describe the current literature surrounding the implementation of the cRCTs in hospitals.

METHODS: The search strategy was designed to identify literature relevant to conduct of cRCTs, with hospitals as the unit of randomization. Data was extracted and was mapped using the Consolidated Framework for Implementation Research (CFIR) as a codebook, which contains 39 constructs organized into five domains.

RESULTS: Twenty-two articles met inclusion criteria and were included. 18 of 39 constructs of the CFIR were identified in coding, spanning four of the five domains. Barriers to the conduct of the trial were rarely reported as the main outcome of the study, and few details were included in the identified literature. **CONCLUSIONS:** The review can provide guidance to future researchers planning cRCTs in hospitals. It also identified a large gap in reporting of conduct of these trials, demonstrating the need for a research agenda that further explores the barriers and facilitators, with the aim of garnering knowledge for improved guidance in the implementation

*IWH authored publication.