

IWH Research Alert
August 21, 2020

Missed an issue? Catch up on previous *Research Alerts* available on the IWH website <https://www.iwh.on.ca/journal-articles/research-alerts>

Research Alert is a service provided to you by the Institute for Work & Health (IWH) to help you keep abreast of recent literature in the areas of occupational health and safety, epidemiology, public health and others within the IWH mandate. Please note that these articles have not been reviewed by Institute scientists to assess the quality of the studies. *Research Alerts* should not be considered an endorsement of the findings. Readers are cautioned not to act on the results of single studies, but rather to seek bodies of evidence. It should also be noted that the Institute for Work & Health cannot provide full-text of articles listed in *Research Alerts* to individuals outside of the organization, as this violates copyright legislation.

***Furlan AD, Chou R, Harbin S, and Pardo J. The 22nd anniversary of the Cochrane Back and Neck Group. *Spine*. 2020; [epub ahead of print].**

<https://doi.org/10.1097/BRS.0000000000003626>

Abstract: STUDY DESIGN: Retrospective review and literature review
OBJECTIVE.: To provide an update on The Cochrane Back and Neck (CBN) activities. SUMMARY OF BACKGROUND DATA: Low back pain (LBP) affects 80% of people at some time in their lives. CBN Group has been housed in Toronto at the Institute for Work & Health since 1996 and has published 85 reviews and 32 protocols in the Cochrane Library. METHODS: Narrative review of CBN publications, impact factor, usage data, and social media impact. RESULTS: In the past 3 years, CBN conducted priority setting with organizations that develop clinical practice guidelines for LBP. CBN editors and associate editors published key methodological articles in the field of back and neck pain research. The methodological quality of CBN reviews has been assessed by external groups in a variety of areas, which found that CBN reviews had higher methodological quality than

non-Cochrane reviews. CBN reviews have been included in 35 clinical practice guidelines for back and neck conditions. The 2018 journal impact factor of CBN is 11.154, which is higher than the 2018 impact factor for CDSR (7.755). CBN reviews ranked 4th among 53 Cochrane review groups in terms of Cochrane Library usage data. The most accessed CBN review was "Yoga treatment for chronic non-specific low-back pain" which had 9,689 full text downloads. CBN is active on Twitter with 3,958 followers. CONCLUSIONS: CBN has published highly utilized systematic reviews and made important methodological contributions to the field of spine research over the past 22 years within Cochrane. LEVEL OF EVIDENCE: 4

***Kosny A, Yanar B, Begum M, Al-khooly D, Premji S, Lay MA, and Smith PM. Safe employment integration of recent immigrants and refugees. Journal of International Migration and Integration. 2020; 21(3):807-827.**

<https://doi.org/10.1007/s12134-019-00685-w> [open access]

Abstract: This study examined the employment preparation and work experiences of recent immigrants and refugees in Ontario, Canada, to determine key resource needs and opportunities related to safe work integration. In-depth interviews were conducted with 22 service providers, program developers, and policy-makers from the immigration and employment fields. Eighteen focus groups were held with 110 recent immigrants and refugees who were looking for work or who had recently found work. An exploratory qualitative approach was used to collect and analyze the data. First jobs were often characterized by precarity and poor working conditions. Most recent immigrants and refugees had little knowledge about their rights at work and were not sure what to do when mistreated or were asked to do something unsafe at work. The settlement and employment programs that included occupational health and safety information were not systematic and were hindered by a lack of consistent funding and diffusion of responsibility. We identify optimal points in the settlement process where information can be provided, and some of the roles that can be played most effectively by service agencies, regulatory bodies, and employers

***Lahey P, Kirsh B, Tompa E, MacDermid J, and Gewurtz RE. The Ontario Disability Support Program work exit process: parallels**

to a hostage negotiation. *Journal of Disability Policy Studies*. 2020; [epub ahead of print].

<https://doi.org/10.1177/1044207320944609>

***McAllister A, Bodin T, Bronnum-Hansen H, Harber-Aschan L, Barr B, Bentley L, Liao Q, Koitzsch Jensen N, Andersen I, Chen WH, Thielen K, Mustard C, et al. Inequalities in extending working lives beyond age 60 in Canada, Denmark, Sweden and England: by gender, level of education and health. *PLoS ONE*. 2020; 15(8):e0234900.**

<https://doi.org/10.1371/journal.pone.0234900> [open access]

Abstract: BACKGROUND: Keeping older workers in employment is critical for societies facing the challenge of an ageing population. This study examined the association between types of health conditions and differentials in the probability of employment by level of education among men and women between 60-69 years of age in Canada, Denmark, Sweden and England. METHODS: Data were drawn from the Canadian Community Health Survey, Survey of Health, Ageing and Retirement in Europe and English Longitudinal Study of Ageing. We combined country data, applied logistic regression, adjusted for educational level, and stratified the analysis by sex to calculate the odds ratio (OR) of employment (>15 hours work per week) for persons with physical health conditions, mental health conditions (depression) and physical-mental health comorbidity. RESULTS: The odds of employment among men and women with physical-mental health comorbidity were lower compared to those with no/other conditions (men: OR 0.32, 95% CI: 0.25-0.42, women: OR 0.38 95% CI: 0.30-0.48). Women with low education had lower odds of employment compared to their counterparts with high education (OR 0.66, 95% CI: 0.57-0.76). The odds of employment at older ages was lower in Canada, Denmark and England compared with Sweden (e.g. English men: OR 0.48 95% CI 0.40-0.58; English women OR 0.33 95% CI 0.27-0.41). CONCLUSIONS: The odds of employment beyond age 60 is lower for groups with low education, particularly women, and those with physical-mental health co-morbidities. As such, policies to extend working lives should not be 'one size fits all' but instead consider subgroups, in particular, these groups that we have shown to be most vulnerable on the labour market

Collins C, DeRigne L, Bai R, and Stoddard Dare P. Paid sick leave and sleep: an analysis of US adult workers. Journal of Occupational and Environmental Medicine. 2020; 62(8):566-573. <https://doi.org/10.1097/JOM.0000000000001884>

Abstract: OBJECTIVE: This study examines links between paid sick leave benefits and sleep as an indicator of well-being. METHODS: Using data from 12,780 employed adult US workers in the 2018 National Health Interview Survey, the relationship between paid sick leave and sleep was explored while controlling for demographic and health status variables. RESULTS: Logistic multiple regression analyses revealed that compared with workers without paid sick leave, workers with paid sick leave had significantly higher odds of staying asleep, lower odds of feeling rested, and marginally significantly higher odds of having little trouble falling asleep. The groups did not differ regarding the odds of taking sleep medication or getting the ideal amount of sleep. CONCLUSION: The findings suggest a link between sleep quality and access to paid sick leave, adding to a growing list of health and well-being variables associated with paid sick leave benefits

Corbiere M, Mazaniello-Chezol M, Bastien MF, Wathieu E, Bouchard R, Panaccio A, et al. Stakeholders' role and actions in the return-to-work process of workers on sick-leave due to common mental disorders: a scoping review. Journal of Occupational Rehabilitation. 2020; 30(3):381-419. <https://doi.org/10.1007/s10926-019-09861-2>

Abstract: The lack of knowledge regarding the roles and actions of return to work (RTW) stakeholders create confusion and uncertainty about how and when to RTW after experiencing a common mental disorder (CMD). Purpose The purpose of this scoping review is to disentangle the various stakeholders' role and actions in the RTW process of workers on sick-leave due to CMDs. The research question is: What is documented in the existing literature regarding the roles and actions of the identified stakeholders involved in the RTW process of workers on sick-leave due to CMDs? Methods In conducting this scoping review, we followed Arksey and O'Malley's (Int J Soc Res Methodol 8:19-32, 2005) methodology, consisting of different stages (e.g., charting the data by categorizing key results). Results 3709 articles were screened for inclusion, 243 of which were

included for qualitative synthesis. Several RTW stakeholders (n=11) were identified (e.g., workers on sick leave due to CMDs, managers, union representatives, rehabilitation professionals, insurers, return to work coordinators). RTW stakeholders' roles and actions inter- and intra-system were recommended, either general (e.g., know and understand the perspectives of all RTW stakeholders) or specific to an actor (e.g., the return to work coordinator needs to create and maintain a working alliance between all RTW stakeholders). Furthermore, close to 200 stakeholders' actions, spread out on different RTW phases, were recommended for facilitating the RTW process. Conclusions Eleven RTW stakeholders from the work, health and insurance systems have been identified, as well as their respective roles and actions. Thanks to these results, RTW stakeholders and policy makers will be able to build practical relationships and collaboration regarding the RTW of workers on sick leave due to CMDs

Gilbert-Ouimet M, Trudel X, Aube K, Ndjaboue R, Duchaine C, Blanchette C, et al. Differences between women and men in the relationship between psychosocial stressors at work and work absence due to mental health problem. Occupational and Environmental Medicine. 2020; 77(9):603-610.

<https://doi.org/10.1136/oemed-2019-106242>

Abstract: Objectives: Women have a higher incidence of mental health problems compared with men. Psychosocial stressors at work are associated with mental health problems. However, few prospective studies have examined the association between these stressors and objectively measured outcomes of mental health. Moreover, evidence regarding potential differences between women and men in this association is scarce and inconsistent. This study investigates whether psychosocial stressors at work are associated with the 7.5-year incidence of medically certified work absence due to a mental health problem, separately for women and men.

Methods: Data from a prospective cohort of white-collar workers in Canada (n=7138; 47.3% women) were used. We performed Cox regression models to examine the prospective association between self-reported psychosocial stressors at work (job strain model) at baseline and the 7.5-year HR of medically certified work absence of ≥5 days due to a mental health problem.

Results: During follow-up, 11.9% of participants had a certified work absence, with a twofold higher incidence among women. Women (HR 1.40, 95% CI 1.01 to 1.93) and men (HR 1.41, 95% CI 0.97 to 2.05) exposed to high strain (high demands and low control) had a higher incidence of work absence compared with those unexposed. Among women only, those exposed to an active job situation (high demands and high control) also had a higher risk (HR 1.82, 95% CI 1.29 to 2.56).

Conclusions: Prevention efforts aimed at reducing psychosocial stressors at work could help lower the risk of work absence for both women and men. However, important differences between women and men need to be further studied in order to orient these efforts.

Glade R, Koch LC, Zaandam A, Simon LS, Manno CM, Rumril PD, et al. Recommendations from employees with disabilities for creating inclusive workplaces: results from a grounded theory investigation. Journal of Vocational Rehabilitation. 2020; 53(1):77-88.

<https://doi.org/10.3233/JVR-201087>

Harcombe H, Samaranayaka A, Wyeth EH, Davie G, Cameron ID, Lilley R, et al. Predictors of subsequent injury at work: findings from a prospective cohort of injured workers in New Zealand. Occupational and Environmental Medicine. 2020; [epub ahead of print].

<https://doi.org/10.1136/oemed-2020-106597>

Abstract: Objectives: People who have experienced a work-related injury can experience further work injuries over time. This study examines predictors of subsequent work-related injuries over 24 months among a cohort of injured workers.

Methods: Participants were those recruited to the earlier Prospective Outcomes of Injury Study (POIS) who had a work-related injury (the 'sentinel' injury). Data from POIS participant interviews were combined with administrative data from the Accident Compensation Corporation (New Zealand's no-fault universal injury insurer) and hospital discharge data. Modified Poisson regression modelling was used to examine whether presentinel injury sociodemographic and health, sentinel injury or presentinel injury work-related factors predicted subsequent work-related injuries.

Results: Over a third of participants (37%) had at least one subsequent work-related injury in 24 months. Factors associated with an increased risk of work-related subsequent injury included being in a job involving carrying or moving heavy loads more than half the time compared with those in jobs that never involved such tasks (RR 1.42, 95% CI 1.01 to 2.01), having an inadequate household income compared with those with an adequate household income (RR 1.33, 95% CI 1.02 1.74) and being aged 50-64 years compared with those aged 30-49 years (RR 1.25, 95% 1.00 to 1.57).

Conclusion: Subsequent work-related injuries occur frequently, and presenting with a work-related injury indicates a potentially important intervention point for subsequent injury prevention. While the strength of associations were not strong, factors identified in this study that showed an increased risk of subsequent work-related injuries may provide a useful focus for injury prevention or rehabilitation attention.

Koh D. Migrant workers and COVID-19. Occupational and Environmental Medicine. 2020; 77(9):634.

<https://doi.org/10.1136/oemed-2020-106626> [open access]

Abstract: Objectives Daily numbers of COVID-19 in Singapore from March to May 2020, the cause of a surge in cases in April and the national response were examined, and regulations on migrant worker accommodation studied. Methods Information was gathered from daily reports provided by the Ministry of Health, Singapore Statues online and a Ministerial statement given at a Parliament sitting on 4 May 2020. Results A marked escalation in the daily number of new COVID-19 cases was seen in early April 2020. The majority of cases occurred among an estimated 295 000 low-skilled migrant workers living in foreign worker dormitories. As of 6 May 2020, there were 17 758 confirmed COVID-19 cases among dormitory workers (88% of 20 198 nationally confirmed cases). One dormitory housing approximately 13 000 workers had 19.4% of residents infected. The national response included mobilising several government agencies and public volunteers. There was extensive testing of workers in dormitories, segregation of healthy and infected workers, and daily observation for fever and symptoms. Twenty-four dormitories were declared as 'isolation areas', with residents quarantined for 14 days. New housing, for example, vacant public housing flats, military camps, exhibition centres, floating hotels have been provided that will

allow for appropriate social distancing. Conclusion The COVID-19 pandemic has highlighted migrant workers as a vulnerable occupational group. Ideally, matters related to inadequate housing of vulnerable migrant workers need to be addressed before a pandemic.

This article is made freely available for use in accordance with BMJ's website terms and conditions for the duration of the covid-19 pandemic or until otherwise determined by BMJ. You may use, download and print the article for any lawful, non-commercial purpose (including text and data mining) provided that all copyright notices and trade marks are retained.

Laditka JN, Laditka SB, Arif AA, and Hoyle JN. Work-related asthma in the USA: nationally representative estimates with extended follow-up. Occupational and Environmental Medicine. 2020; 77(9):617-622.

<https://doi.org/10.1136/oemed-2019-106121>

Abstract: Objective: We studied the associations of working in occupations with high asthma trigger exposures with the prevalence and incidence of asthma, and with ever reporting an asthma diagnosis throughout working life.

Methods: We used the nationally representative Panel Study of Income Dynamics (1968-2015; n=13 957; 205 498 person-years), with annual reports of occupation and asthma diagnoses across 48 years. We compared asthma outcomes in occupations likely to have asthma trigger exposures with those in occupations with limited trigger exposures. We estimated the prevalence ratios and the incidence risk ratios using log-binomial regression adjusted for age, sex, race/ethnicity, education, and current and past atopy and smoking, and accounting for the survey design and sampling weights. We calculated the attributable risk fractions and population attributable risks, and used multinomial logistic Markov models and microsimulation to estimate the percentage of people ever diagnosed with asthma during working life.

Results: The adjusted prevalence ratio comparing high-risk occupations with low-risk was 4.1 (95% CI 3.5 to 4.8); the adjusted risk ratio was 2.6 (CI 1.8 to 3.9). The attributable risk was 16.7% (CI 8.5 to 23.6); the population attributable risk was 11.3% (CI 5.0 to 17.2). In microsimulations, 14.9% (CI 13.4 to 16.3) with low trigger

exposure risk reported asthma at least once, ages 18-65, compared with 23.9% (CI 22.3 to 26.0) with high exposure risk.

Conclusion: Adults were more than twice as likely to report a new asthma diagnosis if their occupation involved asthma triggers. Work exposures to asthma triggers may cause or aggravate about 11% of all adult asthma and increase the risk of work-life asthma by 60%.

Lutz N, Deliens T, Clarys P, Verhaeghe N, and Taeymans J. Health economic evaluation of an influenza vaccination program to prevent sick leave in employees: a prospective cohort study. Journal of Occupational and Environmental Medicine. 2020; 62(8):549-556.

<https://doi.org/10.1097/JOM.0000000000001878>

Abstract: OBJECTIVE: To evaluate the cost-effectiveness of an influenza vaccination program (IVP) among employees. METHODS: This health economic evaluation was embedded in a prospective cohort study of a voluntary IVP. Data on incidence, direct, and indirect costs were collected via questionnaires. Bootstrapping and modeling techniques were used to assess uncertainty of the results. RESULTS: In the base-scenario, the IVP was less effective, more expensive and thus, neither cost-effective nor cost-beneficial. When applying a sensitivity analysis using published estimates of IVP effectiveness on the data, the IVP became cost-effective and cost-beneficial. CONCLUSIONS: Like in many evaluations of real-world settings, lack of randomization may have caused selection bias which may explain the surprising results of the main analysis. This indicates the importance of sensitivity analyses and modeling approaches for future studies assessing the cost-effectiveness of IVP in a real-world setting

MacEachen E, McDonald E, Neiterman E, McKnight E, Malachowski C, Crouch M, et al. Return to work for mental ill-health: a scoping review exploring the impact and role of return-to-work coordinators. Journal of Occupational Rehabilitation. 2020; 30(3):455-465.

<https://doi.org/10.1007/s10926-020-09873-3> [open access]

Abstract: Purpose This scoping review was completed to explore the role and impact of having a return-to-work (RTW) coordinator when dealing with individuals with common mental ill-health conditions.

Methods Peer reviewed articles published in English between 2000 and 2018 were considered. Our research team reviewed all articles to determine if an analytic focus on RTW coordinator and mental ill-health was present; consensus on inclusion was reached for all articles. Data were extracted for all relevant articles and synthesized for outcomes of interest. Results Our search of six databases yielded 1798 unique articles; 5 articles were found to be relevant. The searched yielded only quantitative studies. Of those, we found that studies grouped mental ill-health conditions together, did not consider quality of life, and used different titles to describe RTW coordinators. Included articles described roles of RTW coordinators but did not include information on their strategies and actions. Included articles suggest that RTW interventions for mental ill-health that utilize a RTW coordinator may result in delayed time to RTW. Conclusions Our limited findings suggest that interventions for mental ill-health that employ RTW coordinators may be more time consuming than conventional approaches and may not increase RTW rate or worker's self-efficacy for RTW. Research on this topic with long-term outcomes and varied research designs (including qualitative) is needed, as well as studies that clearly define RTW coordinator roles and strategies, delineate results by mental health condition, and address the impact of RTW coordinators on workers' quality of life

Schram JLD, Robroek SJW, Ots P, Brouwer S, Burdorf A, Van Zon SKR, et al. Influence of changing working conditions on exit from paid employment among workers with a chronic disease. *Occupational and Environmental Medicine*. 2020; 77(9):628-633. <https://doi.org/10.1136/oemed-2019-106383> [open access]

Abstract: Objectives: To investigate the relation between changes in working conditions and exit from paid employment among workers with a chronic disease. Methods: Six waves from the longitudinal Study on Transitions in Employment, Ability and Motivation (2010-2016), enriched with tax-based employment information from Statistics Netherlands (2011-2017), were available for 4820 chronically ill workers aged 45-63 years (mean 55.3 years, SD 5.1). A change in working conditions (physical workload, psychological job demands, job autonomy, emotional job demands and social support) was defined as an increase or decrease between two consecutive waves of at least one SD. Discrete-time survival models with

repeated measurements were used to estimate the relative risk (RR) of a change in working conditions on exiting paid employment in the following year compared with no change and consecutive favourable working conditions. Results: A favourable change in physical workload lowered the risk to exit paid employment (RR 0.46, 95% CI 0.22 to 0.94). An adverse change in psychosocial working conditions, especially a decrease in social support (RR 2.07, 95% CI 1.52 to 2.81), increased the likelihood to exit paid employment. In contrast, a favourable change in psychological job demands increased the risk to exit paid employment (RR 1.57, 95% CI 1.09 to 2.24). Multiple adverse changes increased the risk to exit paid employment up to six times (RR 6.06, 95% CI 2.83 to 12.98). Conclusions: Changes in working conditions among workers with chronic diseases influence exit from paid employment. Ensuring that working conditions can be adapted to the needs of workers with a chronic disease may help to extend working life.

Van de Ven D, Robroek SJW, and Burdorf A. Are workplace health promotion programmes effective for all socioeconomic groups? A systematic review. *Occupational and Environmental Medicine*. 2020; 77(9):589-596.

<https://doi.org/10.1136/oemed-2019-106311> [open access]

Abstract: Decreasing socioeconomic health inequalities is considered an important policy priority in many countries. Workplace health promotion programmes (WHPPs) have shown modest improvements in health behaviour. This systematic review aims to determine the presence and magnitude of socioeconomic differences in effectiveness and the influence of programme characteristics on differential effectiveness of WHPPs. Three electronic databases were searched for systematic reviews published from 2013 onwards and for original studies published from 2015 onwards. We synthesised the reported socioeconomic differences in effectiveness of WHPPs on health behaviours, and calculated effectiveness ratios by dividing the programme effects in the lowest socioeconomic group by the programme effects in the highest socioeconomic group. Thirteen studies with 75 comparisons provided information on the effectiveness of WHPPs across socioeconomic groups. Ten studies with 54 comparisons reported equal effectiveness and one study with 3 comparisons reported higher effectiveness for lower socioeconomic

groups. Quantitative information on programme effects was available for six studies with 18 comparisons, of which 13 comparisons showed equal effectiveness and 5 comparisons showed significantly higher effect sizes among workers in low socioeconomic position. The differential effectiveness of WHPPs did not vary across programme characteristics. In this study no indications are found that WHPPs increase socioeconomic inequalities in health behaviour. The limited quantitative information available suggests that WHPPs may contribute to reducing socioeconomic inequalities. Better insight is needed on socioeconomic differences in effectiveness of WHPPs to develop strategies to decrease socioeconomic inequalities in health in the workforce

Wyper GMA, Assuncao R, Cuschieri S, Devleeschauwer B, Fletcher E, Haagsma JA, et al. Population vulnerability to COVID-19 in Europe: a burden of disease analysis. Archives of Public Health. 2020; 78:47.

<https://doi.org/10.1186/s13690-020-00433-y> [open access]

Abstract: Background: Evidence has emerged showing that elderly people and those with pre-existing chronic health conditions may be at higher risk of developing severe health consequences from COVID-19. In Europe, this is of particular relevance with ageing populations living with non-communicable diseases, multi-morbidity and frailty. Published estimates of Years Lived with Disability (YLD) from the Global Burden of Disease (GBD) study help to characterise the extent of these effects. Our aim was to identify the countries across Europe that have populations at highest risk from COVID-19 by using estimates of population age structure and YLD for health conditions linked to severe illness from COVID-19. Methods: Population and YLD estimates from GBD 2017 were extracted for 45 countries in Europe. YLD was restricted to a list of specific health conditions associated with being at risk of developing severe consequences from COVID-19 based on guidance from the United Kingdom Government. This guidance also identified individuals aged 70 years and above as being at higher risk of developing severe health consequences. Study outcomes were defined as: (i) proportion of population aged 70 years and above; and (ii) rate of YLD for COVID-19 vulnerable health conditions across all ages. Bivariate groupings were established for each outcome and combined to

establish overall population-level vulnerability. Results: Countries with the highest proportions of elderly residents were Italy, Greece, Germany, Portugal and Finland. When assessments of population-level YLD rates for COVID-19 vulnerable health conditions were made, the highest rates were observed for Bulgaria, Czechia, Croatia, Hungary and Bosnia and Herzegovina. A bivariate analysis indicated that the countries at high-risk across both measures of vulnerability were: Bulgaria; Portugal; Latvia; Lithuania; Greece; Germany; Estonia; and Sweden. Conclusion: Routine estimates of population structures and non-fatal burden of disease measures can be usefully combined to create composite indicators of vulnerability for rapid assessments, in this case to severe health consequences from COVID-19. Countries with available results for sub-national regions within their country, or national burden of disease studies that also use sub-national levels for burden quantifications, should consider using non-fatal burden of disease estimates to estimate geographical vulnerability to COVID-19.

*IWH authored publications.