

IWH Research Alert
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***Gignac MAM, Smith PM, Ibrahim S, Kristman V, Beaton DE, and Mustard CA. Retirement expectations of older workers with arthritis and diabetes compared with those of workers with no chronic diseases. *Canadian Journal on Aging*. 2019; [Epub ahead of print].**

<https://doi.org/10.1017/S0714980818000685>

Abstract: We know little about the retirement plans of adults with chronic diseases. This research recruited Canadian workers 50-67 years of age from a national panel of 80,000 individuals (arthritis, n = 631; diabetes, n = 286; both arthritis and diabetes, n = 111; no chronic disabling conditions, n = 538). A cross-sectional survey asked participants about their expected age of retirement, future work plans, whether they were retiring sooner than planned, and bridged retirement. Chi-square analyses, analyses of variance, and regression analyses examined expectations and factors associated with them. Despite health difficulties, workers with arthritis and diabetes had retirement plans similar to those of healthy controls and consistent with normative expectations of working to a traditional retirement age. However, more respondents with arthritis or diabetes reported bridged retirement than healthy controls. Contrary to predictions, health factors accounted for less of the variance in retirement expectations than other factors. These findings point to the complexity surrounding retirement expectations and highlight person-job fit rather than disease factors alone

Baidwan NK, Gerberich SG, Kim H, Ryan A, Church T, and Capistrant B. A longitudinal study of work-related psychosocial factors and injuries: implications for the aging United States workforce. American Journal of Industrial Medicine. 2019; 62(3):212-221.

<https://doi.org/10.1002/ajim.22945>

Abstract: INTRODUCTION: This study aimed to identify psychosocial work factors that may individually or, in combination, influence injury outcomes among aging United States (U.S.) workers. METHODS: Data from the U.S. Health and Retirement Study (HRS) of 3305 working adults, aged 50 years and above, were used to identify associations between work-related psychosocial factors and injury incidence from 2006 to 2014, using adjusted incidence rate ratios. RESULTS: Employees perceiving their work as high in psychological and physical demands/efforts, low in support, and rewards, compared to those in workplaces with low demands, high support, and high rewards, had a risk of injury two times greater. Males, compared with females, had a greater risk for injuries when interactions among several psychosocial work-related factors were modeled. CONCLUSIONS: The fact that important gender-based differences emerged when interactions among the psychosocial factors and injury were modeled, suggests opportunities for further research and potential interventions to enhance the working environment

Bernardes JM, Gomez-Salgado J, Ruiz-Frutos C, and Dias A. Self-reports of musculoskeletal symptoms as predictors of work-related accidents: a hospital-based case-control study. Safety Science. 2019; 115:103-109.

<https://doi.org/10.1016/j.ssci.2019.01.031>

Binazzi A, Levi M, Bonafede M, Bugani M, Messeri A, Morabito M, et al. Evaluation of the impact of heat stress on the occurrence of occupational injuries: meta-analysis of observational studies. American Journal of Industrial Medicine. 2019; 62(3):233-243.

<https://doi.org/10.1002/ajim.22946>

Abstract: BACKGROUND: Growing evidence indicates that the exposure to high heat levels in the workplace results in health problems in workers. A meta-analysis was carried out to summarize the epidemiological evidence of the effects of heat exposure on the risk of occupational injuries. METHODS: A search strategy was conducted to retrieve studies on the effects of climate change on occupational injury risk. Among the 406 identified, 5 time-series and 3 case-crossover studies were selected for meta-analysis. RESULTS: Pooled risk estimates for time-series and case-crossover studies combined, and then separated, were 1.005 (95%CI: 1.001-1.009), 1.002 (95%CI: 0.998-1.005), and 1.014 (95%CI: 1.012-1.017), respectively. Subgroup analyses found increased risks (not statistically significant) for male gender, age <25 years and agriculture. CONCLUSIONS: The present findings can orient further research to assess the effects of heat at workplace and consequently to establish better health policies for managing such exposure in at-risk regions

Carlson DS, Thompson MJ, and Kacmar KM. Double crossed: the spillover and crossover effects of work demands on work outcomes through the family. *Journal of Applied Psychology*. 2019; 104(2):214-228.

<https://doi.org/10.1037/apl0000348>

Abstract: This study expands our understanding of the negative impact of work demands on work outcomes by examining this impact in light of the family domain. We explore how the family domain plays a role in this process by considering mechanisms that capture both spillover and crossover effects. We investigate the spillover of work demands (i.e., role conflict and role overload) through work-to-family conflict on work attitudes (i.e., job satisfaction and affective commitment) and self-reported work behaviors (i.e., citizenship behavior and absenteeism). We also consider the double crossover of work demands through work-to-family conflict to stress transmission, and back to the incumbent's family-to-work conflict on both attitudinal and behavioral work outcomes to examine the impact of work demands. Using a time-lagged matched sample of 389 dual career couples, we found spillover effects for the work attitudes and crossover effects for the work behaviors, suggesting work demands uniquely shape outcomes depending on the path they take. We close by offering implications for research and practice. (PsycINFO Database Record (c) 2019 APA, all rights reserved)

Crane M, Bohn-Goldbaum E, Lloyd B, Rissel C, Bauman A, Indig D, et al. Evaluation of Get Healthy at Work, a state-wide workplace health promotion program in Australia. *BMC Public Health*. 2019; 19(1):183.

<https://doi.org/10.1186/s12889-019-6493-y> [open access]

Abstract: Workplace health programs (WHPs) may improve adult health but very little evidence exists on multi-level WHPs implemented at-scale and so the relationship between program implementation factors and outcomes of WHPs are poorly understood. This study evaluated Get Healthy at Work (GHaW), a state-wide government-funded WHP in Australia

Fontaneda I, Lopez MAC, Alcantara OJG, and Ritzel DO. Gender differences in lost work days due to occupational accidents. *Safety Science*. 2019; 114:23-29.

<https://doi.org/10.1016/j.ssci.2018.12.027>

French SD, Green ME, Bhatia RS, Peng Y, Hayden JA, Hartvigsen J, et al. Imaging use for low back pain by Ontario primary care clinicians: protocol for a mixed methods study: the Back ON study. *BMC Musculoskeletal Disorders*. 2019; 20(1):50.

<https://doi.org/10.1186/s12891-019-2427-1> [open access]

Abstract: BACKGROUND: At any one time, one in every five Canadians has low back pain (LBP), and LBP is one of the most common health problems in primary care. Guidelines recommend that imaging not be routinely performed in patients presenting with LBP without signs or symptoms indicating a potential pathological cause. Yet imaging rates remain high for many patients who present without

such indications. Inappropriate imaging can lead to inappropriate treatments, results in worse health outcomes and causes harm from unnecessary radiation. There is a need to understand the extent of, and factors contributing to, inappropriate imaging for LBP, and to develop effective strategies that target modifiable barriers and facilitators. The primary study objectives are to determine: 1) The rate of, and factors associated with, inappropriate lumbar spine imaging (x-ray, CT scan and MRI) for people with non-specific LBP presenting to primary care clinicians in Ontario; 2) The barriers and facilitators to reduce inappropriate imaging for LBP in primary care settings. METHODS: The project will comprise an inception cohort study and a concurrent qualitative study. For the cohort study, we will recruit 175 primary care clinicians (50 each from physiotherapy and chiropractic; 75 from family medicine), and 3750 patients with a new episode of LBP who present to these clinicians. Clinicians will collect data in the clinic, and each participant will be tracked for 12 months using Ontario health administrative and self-reported data to measure diagnostic imaging use and other health outcomes. We will assess characteristics of the clinicians, patients and encounters to identify variables associated with inappropriate imaging. In the qualitative study we will conduct in-depth interviews with primary care clinicians and patients. DISCUSSION: This will be the first Canadian study to accurately document the extent of the overuse of imaging for LBP, and the first worldwide to include data from the main healthcare professions offering primary care for people with LBP. This study will provide robust information about rates of inappropriate imaging for LBP, along with factors associated with, and an understanding of, potential reasons for inappropriate imaging

Green DR, Gerberich SG, Kim H, Ryan AD, McGovern PM, Church TR, et al. Janitor workload and occupational injuries. American Journal of Industrial Medicine. 2019; 62(3):222-232.

<https://doi.org/10.1002/ajim.22940>

Abstract: BACKGROUND: This study was designed to identify potential effects of workload and sleep on injury occurrence. METHODS: Questionnaires were disseminated to janitors in the SEIU Local 26 union; 390 responded and provided information on workload, sleep, and injury outcomes. Quantitative measurements of workload and sleep were collected via FitBit devices from a subset of 58 janitors. Regression techniques were implemented to determine risk. RESULTS: Thirty-seven percent reported increased workload over the study period Adjusted analyses indicated a significant effect of change in workload (RR: 1.94; 95%CI: 1.40-2.70) and sleep hours (RR: 2.21; 95%CI: 1.33-3.66) on occupational injury. Among those with sleep disturbances, injury risk was greater for those with less than five, versus more than five, days of moderate to vigorous physical activity; RR: 2.77; 95%CI: 1.16-6.59). CONCLUSIONS: Increased workload and sleep disturbances increased the risk of injury, suggesting employers should address these factors to mitigate occupational injuries

Jelsma JGM, Renaud LR, Huysmans MA, Coffeng JK, Loyen A, van Nassau F, et al. The Dynamic Work study: study protocol of a cluster randomized controlled trial of an occupational health intervention aimed at reducing sitting time in office workers. BMC Public Health. 2019; 19(1):188.

<https://doi.org/10.1186/s12889-019-6467-0> [open access]

Abstract: Background Large volumes of sitting time have been associated with multiple health risks. To reduce sitting time of office workers working for a Dutch insurance company, the Dynamic Work intervention was developed. The primary objective of this paper is to describe the study protocol of the Dynamic Work study, which aims to evaluate if this multicomponent intervention is (cost-)effective in reducing total sitting time on the short-term (≈ 3 months) and longer-term (≈ 12 months) compared to usual practice

Kruse D, Schur L, Rogers S, and Ameri M. Why do workers with disabilities earn less? Occupational job requirements and disability discrimination. British Journal of Industrial Relations. 2018; 56(4):798-834.

<https://doi.org/10.1111/bjir.12257>

Manjourides J and Dennerlein JT. Testing the associations between leading and lagging indicators in a contractor safety pre-qualification database. American Journal of Industrial Medicine. 2019; [epub ahead of print].

<https://doi.org/10.1002/ajim.22951>

Abstract: BACKGROUND: Safety prequalification assessing contractors' safety management systems and safety programs lack validation in predicting construction worker injuries. METHODS: Safety assessments of leading indicators from 2198 construction contractors, including Safety Management Systems (SMS), Safety Programs (e.g., falls, hearing protection), and Special Elements (drug testing, return to work) scales as well as the history of citations from the Occupational Safety and Health Administration (OSHA) were compared to contractors' lagging indicators of recordable injury case rates (RC) and rates of injuries involving days away, restricted, or transferred (DART). RESULTS: Increased SMS scores were related to lower injury rates. Each one-point increase in SMS values was associated with 34% reduced odds of a recordable case rate greater than zero (Odds ratio (OR): 0.66, 95% Confidence Interval (CI): (0.57, 0.79)), and a 9% reduced recordable case rate, if one occurs (Risk Ratio (RR): 0.91, 95% CI: (0.88, 0.94)). A one-point increase in SMS was associated with 28% reduced odds of a DART (OR = 0.72, 95%CI (0.56, 0.91)), and 9% reduced DART rate, if one occurs (RR = 0.91, 95%CI (0.87, 0.95)). Safety programs did not show consistent associations with injury outcomes. Having additional Special Elements related to drug and alcohol programs was associated with lower injury rates while the Special Element related to return to work showed no consistent associations with injury. Having more OSHA Citations was associated with lower injury rates for companies with injuries. CONCLUSIONS: These results support pre-qualification methods based on SMS and suggest the need for safety management systems in contractors

Masci F, Rosecrance J, Mixco A, Cortinovis I, Calcante A, Mandic-Rajcevic S, et al. Personal and occupational factors contributing to biomechanical risk of the distal upper limb among dairy workers in the Lombardy region of Italy. *Applied Ergonomics*. 2019; [epub ahead of print].

<https://doi.org/10.1016/j.apergo.2018.12.013>

Abstract: Biomechanical overload in the wrist flexor and extensor muscles, together with awkward hand positions during work activities, can result in occupational wrist and hand disorders. Dairy workers, specifically those that work in the milking parlor, are exposed to highly repetitive and forceful exertions of the upper limb throughout their work shift. There are very few studies that have investigated the determinants that contribute to the risk of distal upper limb musculoskeletal disorders among dairy workers. The purpose of the present study was to identify the variables affecting the biomechanical overload of the distal upper limb among milking parlor workers, define risk profiles, and propose possible interventions to reduce the high physical loads to the distal upper limb during milking activities. Forty male workers from the three most common milking parlor systems in Lombardy Italy were recruited to participate in this study. Multiple correspondence analysis of personal characteristics and occupational risk factors, followed by cluster analysis, led to the identification of three distinct groups of workers. Low, medium and high risk profiles were assigned to each group based on the risk assessments performed using the Strain Index and electromyography of the distal upper limb. The main risk determinants were workstation characteristics, work organization and milking routine. A well-organized milking routine, milking cluster weight below 2.4kg or the use of supporting arms for the milking cluster may reduce the risk of biomechanical overload

Milloy J. Curb Heroin In Plants (C.H.I.P.): revisiting a mid-1970s intervention into workplace heroin addiction created and led by Detroit autoworkers. *American Journal of Public Health*. 2019; 109(3):406-411.

<https://doi.org/10.2105/AJPH.2018.304858>

Abstract: This article analyzes archival records to revisit Curb Heroin In Plants (C.H.I.P.), a public health intervention focusing on drug dependence that was created and led by Detroit, Michigan, autoworkers during the mid-1970s. Responding to widespread heroin use in Detroit auto plants, C.H.I.P. combined methadone maintenance with counseling on and off the job to treat heroin dependence while supporting autoworkers in continuing in employment and family life. Although C.H.I.P. ultimately failed, it was a promising attempt to transcend medical/punitive approaches and treat those with substance use disorder in a nonstigmatizing way, with attention to the workplace dimensions of their disorder and recovery. I argue that revisiting C.H.I.P. speaks to current public health debates about the intersection between the workplace and harmful drug use and how to create effective interventions and policies that are mindful of this intersection. For historians, C.H.I.P. is a valuable example of the crucial role of workplace actors in the early war on drugs and of an early methadone

program that was not strongly concerned with crime reduction but incorporated social externalities (specifically job performance) to measure success

Petitta L, Probst TM, Ghezzi V, and Barbaranelli C. Cognitive failures in response to emotional contagion: their effects on workplace accidents. *Accident Analysis and Prevention*. 2019; 125:165-173.

<https://doi.org/10.1016/j.aap.2019.01.018>

Rye M, Friberg O, and Skre I. Attitudes of mental health providers towards adoption of evidence-based interventions: relationship to workplace, staff roles and social and psychological factors at work. *BMC Health Services Research*. 2019; 19(1):110.

<https://doi.org/10.1186/s12913-019-3933-4> [open access]

Abstract: BACKGROUND: Gaining insight into factors influencing the adoption of evidence-based interventions (EBI) is essential to ensuring their sustainability in the mental healthcare setting. This article describes 1) differences between professional staff roles in attitudes towards EBI and 2) individual and organizational predictors of attitudes towards adopting EBI. METHODS: The participants were psychologists and psychiatric nurses (N = 792). Student t-tests were used to investigate group differences of global attitude scores on the Evidence-based Practice Attitude Scale-36 (EBPAS-36). A confirmatory factor analysis (CFA) of the EBPAS-36 measurement model, and a principal component analysis (PCA) of the factor scores were used to obtain attitudinal components for the subsequent hierarchical regression analyses. RESULTS: Three second-order attitudinal components were retained and named: professional concern, attitudes related to work conditions and requirements, and attitudes related to fit and preferences. Nurses' global attitudinal scores were more positive than those of psychologists, while clinicians had less positive global attitudinal scores than non-clinicians. Hierarchical regression analysis showed that provider demographic, social and psychological factors in the workplace and staff role predicted attitudes towards adopting EBI, e.g. male gender, older age and working in private practice predicted more negative global attitudes, while working in academia, experiencing social support from colleagues and empowering leadership predicted more positive global attitudes to adopt EBI. The prediction outcomes for the specific attitudinal components are presented, as well. CONCLUSION: The findings suggest that implementation efforts may benefit from being tailored to the different needs and values of the affected professionals, including the role of the context they operate within. Implications with a special emphasis on training efforts and organizational development are discussed

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