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May 31, 2019

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***Labreche F, Kim J, Song C, Pahwa M, Ge CB, Arrandale VH, et al. The current burden of cancer attributable to occupational exposures in Canada. *Preventative Medicine*. 2019; 122:128-139.**

<https://doi.org/10.1016/j.ypmed.2019.03.016>

Abstract: Exposure to occupational carcinogens is often overlooked as a contributor to the burden of cancer. To estimate the proportion of cancer cases attributable to occupational exposure in Canada in 2011, exposure prevalence and levels of 44 carcinogens were informed by data from the Canadian carcinogen exposure surveillance project (CAREX Canada). These were used with Canadian Census (between 1961 and 2011) and Labour Force Survey (annual surveys between 1976 and 2013) data to estimate the number of workers ever exposed to occupational carcinogens. Risk estimates of the association between each carcinogen and cancer site were selected mainly from published literature reviews. Population attributable risks were estimated using Levin's equation and applied to the 2011 cancer statistics from the Canadian Cancer Registry. It is estimated that 15.5 million Canadians alive in 2011 were exposed, during at least one year between 1961 and 2001, to at least one carcinogen in the workplace. Overall, we estimated that in 2011, between 3.9% (95% CI: 3.1%-8.1%) and 4.2% (95% CI: 3.3%-8.7%) of all incident cases of cancer were due to occupational exposure, corresponding to lower and upper numbers of 7700-21,800 cases. Five of the cancer sites - mesothelioma, non-melanoma skin cancer, lung, female breast, and urinary bladder - account for a total of 7600 to 21,200 cancers attributable to occupational exposures such as solar radiation, asbestos, diesel engine exhaust, crystalline silica, and night shift work. Our study highlights cancer sites and occupational exposures that need

recognition and efforts by all stakeholders to avoid preventable cancers in the future

Atarod M, Mirzamohammadi E, Ghandehari H, Mehrdad R, and Izadi N. Predictive factors for return to work after lumbar discectomy. International Journal of Occupational Safety and Ergonomics. 2019; [epub ahead of print].

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<https://doi.org/10.1080/10803548.2019.1600890>

Abstract: Background. Lower back pain (LBP) is one of the most common complaints leading to disability and work absence. This study was performed to determine the rate and contributing factors of return to work in the postoperative phase after lumbar discectomy. Methods. This cohort study was performed among 142 patients attending the orthopedics spine clinic of a teaching hospital during 2016. Initially, the demographic and occupational characteristics and Oswestry disability index (ODI) were fulfilled, and patients were followed with regard to time off, work return and type of job after surgery. Results. 113 participants (79.5%) returned to work in 3 months. Male gender, higher literacy, non-manual job, less physical activity, non-smoking, formal work agreement, lower working hours and higher income were associated with return to previous work. Also, shorter preoperative duration of LBP, longer hospital stay, lower severity of LBP, lower ODI score and poor perceived prognosis of return to work were associated with return to previous work. Conclusions. Return to work after discectomy is seen in more than two-thirds of patients and is related to factors such as pain intensity and body mass index. However, return to previous versus modified job is a multifactorial issue

Bolibar M, Verd JM, and Barranco O. The downward spiral of youth unemployment: an approach considering social networks and family background. Work, Employment and Society. 2019; 33(3):401-421.

<https://doi.org/10.1177/0950017018822918>

Feddersen H, Mechlenborg Kristiansen T., Tanggaard AP, Horslev-Petersen K, and Primdahl J. Juggling identities of rheumatoid arthritis, motherhood and paid work - a grounded theory study. Disability and Rehabilitation. 2019; 41(13):1536-1544.

<https://doi.org/10.1080/09638288.2018.1433723>

Abstract: PURPOSE: To explore how women with rheumatoid arthritis manage their illness, motherhood, and work life. METHODS: A constructivist, grounded theory approach based on individual interviews and participant observations with 20 women with rheumatoid arthritis who participated in work life and had children living at home or were pregnant. After initial and focused coding Goffman's concepts of social identity were applied. RESULTS: A core category: "Juggling meaningful identities" and three conceptual categories were developed: (1) Work life as the strongest identity marker; (2) Motherhood: a two-sided act; (3) Living

with rheumatoid arthritis as an identity? Paid work, motherhood, and illness are linked to the women's social identities. The women construct and change their identities in interactions with children, partners, other parents, colleagues, and employers. CONCLUSION: The women attribute the highest priority to their professional identity, spending the majority of their time and energy in an effort to appear as "good stable workers". The disease is seen as a hindrance in this regard, and the illness identity is almost completely rejected. In motherhood, the women prioritize close interaction with their children, and deprioritize external activities. Extended outbreaks of the disease and issues regarding the children force the women to deprioritize working life. Implications for rehabilitation Juggling meaningful identities of rheumatoid arthritis, motherhood, and paid work challenge women in managing their everyday lives. Therefore, rehabilitation professionals should support individuals to develop new strategies to manage the challenges they experience regarding juggling motherhood and work ability. Work is a dominant identity marker for women with rheumatoid arthritis therefore, rehabilitation professionals have an important role to play in investigating possible ways for the individual to maintain employment or return to work. Living with rheumatoid arthritis and being a paid worker challenge women's role performance and thereby their identification as mothers. Therefore, rehabilitation professionals have to support the women and their families

Granter E, Wankhade P, McCann L, Hassard J, and Hyde P. Multiple dimensions of work intensity: ambulance work as edgework. *Work, Employment and Society*. 2018; 33(2):280-297.

<https://doi.org/10.1177/0950017018759207>

Hargreaves S, Rustage K, Nellums LB, McAlpine A, Pocock N, Devakumar D, et al. Occupational health outcomes among international migrant workers: a systematic review and meta-analysis. *Lancet Global Health*. 2019; [epub ahead of print].

[https://doi.org/10.1016/S2214-109X\(19\)30204-9](https://doi.org/10.1016/S2214-109X(19)30204-9)

Abstract: BACKGROUND: Globally, there are more than 150 million international migrant workers-individuals who are employed outside of their country of origin-comprising the largest international migrant group. A substantial number of migrants work in hazardous and exploitative environments, where they might be at considerable risk of injury and ill health. However, little data on occupational health outcomes of migrant workers exist, with which to inform global policy making and delivery of health services. METHODS: For this systematic review and meta-analysis, we searched Embase, MEDLINE, Ovid Global Health, and PsychINFO databases for primary research published between Jan 1, 2008, and Jan 24, 2018, reporting occupational health outcomes among international migrant workers (defined as individuals who are or have been employed outside their country of origin), without language or geographical restrictions. We excluded studies containing mixed cohorts of migrants and native workers in which migrant data could not be disaggregated, and studies that did not explicitly

report migrant status. The main outcome was prevalence of occupational health outcomes (defined as any injury, mortality, or physical or psychiatric morbidity due to an individual's work or workplace environment) among international migrant workers. Summary estimates were calculated using random-effects models. The study protocol has been registered with PROSPERO, number CRD42018099465. FINDINGS: Of the 1218 studies identified by our search, 36 studies were included in our systematic review, and 18 studies were included in the meta-analysis. The systematic review included occupational health outcomes for 12 168 international migrant workers employed in 13 countries and territories, mostly employed in unskilled manual labour. Migrant workers originated from 25 low-income and middle-income countries, and worked in the following sectors: agriculture; domestic, retail, and service sectors; construction and trade; and manufacturing and processing. Migrant workers had various psychiatric and physical morbidities, and workplace accidents and injuries were relatively common. In the meta-analysis, among 7260 international migrant workers, the pooled prevalence of having at least one occupational morbidity was 47% (95% CI 29-64; I(2)=99.70%). Among 3890 migrant workers, the prevalence of having at least one injury or accident, including falls from heights, fractures and dislocations, ocular injuries, and cuts was 22% (7-37; I(2)=99.35%). INTERPRETATION: International migrant workers are at considerable risk of work-related ill health and injury, and their health needs are critically overlooked in research and policy. Governments, policy makers, and businesses must enforce and improve occupational health and safety measures, which should be accompanied by accessible, affordable, and appropriate health care and insurance coverage to meet the care needs of this important working population. FUNDING: Wellcome Trust

Hudon A, Lippel K, and MacEachen E. Mapping first-line health care providers' roles, practices, and impacts on care for workers with compensable musculoskeletal disorders in four jurisdictions: a critical interpretive synthesis. American Journal of Industrial Medicine. 2019; [epub ahead of print].

<https://doi.org/10.1002/ajim.22972>

Abstract: BACKGROUND: First-line health care providers are the primary access point for workers' benefits. However, little is known about their impact on quality of care and return-to-work. Our objective was to critically compare literature on the practices of first-line providers for workers with musculoskeletal injuries in Ontario and Quebec (Canada), Washington State (United States), and Victoria (Australia). METHODS: A critical interpretive synthesis of peer-reviewed scientific literature was conducted. The search across six databases yielded 59 relevant publications that were critically appraised. RESULTS: Three themes emerged: 1) how policies about first-line health care providers' modulate worker access to care, 2) how these providers' roles, practices, and training shape disability management, and 3) how the quality of care and disability outcomes are evaluated. CONCLUSIONS: First-line health care providers have a critical

influence on workers' trajectories of care. A focus on their role while taking the complexity of the context into account will help orient future policy changes

Imes CC and Chasens ER. Rotating shifts negatively impacts health and wellness among intensive care nurses. Workplace Health & Safety. 2019; 67(5):241-249.

<https://doi.org/10.1177/2165079918820866>

Abstract: The impact of shift work on sleep and health has been examined in the past, but most studies utilized cross-sectional designs relying on between-subject differences. The purpose this study was to examine the within-subject differences in self-report measures of health and wellness among a group of nurses engaged in rotating shifts. Patient-Reported Outcomes Measurement Information System (PROMIS) measures, collected post-day and post-night shift, were used to assess health, sleep disturbances and sleep-related impairment, fatigue, emotional distress (anger), satisfaction with social roles outside of work, and applied cognitive abilities. Among the sample of 23 White, mostly female (91.3%) nurses, all PROMIS measures were worse indicting lower health and wellness after working night shifts compare to after working day shifts (p values from .167 to < .001). During both time points of assessment, sleep-related impairment was highly correlated with greater emotional distress, greater fatigue, and worse memory and concentration. Study findings support prior studies that shift work can negatively impact health and wellness

Johnsen TL, Eriksen HR, Baste V, Indahl A, Odeen M, and Tveito TH. Effect of reassuring information about musculoskeletal and mental health complaints at the workplace: a cluster randomized trial of the atWork intervention. Journal of Occupational Rehabilitation. 2019; 29(2):274-285.

<https://doi.org/10.1007/s10926-018-9786-6>

Abstract: Purpose The purpose of this study was to investigate the possible difference between the Modified atWork intervention (MAW) and the Original atWork intervention (OAW) on sick leave and other health related outcomes. atWork is a group intervention using the workplace as an arena for distribution of evidence-based knowledge about musculoskeletal and mental health complaints. Methods A cluster randomized controlled trial with 93 kindergartens, comprising a total of 1011 employees, was conducted. Kindergartens were stratified by county and size and randomly allocated to MAW (45 clusters, 324 respondents) or OAW (48 clusters, 313 respondents). The randomization and intervention allocation processes were concealed. There was no blinding to group allocation. Primary outcome was register data on sick leave at cluster level. Secondary outcomes were health complaints, job satisfaction, social support, coping, and beliefs about musculoskeletal and mental health complaints, measured at the individual level. Results The MAW group reduced sick leave by 5.7% during the intervention year, while the OAW group had a 7.5% increase. Overall, the changes were not statistically significant, and no difference was detected between groups, based on 45 and 47 kindergartens. Compared to the OAW

group, the MAW group had a smaller reduction for two of the statements concerning faulty beliefs about back pain, but believed less in the hereditary nature of depression. Conclusions The MAW did not have a different effect on sick leave at cluster level compared to the OAW. Trial registration <https://Clinicaltrials.gov/> : NCT02396797. Registered March 23th, 2015

Koensgen N, Rombey T, Allers K, Mathes T, Hoffmann F, and Pieper D. Comparison of non-Cochrane systematic reviews and their published protocols: differences occurred frequently but were seldom explained. Journal of Clinical Epidemiology. 2019; 110(34-41).

<https://doi.org/10.1016/j.jclinepi.2019.02.012>

Abstract: OBJECTIVE: To quantify the prevalence of differences in the reported methods between non-Cochrane systematic reviews (SRs) and their protocols and the extent to which these were reported and explained. STUDY DESIGN AND SETTING: We searched MEDLINE and Embase to identify protocols of non-Cochrane SRs published in 2012 and 2013. Using various methods, we searched for their corresponding SRs up to December 2016. The SRs and protocols were compared with respect to the methods-related "Preferred Reporting Items for Systematic review and Meta-Analysis Protocols" (PRISMA-P). RESULTS: We included 80 SRs and their protocols. Almost all SRs (92.5%) differed from their protocols in at least one of the methods-related PRISMA-P items (no. 7-17) and their subcategories. Half the SRs (48.8%) had a major difference in at least one item. On average, each SR differed from its protocol in 3.2 items, of which one comprised a major difference. Only 10% of all differences were reported in the SR, two-thirds with an explanation (7.0% in total). CONCLUSION: The reporting quality and transparency of non-Cochrane SRs requires further improvement. Authors should report and explain all important changes made to the protocol in the SR publication. The updated PRISMA statement should include guidance regarding this matter

Ministry of Labour. Ontario at work: Ministry of Labour 1919-2019. 2019; Toronto, ServiceOntario Publications:

Momsen AH, Stapelfeldt CM, Rosbjerg R, Escorpizo R, Labriola M, and Bjerrum M. International classification of functioning, disability and health in vocational rehabilitation: a scoping review of the state of the field. Journal of Occupational Rehabilitation. 2019; 29(2):241-273.

<https://doi.org/10.1007/s10926-018-9788-4>

Abstract: Purpose The purposes of this study were to provide an outline of the existing literature on operationalization of the International Classification of Functioning, Disability and Health (ICF) within vocational rehabilitation (VR) and to explore the ICF utility within VR. Methods The process was undertaken in five stages according to a framework of scoping review. Screening and extraction of data were done by two independent reviewers, and data was summarized according to content analysis. Results Fifty papers (25 qualitative and 25 quantitative) were included. The operationalization of the ICF was described in

four different ways: In total 18 (36%) papers described use of the ICF for structuring information, 8 (15%) for linking information to ICF, 12 (24%) for analysis of results, and 12 (24%) for development of a model. In total 15 (29%) papers described VR interventions involving stakeholders, whereas 32 (62%) were reviews. Forty of the papers described all the ICF components. Conclusions The review revealed use of the ICF within the field VR in 50 papers, and in various settings. The ICF framework was most often operationalized for structuring or linking information of functioning. A majority of papers were reviews and involved researchers only, whereas different stakeholders and VR professionals were involved in the interventions. In 40 papers all the ICF components were described, and the ICF was considered a useful tool to inform the VR professionals assessment of functioning. However, more research within VR is needed to standardize and ease the use of the ICF

Nahar VK, Wilkerson AH, Martin B, Boyas JF, Ford MA, Bentley JP, et al. Sun protection behaviors of state park workers in the southeastern USA. *Annals of Work Exposures and Health*. 2019; 63(5):521-532.

<https://doi.org/10.1093/annweh/wxz019>

Abstract: BACKGROUND: Due to the nature of their work, state park workers receive substantial exposure to sunlight, putting them at an increased risk of developing skin cancer. Increased use of sun protection behaviors can reduce this risk. OBJECTIVES: Using the health belief model (HBM) as a theoretical framework, the purpose of this study was to assess factors associated with sun protection behaviors among state-park workers. METHODS: In this cross-sectional study, a convenience sample of participants were recruited from 23 state parks in the Southeastern USA to complete a self-administered questionnaire based on the constructs of the HBM. RESULTS: The sample comprised 310 state park workers. The majority of participants were non-Hispanic White (61.6%), male (63.5%), and were aged 39.56 (+/-13.97) years on average. The average duration of sun exposure during the workday was reported as 3.51 h (+/-1.88). Nearly 12% of the participants reported that their workplace had a sun-safety policy and ~10% reported receiving sun-safety training at their workplace. The majority of participants reported that they did not sufficiently use sun protection methods. Factors associated with sun protection behaviors included the HBM constructs of perceived benefits outweighing perceived barriers (standardized coefficient = 0.210, P = 0.001), self-efficacy (standardized coefficient = 0.333, P < 0.001), and cues to action (standardized coefficient = 0.179, P = 0.004). CONCLUSION: Future research should explore the barriers to adopting and enforcing sun-safety policies in the workplace. HBM appears to be efficacious in explaining sun protection behaviors among state park workers. HBM constructs should be considered in future interventions aimed at increasing sun protection behaviors in this population

Okazaki E, Nishi D, Susukida R, Inoue A, Shimazu A, and Tsutsumi A. Association between working hours, work engagement, and work

productivity in employees: a cross-sectional study of the Japanese Study of Health, Occupation, and Psychosocial Factors Relates Equity. Journal of Occupational Health. 2019; 61(2):182-188.

<https://doi.org/10.1002/1348-9585.12023>

Abstract: OBJECTIVES: The aims of the study were to investigate the association between working hours, work engagement, and work productivity, and to examine if work engagement moderates the influence of working hours on work productivity. METHODS: We used cross-sectional data from the Japanese occupational cohort survey, which involved 2093 employees in a manufacturing industry. Working hours were self-reported by the study participants. Work productivity was assessed with absolute presenteeism based on the scale of the validated Japanese version of World Health Organization Health and Work Performance Questionnaire (WHO-HPQ). Work engagement was assessed with the Nine-item Utrecht work Engagement Scale (UWES-9). Univariate and multivariable regression analyses were conducted to examine the association of working hours and work engagement with work productivity. We also carried out stratified multivariable regression analysis separately for those with high-work engagement and those with low-work engagement. RESULTS: Working >40 to 50 hours per week and >50 hours per week were significantly positively associated with work productivity in univariate analysis. However, the significant association no longer held after adjusting for work engagement. Work engagement was positively associated with work productivity even after controlling for potential confounders. Working hours were not significantly associated with work productivity among those with high-work engagement or among those with low-work engagement. CONCLUSIONS: Working hours did not have any significant associations with work productivity when taking work engagement into account. Work engagement did not moderate the influence of working hours on work productivity, though it attenuated the relationship between working hours and work productivity

Stefanovitch-Lawbuary N, Amirfeyz R, Lovell R, and Bannister G. Reliability and responsiveness of patient-reported outcome measures of neck disability to physical therapy: comparison of the Copenhagen, Northwick Park, and Neck Bournemouth questionnaires and the Neck Disability Index. Journal of Manipulative and Physiological Therapeutics. 2019; 42(2):104-107.

<https://doi.org/10.1016/j.jmpt.2019.03.007>

Abstract: OBJECTIVE: The purpose of this study was to identify the external and internal reliability and responsiveness of the validated patient-reported outcome measures (PROMs) of neck pain to a standardized regimen of physiotherapy administered acutely after mild whiplash injury using the clinically significant improvement components of the Patient Global Impression of Change (PGIC) as the outcome measure. METHODS: Eighty-six patients with neck pain alone were referred for physiotherapy within 2 weeks of whiplash injury. They completed the Copenhagen, Northwick Park (NP), and Neck Bournemouth (NBQ)

questionnaires and the Neck Disability Index (NDI) before starting and after treatment when they also completed the PGIC. Treatment comprised deep soft tissue massage, myofascial releases, muscle energy techniques, joint articulation and manipulation techniques, and a home exercise program. The duration of treatment was between 3 and 6 weeks. A PGIC of 6 or 7 was considered to be clinically significant improvement. RESULTS: The external reliability of the PROMs was >0.7 and internal >0.87. All components of the PROMs contributed to the final score except headache in the Copenhagen and upper-limb dysesthesia in the NP. The most reliable questionnaire was the NBQ, which was significantly more responsive than the Copenhagen (P = .008). The NBQ was slightly more responsive than the NDI and NP. The NBQ and NDI were successfully completed more frequently than the NP and Copenhagen. CONCLUSION: The NP, NDI, and NBQ are all reliable and responsive measures of change after physiotherapy for neck pain after acute whiplash injury

Wallin S and Fjellman-Wiklund A. Act with respect: views of supportive actions for older workers after completion of comprehensive vocational rehabilitation services. Work. 2019; 62(4):585-598.

<https://doi.org/10.3233/WOR-192896>

Abstract: BACKGROUND: The number of older workers will expand during the next decades. Older workers have more long-term health problems and related limitations. OBJECTIVE: This study examined supportive actions provided in occupational healthcare services to older workers after vocational rehabilitation. An additional purpose was to explore occupational healthcare professionals' views on how to realize and improve adequate support activities. METHODS: Qualitative and quantitative methods were used, including a postal questionnaire and focus group discussions. Sixty-seven occupational healthcare service units participated in the postal questionnaire. Eight occupational healthcare professionals participated in two focus group discussions. The qualitative data was analyzed using qualitative content analysis. RESULTS: The qualitative analysis resulted in one theme (Act with respect), and four categories (Need for cooperation, Collaborative resources of involved stakeholders, Individual needs for support, and Gender as homogenous and separate groups). Quantitative results revealed that the workers' initiative strongly influenced the support carried out. Recommendations from the rehabilitation clinic were almost always considered when deciding on supportive actions. Focus group discussions brought up gender differences especially highlighted in the category Gender as homogenous and separate groups. CONCLUSIONS: Appropriate support of older workers requires cooperation between involved stakeholders, including occupational healthcare services. Provided support should be based on individual needs, but a mutual practice of determining needed support is requested

Yang S, Lu J, Zeng J, Wang L, and Li Y. Prevalence and risk factors of work-related musculoskeletal disorders among intensive care unit nurses

in China. *Workplace Health & Safety*. 2019; 67(6):275-287.

<https://doi.org/10.1177/2165079918809107>

Abstract: This cross-sectional study investigated the prevalence and risk factors of work-related musculoskeletal disorders among intensive care nurses in the Hunan Province of China. Nurses working in mixed intensive care units of 20 tertiary hospitals in this province participated in an online survey regarding work-related musculoskeletal injuries. The seven-part questionnaire included basic demographics; job and workplace characteristics; risk perception; physical, psychosocial, and workplace organizational factors; and musculoskeletal symptoms. The response rate was 70.7% (702 of 993 nurses). Approximately 97% of the respondents reported experiencing at least one work-related musculoskeletal disorder within the previous year. Low back pain was the most commonly reported musculoskeletal disorder (80.1%), followed by neck (78.6%) and shoulder pain (70.4%). The multivariate logistic regression analysis indicated that work-related musculoskeletal disorders were significantly associated with female gender (odds ratio [OR] = 0.115), unmarried status (OR = 0.136), a greater perception of risk (OR = 2.352), and lack of a safe work environment (OR = 1.056). These findings underscore the need for nurses and managers to reinforce risk awareness, improve physical and psychosocial working conditions, and promote a safer work environment

*IWH authored publication.