

IWH Research Alert
May 3, 2019

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Brimblecombe S and McClanahan S. Improving gender outcomes in social security retirement systems. *Social Policy & Administration*. 2019; 53(3):327-342.
<http://dx.doi.org/10.1111/spol.12476>

Bush D, Chang C, Rauscher K, and Myers D. Essential elements for effective safety and health education in postsecondary construction career technical education. *New Solutions*. 2019; 29(1):53-75.
<http://dx.doi.org/10.1177/1048291119830657>

Abstract: Because Career Technical Education (CTE) programs at the community/technical college level are among the few places new construction workers receive training or preparation, they are an important vehicle for educating new and young workers about occupational health and safety (OSH). We developed recommendations for (1) OSH "core competencies" that all postsecondary construction students should achieve and (2) "essential elements" for OSH education in construction training programs. Based on a review of the literature, subject matter expert focus groups, and iterative engagement with an expert advisory group, we identified fourteen core competencies and a list of essential supporting elements at the school, program, and instructor

levels. Knowledge and recognition of the importance of effective safety and health management systems served as the foundation for elements and competencies. Findings provide an important starting point for systematically improving the preparation of construction CTE students that can help keep them safe on the job

Castillo APD. Training for workers and safety representatives on manufactured nanomaterials. *New Solutions*. 2019; 29(1):36-52. <http://dx.doi.org/10.1177/1048291119830085>

Abstract: Although nanotechnologies are increasingly present in numerous sectors of the economy, training resources available to workers exposed to them are still rare. In the European Union (EU), some initiatives exist that inform workers about exposure and risks, but they lack two key dimensions: the involvement of workers themselves in designing and implementing training materials and the key role played by safety representatives in improving occupational health and safety in EU member states. Making workers actors of their own training, rather than recipients of it, and empowering them, so that they can collectively question unsafe situations and ask for changes in their working conditions, is how training can positively impact their health and safety. This article describes a training package (materials, infographics, interactive web applet) designed specifically to achieve this objective. Developed under the NanoDiode project, it focuses on six key themes: types of nanomaterials, uses at work, risks, presence in the workplace, exposure, and experience sharing

Dorsett P and McLennan V. Exploring the 'status quo' in vocational rehabilitation and employment outcomes following spinal cord injury. *Journal of Vocational Rehabilitation*. 2019; 50(2):131-139. <http://dx.doi.org/10.3233/JVR-180995>

Dubbelt L, Demerouti E, and Rispens S. The value of job crafting for work engagement, task performance, and career satisfaction: longitudinal and quasi-experimental evidence. *European Journal of Work and Organizational Psychology*. 2019; 28(3):300-314. <http://dx.doi.org/10.1080/1359432X.2019.1576632>

Friedman LS, Almborg KS, and Cohen RA. Injuries associated with long working hours among employees in the US mining industry: risk factors and adverse outcomes. Occupational and Environmental Medicine. 2019; [epub ahead of print].

<http://dx.doi.org/10.1136/oemed-2018-105558> [open access]

Abstract: OBJECTIVES: The mining industry is increasingly adopting extended workdays of 10-12 hour shifts. Studies demonstrate that long work hours are associated with psychomotor impairments caused by fatigue and an increased risk of injury. However, studies involving miners remain limited. This analysis aimed to identify risk factors associated with long working hour injuries and to determine if long working hour incidents were associated with being killed or incidents involving multiple injured workers. METHODS: Data from US Mine Safety and Health Administration Part 50 reports, 1983-2015, were used to identify long working hour injuries, which were defined as incidents occurring nine or more hours after the start of a shift. RESULTS: A total of 52 206 injuries (9.6%) occurred during long working hours. The proportion of long working hour injuries increased from 5.5% of all injuries in 1983 to its peak in 2015 at 13.9% ($p < 0.001$). Risk factors associated with long working hour injuries included irregular shift starts, being newly employed, employment by a contractor, metal/non-metal operations and mines with <100 employees. In two separate adjusted models, long working hour injuries were associated with a higher odds of death (adjusted OR [aOR]=1.32; 95% CI 1.18 to 1.48) and single incidents resulting in two or more workers injured (aOR=1.73; 95% CI 1.58 to 1.89). CONCLUSIONS: Long working hour injuries were associated with a lack of routine, being new at the mine and specific mining activities. An international shift towards using contract labour and extended workdays indicates that injuries during long working hours will likely continue to grow as a problem in the mining industry

Jackson JA, Olsson D, Burdorf A, Punnett L, Jarvholm B, and Wahlstrom J. Occupational biomechanical risk factors for radial nerve entrapment in a 13-year prospective study among male construction workers. Occupational and Environmental Medicine. 2019; 76(5):326-331.

<http://dx.doi.org/10.1136/oemed-2018-105311> [open access]

Abstract: OBJECTIVES: The aim was to assess the association

between occupational biomechanical exposure and the occurrence of radial nerve entrapment (RNE) in construction workers over a 13-year follow-up period. **METHODS:** A cohort of 229 707 male construction workers who participated in a national occupational health surveillance programme (1971-1993) was examined prospectively (2001-2013) for RNE. Height, weight, age, smoking status and job title (construction trade) were obtained on health examination. RNE case status was defined by surgical release of RNE, with data from the Swedish national registry for out-patient surgery records. A job exposure matrix was developed, and biomechanical exposure estimates were assigned according to job title. Highly correlated exposures were summed into biomechanical exposure scores. Negative binomial models were used to estimate the relative risks (RR) (incidence rate ratios) of RNE surgical release for the biomechanical factors and exposure sum scores. Predicted incidence was assessed for each exposure score modelled as a continuous variable to assess exposure-response relationships. **RESULTS:** The total incidence rate of surgically treated RNE over the 13-year observation period was 3.53 cases per 100 000 person-years. There were 92 cases with occupational information. Increased risk for RNE was seen in workers with elevated hand-grip forces (RR=1.79, 95% CI 0.97 to 3.28) and exposure to hand-arm vibration (RR=1.47, 95% CI 1.08 to 2.00). **CONCLUSIONS:** Occupational exposure to forceful handgrip work and vibration increased the risk for surgical treatment of RNE

Knight C, Patterson M, and Dawson J. Work engagement interventions can be effective: a systematic review. European Journal of Work and Organizational Psychology. 2019; 28(3):348-372.

<http://dx.doi.org/10.1080/1359432X.2019.1588887>

Lalic S, Bell JS, Gyllensten H, Gisev N, Friberg E, Ilomaki J, Sluggett JK, Mittendorfer-Rutz E, and Alexanderson K. Trajectories of sickness absence and disability pension before and after opioid initiation for noncancer pain: a 10-year population-based study. Pain. 2019; 160(5):1224-1233.

<http://dx.doi.org/10.1097/j.pain.0000000000001500>

Abstract: Chronic noncancer pain is a leading cause of sickness

absence (SA) and disability pension (DP). The objectives of this study were to identify trajectories of SA/DP before and after strong and weak opioid initiation for noncancer pain and the factors associated with these trajectories. A longitudinal population-based study of 201,641 people (24-59 years) without cancer who initiated opioid analgesics in 2009 in Sweden was conducted. Trajectories of net annual SA/DP days in the 5 years before/after opioid initiation were estimated with group-based trajectory modelling. Multinomial logistic regression was used to estimate odds ratios (ORs) and 95% confidence intervals (CIs) for factors associated with trajectory groups. Among the 6.9% of people initiating strong opioids, 12.5% had persistent high SA/DP (estimated 320 days/year) before and after opioid initiation and 72.9% had persistent low/minimum SA/DP (estimated 30 days/year). Approximately 8.6% of people had increasing SA/DP, and 6.1% had decreasing SA/DP after opioid initiation, although this seemed to reflect continuation of preinitiation patterns. Trajectories were similar at lower SA/DP days/year among those initiating weak opioids. Persistent high SA/DP among strong opioid initiators were associated with ≥ 5 comorbidities (OR = 8.72, 95% CI 5.61-13.56), ≤ 9 years of education (OR = 5.83, 95% CI 4.84-7.03), and previous use of antidepressants (OR = 4.57, 95% CI 3.89-5.37) and antipsychotics (OR = 4.49, 95% CI 2.93-6.88). Three-quarters of people initiating opioids for noncancer pain had persistent low/minimum levels of SA/DP 5 years before and after initiation. Increasing and decreasing SA/DP after opioid initiation seemed to reflect a continuation of preinitiation patterns. Our findings highlight the complex range of sociodemographic and medication-related factors associated with persistent SA/DP

Moussavi SE, Zare M, Mahdjoub M, and Grunder O. Balancing high operator's workload through a new job rotation approach: application to an automotive assembly line. *International Journal of Industrial Ergonomics*. 2019; 71:136-144.

<http://dx.doi.org/10.1016/j.ergon.2019.03.003>

Nielsen K, Daniels K, Nayani R, Donaldson-Feilder E, and Lewis R. Out of mind, out of sight? Leading distributed workers to ensure health and safety. *Work and Stress*. 2019; 33(2):173-191.

<http://dx.doi.org/10.1080/02678373.2018.1509402>

OECD. OECD Employment outlook 2019: the future of work. Paris: OECD Publishing; 2019.

https://www.oecd-ilibrary.org/employment/oecd-employment-outlook_19991266

Kemmick Pintor J, Mitchell DC, and Schenker MB. Exploring the role of depression as a moderator of a workplace obesity intervention for Latino immigrant farmworkers. Journal of Immigrant and Minority Health. 2019; 21(2):383-392.

<http://dx.doi.org/10.1007/s10903-018-0743-4>

Abstract: We explored if and how depression moderated the treatment effect of Pasos Saludables, a successful pilot workplace obesity intervention for Latino immigrant farmworkers. The original randomized controlled study assigned 254 participants 2:1 to a 10-session educational intervention versus control. We assessed the relationship between change in BMI (primary outcome) and interaction of treatment allocation and baseline risk for depression. Baseline CES-D scores indicated that 27.3% of participants were at risk for depression. The interaction between treatment allocation and baseline risk for depression was significant ($p = 0.004$). In adjusted models among women, intervention participants with no indication of depression at baseline reduced their BMI by 0.77 on average (95% CI - 1.25, - 0.30) compared to controls. The reduction in BMI between the intervention group at risk for depression at baseline and either control was not significantly different from zero. Findings from our post-hoc, exploratory study indicate that depression may inhibit significant weight loss

Sprigg CA, Niven K, Dawson J, Farley S, and Armitage CJ. Witnessing workplace bullying and employee well-being: a two-wave field study. Journal of Occupational Health Psychology. 2019; 24(2):286-296.

<http://dx.doi.org/10.1037/ocp0000137>

Abstract: This article aims to (a) explore the impact of witnessing workplace bullying on emotional exhaustion, work-related anxiety, and work-related depression and (b) determine whether the resources of trait optimism, coworker support, and supportive supervisory style buffer the effects of witnessed bullying. In a two-wave study involving 194 employees, we found that witnessing

bullying undermined employees' well-being (work-related depression and anxiety) 6 months later, but only if the employees were low in optimism (personal resource) and lacked supervisor support (contextual resource). Strong coworker support weakened the relationship between witnessing bullying and well-being (emotional exhaustion and work-related depression). Our findings demonstrate for the first time some of the factors that protect against the impact of witnessing workplace bullying. Future research should focus on the development of workplace interventions that foster feelings of social support and optimism among employees. (PsycINFO Database Record (c) 2019 APA, all rights reserved)

Watanabe N, Horikoshi M, Shinmei I, Oe Y, Narisawa T, Kumachi M, Matsuoka Y, Hamazaki K, and Furukawa TA. Brief mindfulness-based stress management program for a better mental state in working populations: Happy Nurse Project: a randomized controlled trial. Journal of Affective Disorders. 2019; 251:186-194.

<http://dx.doi.org/10.1016/j.jad.2019.03.067>

Abstract: BACKGROUND: The efficacy of the mindfulness-based stress management program for maintaining a better mental state has not been examined among working populations. We aimed to explore the effectiveness of the brief mindfulness-based stress management program for hospital nurses. METHODS: In a multi-center randomized trial, 80 junior nurses working in hospitals were randomly allocated either to the brief mindfulness-based stress management program or psychoeducation using a leaflet. The program consisted of four 30min individual sessions conducted by trained senior nurses using a detailed manual. The primary outcome was the total score of the Hospital Anxiety and Depression Scale (HADS) at week 26. Secondary outcomes included presence of a major depressive episode; severity of depression, anxiety, insomnia, burnout, and presenteeism; utility scores; and adverse events up to 52 weeks. RESULTS: The mean HADS score of all the participants at baseline was 7.2. At 26 weeks, adjusted mean scores on the HADS score were 7.2 (95% confidence intervals: 5.9, 8.5) in the program group and 6.0 (4.8, 7.2) in the leaflet group, respectively. The coefficient of the group by time interaction was not statistically significant at -1.41 (-3.35, 0.54; P=0.156). No significant superiority or

inferiority was observed on the other outcomes. LIMITATIONS: We did not manage to recruit the number of participants we initially set out, although our post-hoc analyses showed that this did not lead to changes in our conclusions. CONCLUSIONS: The additive value of the brief mindfulness-based stress management program was not confirmed in mental state and self-evaluated work efficiency