

IWH Research Alert
December 7, 2018

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***Biswas A, Severin C, Smith P, Steenstra I, Robson L, and Amick B. Larger workplaces, people-oriented culture, and specific industry sectors are associated with co-occurring health protection and wellness activities. *International Journal of Environmental Research and Public Health*. 2018; 15(12):2739.**

<https://doi.org/10.3390/ijerph15122739> [open access]

Abstract: Employers are increasingly interested in offering workplace wellness programs in addition to occupational health and safety (OHS) activities to promote worker health, wellbeing, and productivity. Yet, there is a dearth of research on workplace factors that enable the implementation of OHS and wellness to inform the future integration of these activities in Canadian workplaces. This study explored workplace demographic factors associated with the co-implementation of OHS and wellness activities in a heterogeneous sample of Canadian workplaces. Using a cross-sectional survey of 1285 workplaces from 2011 to 2014, latent profiles of co-occurrent OHS and wellness activities were identified, and multinomial logistic regression was used to assess associations between workplace demographic factors and the profiles. Most workplaces (84%) demonstrated little co-occurrence of OHS and wellness activities. Highest co-occurrence was associated with large workplaces (odds ratio (OR) = 3.22, 95% confidence interval (CI) = 1.15–5.89), in the electrical and utilities sector (OR = 5.57, 95% CI = 2.24–8.35), and a high people-oriented culture (OR = 4.70, 95% CI = 1.59–5.26). Promoting integrated OHS and wellness approaches in medium to large workplaces, in select industries, and emphasizing a people-oriented culture were found to be important factors for implementing OHS and wellness in Canadian organizations. Informed by these findings, future

studies should understand the mechanisms to facilitate the integration of OHS and wellness in workplaces

Arewa AO, Theophilus S, Ifebugwu A, and Farrell P. Analysis of penalties imposed on organisations for breaching safety and health regulations in the United Kingdom. *Safety and Health at Work*. 2018; 9(4):388-397.

<https://doi.org/10.1016/j.shaw.2018.01.004> [open access]

Abstract: Background The study analyzes penalties imposed on organizations for breaching safety and health regulations. The research questions are as follows: what are the commonly breached safety and health regulations? How proportional are penalties imposed on organizations for breaching health and safety regulations in the United Kingdom? Methods The study employed sequential explanatory mixed research strategies for better understanding of health and safety penalties imposed on organizations. Actual health and safety convictions and penalties data for 10 years (2006 to 2016) were obtained through the United Kingdom Health and Safety Executive (HSE) public register for convictions. Overall, 2,217 health and safety cases were analyzed amounting to total fines of -ú37,179,916, in addition to other wide-ranging penalties. For thorough understanding, eight interviews were conducted with industry practitioners, lawyers, and HSE officials as part of the study qualitative data. Results Findings show that the Health and Safety at Work (HSW) Act accounted for 46% of all HSE prosecution cases in the last decade. This is nearly half of the total safety and health at work prosecutions. Moreover, there is widespread desire for organizations to comply with the HSW Act, but route fines are seen as burdensome and inimical to business growth. Conclusion A key deduction from the study reveal significant disproportionality concerning penalties imposed on organizations for breaching safety and health regulations. On aggregate, small companies tend to pay more for health and safety offenses in a ratio of 1:2 compared to large companies. The study also reveals that the HSW-áAct accounted for nearly half of the total safety and health at work prosecutions in the last decade

Brossoit RM, Crain TL, Leslie JJ, Hammer LB, Truxillo DM, and Bodner TE. The effects of sleep on workplace cognitive failure and safety. *Journal of Occupational Health Psychology*. 2018; [Epub ahead of print].

<https://doi.org/10.1037/ocp0000139>

Abstract: Healthy employee sleep is important for occupational safety, but the mechanisms that explain the relationships among sleep and safety-related behaviors remain unknown. We draw from Crain, Brossoit, and Fisher's (in press) work, nonwork, and sleep (WNS) framework and Barnes' (2012) model of sleep and self-regulation in organizations to investigate the influence of construction workers' self-reported sleep quantity (i.e., duration) and quality (i.e., feeling well-rest upon awakening, ability to fall asleep and remain asleep) on workplace cognitive failures (i.e., lapses in attention, memory, and action at work) and subsequent workplace safety behaviors (i.e., safety compliance and safety

participation) and reports of minor injuries. Construction workers from two public works agencies completed surveys at baseline, 6 months, and 12 months. Our results suggest that workers with more insomnia symptoms on average reported engaging in fewer required and voluntary safety behaviors and were at a greater risk for workplace injuries. These effects were mediated by workplace cognitive failures. In addition, workers with greater sleep insufficiency on average reported lower safety compliance, but this effect was not mediated by workplace cognitive failures. These results have implications for future workplace interventions, suggesting that organizations striving to improve safety should prioritize interventions that will reduce workers' insomnia symptoms and improve their ability to quickly fall asleep and stay asleep throughout the night. (PsycINFO Database Record (c) 2018 APA, all rights reserved)

Eggerth DE, Keller BM, Cunningham TR, and Flynn MA. Evaluation of toolbox safety training in construction: the impact of narratives. American Journal of Industrial Medicine. 2018; 61(12):997-1004.

<https://doi.org/10.1002/ajim.22919>

Abstract: BACKGROUND: Construction is a dangerous industry with a large number of small businesses. Because they require minimal resources to deliver, toolbox talks may be an ideal training format for small construction contractors. METHODS: Eight toolbox talks were developed, each with two versions. One version of each toolbox talk was standard and one version included a narrative and discussion questions. Participants were randomly assigned to receive the standard or the narrative version. Pre- and post-intervention surveys measured demographics, workplace safety climate, and knowledge. The post-intervention survey also measured training impact. RESULTS: Including narratives with discussion questions significantly increased knowledge gain and led to increased training impact. Less experienced workers were more likely to gain knowledge and training impact compared to more experienced workers. There were no significant changes in workplace safety climate. CONCLUSIONS: The results suggest that including a narrative and discussion questions increases toolbox talk effectiveness

Heyeres M, Tsey K, Yang Y, Yan L, and Jiang H. The characteristics and reporting quality of research impact case studies: a systematic review. Evaluation and Program Planning. 2018; 73:10-23.

<https://doi.org/10.1016/j.evalprogplan.2018.11.002>

Abstract: Despite the growing expectation that researchers report the impact of their research using a case study approach, systematic reviews of research impact have focused on frameworks, indicators, methods of data collection and assessment rather than impact case studies. Our aim is to provide an overview of the characteristics of published research impact case studies, including translation activities, and their reporting quality. We searched for peer-reviewed impact studies published between 2000 and 2018 using a case study approach and selected 25 suitable papers. We applied descriptive statistics to study

characteristics, conducted thematic analysis of research translation activities and assessed reporting quality using the 10-point ISRIA statement. 24 papers reported intermediate impacts, such as advocacy, or the development of statements, tools, or technology. 4 reported on longer-term societal impacts, such as health outcomes and economic return on investment. 7 reported on translation activities. Papers scored well against the ISRIA statement on 5 domains of reporting quality. Weakest scores centred around identification of stakeholder needs and stakeholder involvement, and ethics and conflict of interest. We identified the need for more consistency in reporting through a case study approach, more systematic reporting of translation pathways and greater transparency concerning estimated costs and benefits of the research and its translation and impact assessment

Hoekstra F, Martin Ginis KA, Allan V, Kothari A, and Gainforth HL. Evaluating the impact of a network of research partnerships: a longitudinal multiple case study protocol. Health Research Policy and Systems. 2018; 16(1):107.

<https://doi.org/10.1186/s12961-018-0377-y>

Abstract: BACKGROUND: Conducting and/or disseminating research together with community stakeholders (e.g. policy-makers, practitioners, community organisations, patients) is a promising approach to generating relevant and impactful research. However, creating strong and successful partnerships between researchers and stakeholders is complex. Thus far, an in-depth understanding of how, when and why these research partnerships are successful is lacking. The aim of this study is to evaluate and explain the outcomes and impacts of a national network of researchers and community stakeholders over time in order to gain a better understanding of how, when and why research partnerships are successful (or not). METHODS: This longitudinal multiple case study will use data from the Canadian Disability Participation Project, a large national network of researchers and community stakeholders working together to enhance community participation among people with physical disabilities. To maximise the impact of research conducted within the Canadian Disability Participation Project network, researchers are supported in developing and implementing knowledge translation plans. The components of the RE-AIM framework (reach, effectiveness, adoption, implementation and maintenance) will guide this study. Data will be collected from different perspectives (researchers, stakeholders) using different methods (logs, surveys, timeline interviews) at different time points during the years 2018-2021. A combination of data analysis methods, including network analysis and cluster analysis, will be used to study the RE-AIM components. Qualitative data will be used to supplement the findings and further understand the variation in the RE-AIM components over time and across groups. DISCUSSION: The outcomes, impacts and processes of conducting and disseminating research together with community stakeholders will be extensively studied. The longitudinal design of this study will provide a unique opportunity to examine research partnerships over time and understand

the underlying processes using a variety of innovative research methods (e.g. network analyses, timeline interviews). This study will contribute to opening the 'black box' of doing successful and impactful health research in partnership with community stakeholders. TRIAL REGISTRATION: Open Science Framework: <https://osf.io/kj5xa/>

Hyett S, Marjerrison S, and Gabel C. Improving health research among Indigenous Peoples in Canada. CMAJ. 2018; 190(20):E616-E621.
<https://doi.org/10.1503/cmaj.171538>

Jackson R, Beckman J, Frederick M, Musolin K, and Harrison R. Rates of carpal tunnel syndrome in a state workers' compensation information system, by industry and occupation: California, 2007-2014. Morbidity and Mortality Weekly Report. 2018; 67(39):1094-1097.
<https://doi.org/10.15585/mmwr.mm6739a4> [open access]

Abstract: Carpal tunnel syndrome (CTS) occurs when the median nerve becomes compressed as it passes through the wrist within the carpal tunnel, resulting in pain, tingling, weakness, or numbness in the hand or the wrist. Occupational risk factors for CTS include engaging in work activities that require forceful, repetitive tasks, prolonged use of the hands or wrists in an awkward posture, or vibration (1). To assess trends and identify high-risk industries and occupations for CTS, the California Department of Public Health (CDPH) analyzed California workers' compensation claims for CTS by industry (2007-2014) and occupation (2014) and calculated rates per full-time equivalent (FTE) worker. During 2007-2014, a total of 139,336 CTS cases were reported (incidence = 6.3 cases per 10,000 FTE) in California workers; the rate among women (8.2) was 3.3 times higher than that among men (2.5). Industries with the highest rates of CTS were textile, fabric finishing, and coating mills (44.9), apparel accessories and other apparel manufacturing (43.1), and animal slaughtering and processing (39.8). Industries with high rates of CTS should consider implementing intervention measures, including ergonomic evaluations and development of tools and instruments that require less repetition and force and that correct awkward postures

Kreindler SA. Advancing the evaluation of integrated knowledge translation. Health Research Policy and Systems. 2018; 16(1):104.
<https://doi.org/10.1186/s12961-018-0383-0>

Abstract: BACKGROUND: Integrated knowledge translation (IKT) flows from the premise that knowledge co-produced with decision-makers is more likely to inform subsequent decisions. However, evaluations of manager/policy-maker-focused IKT often concentrate on intermediate outcomes, stopping short of assessing whether research findings have contributed to identifiable organisational action. Such hesitancy may reflect the difficulty of tracing the causes of this distal, multifactorial outcome. This paper elucidates how an approach based on realistic evaluation could advance the field. MAIN TEXT: Realistic evaluation views outcomes as a joint product of intervention

mechanisms and context. Through identification of context-mechanism-outcome configurations, it enables the systematic testing and refinement of 'mid-range theory' applicable to diverse interventions that share a similar underlying logic of action. The 'context-sensitive causal chain' diagram, a tool adapted from the broader theory-based evaluation literature, offers a useful means of visualising the posited chain from activities to outcomes via mechanisms, and the context factors that facilitate or disrupt each linkage (e.g. activity-mechanism, mechanism-outcome). Drawing on relevant literature, this paper proposes a context-sensitive causal chain by which IKT may generate instrumental use of research findings (i.e. direct use to make a concrete decision) and identifies an existing tool to assess this outcome, then adapts the chain to describe a more subtle, indirect pathway of influence. Key mechanisms include capacity- and relationship-building among researchers and decision-makers, changes in the (perceived) credibility and usability of findings, changes in decision-makers' beliefs and attitudes, and incorporation of new knowledge in an actual decision. Project-specific context factors may impinge upon each linkage; equally important is the organisation's absorptive capacity, namely its overall ability to acquire, assimilate and apply knowledge. Given a sufficiently poor decision-making environment, even well-implemented IKT that triggers important mechanisms may fall short of its desired outcomes. Further research may identify additional mechanisms and context factors. **CONCLUSION:** By investigating 'what it is about an intervention that works, for whom, under what conditions', realistic evaluation addresses questions of causality head-on without sacrificing complexity. A realist approach could contribute greatly to our ability to assess - and, ultimately, to increase - the value of IKT

Patel J. New COPE guidelines on publication process manipulation: why they matter. *Research Integrity and Peer Review*. 2018; 3:13.

<https://doi.org/10.1186/s41073-018-0059-x> [open access]

Abstract: Manipulation of the publication process is a relatively new form of misconduct affecting the publishing industry. This editorial describes what it is, why it is difficult for individual journal editors and publishers to handle and the background to the development of the new COPE guidelines on how to manage publication process manipulation. These new guidelines represent an important first step towards encouraging openness and collaboration between publishers to address this phenomenon

Ring BM, Jarvis BP, Sigurdsson SO, DeFulio A, and Silverman K. Propensity to work among detoxified opioid-dependent adults. *Journal of Vocational Rehabilitation*. 2018; 49(2):187-194.

<https://doi.org/10.3233/JVR-180964>

Rudstam H, Gower WS, and Van Looy S. A muddy river alive with shifting currents: knowledge translation, disability, employment and organizational change. *Journal of Vocational Rehabilitation*. 2018; 49(2):173-185.

<https://doi.org/10.3233/JVR-180963>

Seers K, Rycroft-Malone J, Cox K, Crichton N, Edwards RT, Eldh AC, et al. Facilitating Implementation of Research Evidence (FIRE): an international cluster randomised controlled trial to evaluate two models of facilitation informed by the Promoting Action on Research Implementation in Health Services (PARIHS) framework. Implementation Science. 2018; 13(1):137. <https://doi.org/10.1186/s13012-018-0831-9> [open access]

Abstract: BACKGROUND: Health care practice needs to be underpinned by high quality research evidence, so that the best possible care can be delivered. However, evidence from research is not always utilised in practice. This study used the Promoting Action on Research Implementation in Health Services (PARIHS) framework as its theoretical underpinning to test whether two different approaches to facilitating implementation could affect the use of research evidence in practice. METHODS: A pragmatic clustered randomised controlled trial with embedded process and economic evaluation was used. The study took place in four European countries across 24 long-term nursing care sites, for people aged 60 years or more with documented urinary incontinence. In each country, sites were randomly allocated to standard dissemination, or one of two different types of facilitation. The primary outcome was the documented percentage compliance with the continence recommendations, assessed at baseline, then at 6, 12, 18, and 24 months after the intervention. Data were analysed using STATA15, multi-level mixed-effects linear regression models were fitted to scores for compliance with the continence recommendations, adjusting for clustering. RESULTS: Quantitative data were obtained from reviews of 2313 records. There were no significant differences in the primary outcome (documented compliance with continence recommendations) between study arms and all study arms improved over time. CONCLUSIONS: This was the first cross European randomised controlled trial with embedded process evaluation that sought to test different methods of facilitation. There were no statistically significant differences in compliance with continence recommendations between the groups. It was not possible to identify whether different types and "doses" of facilitation were influential within very diverse contextual conditions. The process evaluation (Rycroft-Malone et al., Implementation Science. doi: 10.1186/s13012-018-0811-0) revealed the models of facilitation used were limited in their ability to overcome the influence of contextual factors. TRIAL REGISTRATION: Current Controlled Trials ISRCTN11598502 . Date 4/2/10. The research leading to these results has received funding from the European Union's Seventh Framework Programme (FP7/2007-2013) under grant agreement no. 223646

Tenney L, McKenzie LM, Matus B, Mueller K, and Newman LS. Effect of an opioid management program for Colorado workers' compensation providers on adherence to treatment guidelines for chronic pain. American Journal of Industrial Medicine. 2018; [Epub ahead of print]. <https://doi.org/10.1002/ajim.22920>

Abstract: OBJECTIVE: The aim of this study was to examine adherence of state guidelines for Colorado workers' compensation physicians/providers treating

individuals as injured workers with chronic pain after initiation of an opioid management program and provider incentives. **METHODS:** A retrospective cohort of chronic, non-cancer pain claims was constructed from the Colorado's workers' compensation database. Adherence to treatment guidelines and opioid prescribing practices were evaluated during implementation of a new billing code to incentivize adherence. **RESULTS:** Overall, less than 33% of claims showed evidence of opioid management. Comprehensive opioid management was observed in only 4.4% of claims. In 2010, after implementing the new billing code, the ratio of long acting opioids to short acting opioids decreased from 0.2 to 0.13; returning to 0.2 in one year. Similarly, morphine equivalent doses declined for a short period. **CONCLUSIONS:** Incentivizing physicians to adhere to chronic pain management guidelines only temporarily improves prescribing practices

Thorsen SV, Flyvholm MA, and Bultmann U. Self-reported or register-based? A comparison of sickness absence data among 8110 public and private employees in Denmark. *Scandinavian Journal of Work, Environment & Health*. 2018; 44(6):631-638.

<https://doi.org/10.5271/sjweh.3747>

Abstract: Objectives The study aim was to examine (i) non-response bias between responders and non-responders, and (ii) whether the association between self-reported sickness absence (SA) and register-based SA differed by gender, age, sector, or physically demanding work. Methods The responses of 8110 participants to a question on self-reported SA in past 12 months in the Work Environment and Health in Denmark Survey (2014) was linked to 12 months of SA data from the Danish Register of Work Absence. We used logistic regression for the non-response analysis and Poisson regression to examine associations. Results Responders had on average 0.5 days less SA per year than non-responders. Public employees had a higher response rate than private employees (approximately five percentage points), women had a higher rate than men (approximately nine percentage points), and older employees a higher rate than younger employees (approximately nine percentage points in ten years). Self-reported SA correlated highly with register-based SA (Spearman's rank correlation=0.76). In general, responders with few SA days (<10) under-reported their SA while responders with many SA days (>30) over-reported their SA. Women under-reported significantly more than men (average difference one day); older employees under-reported significantly more than younger employees (difference between age groups 18-29 and 60-64 was 1.7 days). Differences between sectors or levels of physically demanding work were non-significant. Conclusions Self-reported SA data may be influenced by non-response bias, and different accuracy in different demographic groups. When available, the use of register-based SA data is recommended

*IWH authored publication.