

IWH Research Alert
March 23, 2018

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***Jetha A, Gignac MAM, Bowring J, Tucker S, Connelly CE, Proulx L, and Martin Ginis KA. Supporting arthritis and employment across the life course: a qualitative study. *Arthritis Care & Research*. 2018; [Epub ahead of print].**

<http://dx.doi.org/10.1002/acr.23523>

Abstract: **OBJECTIVE:** To examine the need, availability and use of formal and informal workplace resources, and uncover differences across the life course for adults with arthritis. **METHOD:** Focus groups and interviews were conducted with young (ages 18 to 34 years, n = 7), middle-aged (ages 35 to 54 years, n = 13) and older adults (>55 years, n = 25) living with inflammatory arthritis, osteoarthritis, or other rheumatic disease diagnosis. Participants were asked about their employment experiences, formal and informal workplace resource needs, and availability and usage of workplace resources. Differences based on chronological, functional, psychosocial, organizational and lifespan dimensions of age were examined. A modified grounded theory approach was used to inductively analyze the data. **RESULTS:** Young, middle-aged, and older adult participants required similar workplace resources. Across all participants, scheduling modifications tended to be the most needed workplace resource. In contrast, the perceived availability and usage of formal workplace resources differed among participants. Young adult participants and those who were newer to their jobs reported that workplace resource needs were less available and utilized. Middle- and older-aged adults reported greater availability of workplace resources. Scheduling accommodations and at-work modifications were the most used workplace resources among middle- and older-aged adults, respectively. **CONCLUSION:** Similar workplace resources could meet the employment needs

of people with arthritis across the life course. Attention should be paid to young adults and those who are new to their job because they may perceive more barriers to accessing formal workplace resources and be susceptible to work disability. This article is protected by copyright. All rights reserved

Armstrong TJ, Burdorf A, Descatha A, Farioli A, Graf M, Horie S, Marras WS, Potvin JR, Rempel D, Spatari G, Takala EP, Verbeek J, and Violante FS. Scientific basis of ISO standards on biomechanical risk factors. Scandinavian Journal of Work, Environment & Health. 2018; [Epub ahead of print].

<http://dx.doi.org/10.5271/sjweh.3718> [open access]

Abstract: Among other purposes, companies and regulatory agencies from around the world often adopt International Standard Organization (ISO) standards to determine acceptable practices, equipment and criteria for preventing occupational injuries and illnesses. ISO standards are based on a consensus among individuals who participate in the process. This discussion paper examines the scientific process for the development of several ISO standards on biomechanical factors, comparing it with processes used by other professional organizations, including scientific committees working on the development of clinical guidelines. While the ISO process has value, it also has clear limitations when it comes to developing occupational health and safety standards that should be based on scientific principles

Bitar FK, Chadwick-Jones D, Lawrie M, Nazaruk M, and Boodhai C. Empirical validation of operating discipline as a leading indicator of safety outputs and plant performance. Safety Science. 2018; 104:144-156.

<http://dx.doi.org/10.1016/j.ssci.2017.12.036>

Chen J, Wang RQ, Lin Z, and Guo X. Measuring the cognitive loads of construction safety sign designs during selective and sustained attention. Safety Science. 2018; 105:9-21.

<http://dx.doi.org/10.1016/j.ssci.2018.01.020>

Dammeyer J and Chapman M. A national survey on violence and discrimination among people with disabilities. BMC Public Health. 2018; 18(1):355.

<http://dx.doi.org/10.1186/s12889-018-5277-0> [open access]

Abstract: BACKGROUND: The aim of the study was to quantify levels of violence and discrimination among people with disabilities and analyze the effects of gender and the type and degree of disability. METHODS: The study analyzed data on self-reported violence and discrimination from a Danish national survey of 18,019 citizens, of whom 4519 reported a physical disability and 1398 reported a mental disability. RESULTS: Individuals with disabilities reported significantly higher levels of violence than those without. Specifically, individuals reporting a mental disability reported higher levels of violence and discrimination. Significant gender differences were found with regard to type of violence: while men with

disabilities were more likely to report physical violence, women with disabilities were more likely to report major sexual violence, humiliation and discrimination. Neither severity nor visibility of disability was found to be a significant factor for risk of violence. **CONCLUSIONS:** This large-scale study lends support to existing research showing that people with disabilities are at greater risk of violence than people without disabilities. Further, the study found that people with mental disabilities were significantly more likely to report all types of violence and discrimination than those with physical disabilities. The findings also show that gender is significant in explaining the type of violence experienced and the experience of discrimination

Deaton A and Cartwright N. Understanding and misunderstanding randomized controlled trials. *Social Science & Medicine*. 2017; [Epub ahead of print].

<http://dx.doi.org/10.1016/j.socscimed.2017.12.005> [open access]

Abstract: Randomized Controlled Trials (RCTs) are increasingly popular in the social sciences, not only in medicine. We argue that the lay public, and sometimes researchers, put too much trust in RCTs over other methods of investigation. Contrary to frequent claims in the applied literature, randomization does not equalize everything other than the treatment in the treatment and control groups, it does not automatically deliver a precise estimate of the average treatment effect (ATE), and it does not relieve us of the need to think about (observed or unobserved) covariates. Finding out whether an estimate was generated by chance is more difficult than commonly believed. At best, an RCT yields an unbiased estimate, but this property is of limited practical value. Even then, estimates apply only to the sample selected for the trial, often no more than a convenience sample, and justification is required to extend the results to other groups, including any population to which the trial sample belongs, or to any individual, including an individual in the trial. Demanding 'external validity' is unhelpful because it expects too much of an RCT while undervaluing its potential contribution. RCTs do indeed require minimal assumptions and can operate with little prior knowledge. This is an advantage when persuading distrustful audiences, but it is a disadvantage for cumulative scientific progress, where prior knowledge should be built upon, not discarded. RCTs can play a role in building scientific knowledge and useful predictions but they can only do so as part of a cumulative program, combining with other methods, including conceptual and theoretical development, to discover not 'what works', but 'why things work'

Gjesdal S, Holmaas TH, Monstad K, and Hetlevik O. New episodes of musculoskeletal conditions among employed people in Norway, sickness certification and return to work: a multiregister-based cohort study from primary care. *BMJ Open*. 2018; 8(3):e017543.

<http://dx.doi.org/10.1136/bmjopen-2017-017543> [open access]

Abstract: **OBJECTIVES:** To identify new cases of musculoskeletal (MSK) disorders among employed people presenting in Norwegian primary care in

2012, frequency of sickness certification and length of sick leave. To identify patient-, diagnosis- and GP-related predictors of sickness certification, prolonged sick leave and return to work (RTW). METHODS: An observational multiregister-based cohort study covering all employed persons in Norway (1 176 681 women and 1 330 082 men) based on claims data from all regular GPs merged with individual sociodemographic data from public registers was performed. Participants were employed patients without any GP consultation during the previous 3 months who consulted a GP with a diagnosis of a MSK condition. Those not on sick leave and with a known GP affiliation were included in the analyses. Outcomes were incidence, proportion sickness certified and proportion on sick leave after 16 days, according to the diagnosis, ORs with 95% CIs for sickness certified and for sick leave exceeding 16 days and HRs with 95% CIs for RTW. RESULTS: One-year incidence of MSK episodes was 159/1000 among employed women and 156/1000 among employed men. 27.1% of the women and 28.2% of the men were sickness certified in the initial consultation. After 16 days, 10.5% of women and 9.9% of men were still on sick leave. Upper limb problems were most frequent. After adjustments, medium/high education predicted a lower risk of absence from work due to sickness and rapid RTW after 16 days. Back pain, fractures and female gender carried a higher risk of sickness certification but faster RTW. Older age was associated with less initial certification, more sick leave exceeding 16 days and slower RTW. Male patients with male GPs had a lower risk of sickness absence, which was similar to patients with GPs born in Norway and GPs with many patients. After 16 days, GP variables had no effect on RTW. CONCLUSION: Upper limb problems and GPs as stakeholders in 'the inclusive workplace' strategy need more attention

Hyde JS, Wu AY, and Gill L. The benefit receipt patterns and labor market experiences of older workers who were denied SSDI on the basis of work capacity. Mathematica Policy Research; 2018.

<https://www.mathematica-mpr.com/our-publications-and-findings/publications/the-benefit-receipt-patterns-and-labor-market-experiences-of-older-workers-who-were-denied-ssdi>

Ivensky V. Business risks: what happens when leaders are committed to nonoptimal OSH systems? Professional Safety. 2018; 63(2):44-52.

<https://www.onepetro.org/journal-paper/ASSE-18-02-44>

Kim GH, Lee HS, Jung SW, Lee JG, Lee JH, Lee KJ, and Kim JJ. Emotional labor, workplace violence, and depressive symptoms in female bank employees: a questionnaire survey using the K-ELS and K-WVS. Annals of Occupational and Environmental Medicine. 2018; 30:17.

<http://dx.doi.org/10.1186/s40557-018-0229-9>

Abstract: Background: In modern society, the scale of the service industry is continuously expanding, and the number of service workers is increasing. Correspondingly, physical and mental problems related to emotional labor are becoming a major social problem. In this study, we investigated the relationship

between emotional labor, workplace violence, and depressive symptoms in female bank employees, which is a typical service industry. Methods: In this study, the Korean Emotional Labor Scale (K-ELS) and Korean Workplace Violence Scale (K-WVS) were distributed to 381 female workers in their 20s at a bank in Seoul, Korea. Data were obtained from 289 subjects (75.9%) and analyzed for 278 respondents, after excluding those with missing responses. We examined the relationship between emotional labor, workplace violence, and depressive symptoms, using multiple logistic regression analysis. Results: Among 278 subjects, 27 workers (9.7%) had depressive symptoms. "Emotional disharmony and hurt" (OR 2.93, 95% CI = 1.17-7.36) and "Organizational surveillance and monitoring" (OR 3.18, 95% CI = 1.29-7.86) showed a significant association with depressive symptoms. For workplace violence, the "Experience of psychological and sexual violence from supervisors and coworkers" (OR 4.07, 95% CI = 1.58-10.50) showed a significant association. When the number of high-risk emotional labor-related factors was 1 or more, 13.1% showed depressive symptoms. When the number of high-risk workplace violence-related factors was 1 or more, 14.4% had statistically significant depressive symptoms. Conclusions: A significant result was found for depressive symptoms related to Emotional disharmony, which is a sub-topic of emotional labor, and those at high risk for "Organizational surveillance and monitoring." For workplace violence, depressive symptoms were high for the group at high risk for the "experience of psychological and sexual violence from supervisors and coworkers." In this way, management of emotional disharmony, a sub-factor of emotional labor, is necessary, and improvements to traditional corporate culture that monitors emotional labor is necessary. Violence from colleagues and supervisors in the workplace must also be reduced. IRB Approval No. SCHUH 2017-01-029. Registered 26 January 2017. Retrospectively registered

Korshoj M, Jorgensen MB, Hallman DM, Lagersted-Olsen J, Holtermann A, and Gupta N. Prolonged sitting at work is associated with a favorable time course of low-back pain among blue-collar workers: a prospective study in the DPhacto cohort. Scandinavian Journal of Work, Environment & Health. 2018; [Epub ahead of print].

<http://dx.doi.org/10.5271/sjweh.3726> [open access]

Abstract: Objective Low-back pain (LBP) is a massive health problem. Sitting at work has been suggested to be both a risk and protective factor for LBP. Thus, the objective of this study was to investigate the association between total and temporal patterns of objectively measured sitting duration and individual time course of LBP. Methods The analysis was performed among 665 participants from the DPhacto cohort of mainly blue-collar workers. Sitting at work was measured by accelerometry at baseline, expressed in total duration and temporal pattern [% of working time spent in brief bursts (≤ 5 minutes), moderate ($> 5 - \leq 20$ minutes) and prolonged periods (> 20 minutes)] of sitting. Time course of LBP (0-10 scale) were collected by monthly text messages across one year. Linear mixed models were applied to investigate the association, adjusting for

potential confounders. Results Significant negative associations between sitting duration at work and time course of LBP were found; total sitting (B -0.01, 95% CI -0.01- -0.004), brief bursts (B -0.01, 95% CI -0.02- -0.01), moderate (B -0.01, 95% CI -0.01- -0.008) and prolonged periods (B -0.01, 95% CI -0.02- -0.01). Meaning, a 5-minute increase of sitting at work will correspond to a decrease in one year time course of LBP by -0.05 points. Conclusion Longer duration of total and temporal sitting periods at work was significantly associated with a favorable time course of LBP. This finding shows sitting at work to be beneficial for LBP, among populations of mainly blue-collar workers, by protecting from LBP aggravation

Lane TJ, Gray S, Hassani-Mahmooei B, and Collie A. Effectiveness of employer financial incentives in reducing time to report worker injury: an interrupted time series study of two Australian workers' compensation jurisdictions. BMC Public Health. 2018; 18(1):100.

<http://dx.doi.org/10.1186/s12889-017-4998-9> [open access]

Abstract: BACKGROUND: Early intervention following occupational injury can improve health outcomes and reduce the duration and cost of workers' compensation claims. Financial early reporting incentives (ERIs) for employers may shorten the time between injury and access to compensation benefits and services. We examined ERI effect on time spent in the claim lodgement process in two Australian states: South Australia (SA), which introduced them in January 2009, and Tasmania (TAS), which introduced them in July 2010. METHODS: Using administrative records of 1.47 million claims lodged between July 2006 and June 2012, we conducted an interrupted time series study of ERI impact on monthly median days in the claim lodgement process. Time periods included claim reporting, insurer decision, and total time. The 18-month gap in implementation between the states allowed for a multiple baseline design. In SA, we analysed periods within claim reporting: worker and employer reporting times (similar data were not available in TAS). To account for external threats to validity, we examined impact in reference to a comparator of other Australian workers' compensation jurisdictions. RESULTS: Total time in the process did not immediately change, though trend significantly decreased in both jurisdictions (SA: -0.36 days per month, 95% CI -0.63 to -0.09; TAS: 0.35, -0.50 to -0.20). Claim reporting time also decreased in both (SA: -1.6 days, -2.4 to -0.8; TAS: -5.4, -7.4 to -3.3). In TAS, there was a significant increase in insurer decision time (4.6, 3.9 to 5.4) and a similar but non-significant pattern in SA. In SA, worker reporting time significantly decreased (-4.7, -5.8 to -3.5), but employer reporting time did not (-0.3, -0.8 to 0.2). CONCLUSIONS: The results suggest that ERIs reduced claim lodgement time and, in the long-term, reduced total time in the claim lodgement process. However, only worker reporting time significantly decreased in SA, indicating that ERIs may not have shortened the process through the intended target of employer reporting time. Lack of similar data in Tasmania limited our ability to determine whether this was a result of ERIs or

another component of the legislative changes. Further, increases in insurer decision time highlight possible unintended negative effects

Lyszczarz B and Nojszewska E. Economic situation and occupational accidents in Poland: 2002-2014 panel data regional study. International Journal of Occupational Medicine and Environmental Health. 2018; 31(2):151-164.

<http://dx.doi.org/10.13075/ijomeh.1896.01093> [open access]

Abstract: OBJECTIVES: Occupational accidents constitute a substantial health and economic burden for societies around the world and a variety of factors determine the frequency of accidents at work. The aim of this paper is to investigate the relationship between the economic situation and the rate of occupational accidents in Poland. MATERIAL AND METHODS: The analysis comprised data for 66 Polish sub-regions taken from the Central Statistical Office's Local Data Bank. The regression analysis with panel data for period 2002-2014 was applied to identify the relationships involved. Four measures of accidents were used: the rates of total occupational accidents, accidents among men and women separately as well as days of incapacity to work due to accidents at work per employee. Four alternative measures assessed the economic situation: gross domestic product (GDP) per capita, average remuneration, the unemployment rate and number of dwelling permits. The confounding variables included were: employment in hazardous conditions and the size of enterprises. RESULTS: The results of the regression estimates show that the number of occupational accidents in Poland exhibits procyclical behavior, which means that more accidents are observed during the times of economic expansion. Stronger relationships were observed in the equations explaining men's accident rates as well as total rates. A weaker and not always statistically significant impact of economic situation was identified for women's accident rates and days of incapacity to work. CONCLUSIONS: The results have important implications for occupational health and safety actions. In the periods of higher work intensity employers should focus on appropriate training and supervision of inexperienced workers as well as on ensuring enough time for already experienced employees to recuperate. In terms of public health actions, policy makers should focus on scrutinizing working conditions, educating employers and counteracting possible discrimination of injured employees. Int J Occup Med Environ Health 2018;31(2):151-164

Niedhammer I, Lesuffleur T, Labarthe G, and Chastang JF. Role of working conditions in the explanation of occupational inequalities in work injury: findings from the national French SUMER survey. BMC Public Health. 2018; 18(1):344.

<http://dx.doi.org/10.1186/s12889-018-5254-7> [open access]

Abstract: BACKGROUND: Social inequalities in work injury have been observed but explanations are still missing. The objectives of this study were to evaluate the contribution of working conditions in the explanation of social inequalities in

work injury in a national representative sample of employees. **METHODS:** The study was based on the cross-sectional sample of the national French survey SUMER 2010 including 46,962 employees, 26,883 men and 20,079 women. The number of work injuries within the last 12 months was studied as the outcome. Occupation was used as a marker of social position. Psychosocial work factors included various variables related to the classical job strain model, psychological demands, decision latitude, social support, and other understudied variables related to reward, job insecurity, job promotion, esteem, working time and hours and workplace violence. Occupational exposures of chemical, biological, physical and biomechanical nature were also studied. Weighted age-adjusted Poisson regression analyses were performed. **RESULTS:** Occupational gradients were observed in the exposure of most psychosocial work factors and occupational exposures. Strong occupational differences in work injury were found, blue-collar workers being more likely to have work injury. Chemical, biological, physical and biomechanical exposures contributed to explain the occupational differences in work injury substantially. Noise, thermic constraints, manual materials handling, postural/articular constraints and vibrations had significant contributions. Psychosocial work factors also contributed to explain the differences especially among women. **CONCLUSION:** Prevention policies oriented toward chemical, biological, physical, biomechanical and psychosocial work exposures may contribute to reduce the magnitude of occupational differences in work injury

Socias-Morales CM, Chaumont Menendez CK, and Marsh SM. Fatal work-related falls in the United States, 2003-2014. American Journal of Industrial Medicine. 2018; 61(3):204-215.

<http://dx.doi.org/10.1002/ajim.22810>

Abstract: **BACKGROUND:** Falls are the second leading cause of work-related fatalities among US workers. We describe fatal work-related falls from 2003 to 2014, including demographic, work, and injury event characteristics, and changes in rates over time. **METHODS:** We identified fatal falls from the Bureau of Labor Statistics (BLS), Census of Fatal Occupational Injuries and estimated rates using the BLS Current Population Survey. **RESULTS:** From 2003 to 2014, there were 8880 fatal work-related falls, at an annual rate of 5.5 per million FTE. Rates increased with age. Occupations with the highest rates included construction/extraction (42.2 per million FTE) and installation/maintenance/repair (12.5 per million FTE). Falls to a lower level represented the majority (n = 7521, 85%) compared to falls on the same level (n = 1128, 13%). **CONCLUSIONS:** Falls are a persistent source of work-related fatalities. Fall prevention should continue to focus on regulation adherence, Prevention through Design, improving fall protection, training, fostering partnerships, and increasing communication

Steel J, Godderis L, and Luyten J. Productivity estimation in economic evaluations of occupational health and safety interventions: a systematic review. Scandinavian Journal of Work, Environment & Health. 2018; [Epub ahead of print].

<http://dx.doi.org/10.5271/sjweh.3715> [open access]

Abstract: Objectives Occupational health and safety (OHS) interventions` effect on worker productivity is an essential, but complex element of the value of these programs. The trustworthiness of economic evaluation studies, aiming to provide guidance to decision-makers in the field of OHS, depends at least partly on how accurately productivity changes are measured. We aim to review the methods used to estimate productivity changes in recently published economic evaluations of OHS interventions. **Methods** We performed systematic searches of economic evaluations of OHS programs published between 2007 and 2017 and reviewed these studies` methods to quantify the programs` impact on worker productivity **Results** Of the 90 identified studies, 44 used a human capital approach, 17 a friction cost approach, 13 stated productivity in natural units (eg, a cost-per-absence-day-avoided), 7 made use of compensation expenses, 4 used output-based methods, 4 an "ad hoc" approach, and 1 study did not state its method. Different approaches were combined in 19 studies. Within these methods, we observed a wide diversity in their precise implementation, especially regarding the measurement and valuation of absenteeism and presenteeism. **Conclusions** Productivity is a key element of the economic attractiveness of investing in OHS. Economic evaluation studies of OHS would benefit from more methodological standardization in their approach to quantifying productivity change. Future research should better account for the methodological uncertainty that occurs in estimating it in order to demonstrate the impact that particular choices and approaches to productivity estimation can have on cost-effectiveness results

Topete L, Forst L, Zanoni J, and Friedman L. Workers' compensation and the working poor: occupational health experience among low wage workers in federally qualified health centers. American Journal of Industrial Medicine. 2018; 61(3):189-197.

<http://dx.doi.org/10.1002/ajim.22813>

Abstract: **BACKGROUND:** The working poor are at highest risk of work-related injuries and have limited access to occupational health care. **OBJECTIVES:** To explore community health centers (CHCs) as a venue for accessing at risk workers; and to examine the experience, knowledge, and perceptions of workers' compensation (WC) among the working poor. **METHODS:** Key informant interviews were conducted among patients in waiting rooms of rural and urban CHCs. **RESULT:** Fifty-one interviews of minority workers across sectors identified 23 prior work-related injuries and mixed experiences with the WC system. Barriers to reporting and ways to overcome these barriers were elucidated. **CONCLUSIONS:** Patients in CHCs work in jobs that put them at risk for work-related injuries. CHCs are a good site for accessing at-risk workers. Improving occupational healthcare and appropriate billing of WC insurance should be explored, as should best practices for employers to communicate WC laws to low wage workers

Virtanen M, Jokela M, Madsen IE, Magnusson Hanson LL, Lallukka T, Nyberg ST, Alfredsson L, Batty GD, et al. Long working hours and depressive symptoms: systematic review and meta-analysis of published studies and unpublished individual participant data. *Scandinavian Journal of Work, Environment & Health*. 2018; [Epub ahead of print].

<http://dx.doi.org/10.5271/sjweh.3712> [open access]

Abstract: Objectives This systematic review and meta-analysis combined published study-level data and unpublished individual-participant data with the aim of quantifying the relation between long working hours and the onset of depressive symptoms. Methods We searched PubMed and Embase for published prospective cohort studies and included available cohorts with unpublished individual-participant data. We used a random-effects meta-analysis to calculate summary estimates across studies. Results We identified ten published cohort studies and included unpublished individual-participant data from 18 studies. In the majority of cohorts, long working hours was defined as working ≥ 55 hours per week. In multivariable-adjusted meta-analyses of 189 729 participants from 35 countries [96 275 men, 93 454 women, follow-up ranging from 1-5 years, 21 747 new-onset cases), there was an overall association of 1.14 (95% confidence interval (CI) 1.03-1.25] between long working hours and the onset of depressive symptoms, with significant evidence of heterogeneity ($I^2=45.1\%$, $P=0.004$). A moderate association between working hours and depressive symptoms was found in Asian countries (1.50, 95% CI 1.13-2.01), a weaker association in Europe (1.11, 95% CI 1.00-1.22), and no association in North America (0.97, 95% CI 0.70-1.34) or Australia (0.95, 95% CI 0.70-1.29). Differences by other characteristics were small. Conclusions This observational evidence suggests a moderate association between long working hours and onset of depressive symptoms in Asia and a small association in Europe

Winge S and Albrechtsen E. Accident types and barrier failures in the construction industry. *Safety Science*. 2018; 105:158-166.

<http://dx.doi.org/10.1016/j.ssci.2018.02.006>

Wuellner S and Phipps P. Employer knowledge of federal requirements for recording work-related injuries and illnesses: implications for occupational injury surveillance data. *American Journal of Industrial Medicine*. 2018; [Epub ahead of print].

<http://dx.doi.org/10.1002/ajim.22824>

Abstract: BACKGROUND: Accuracy of the Bureau of Labor Statistics Survey of Occupational Injuries and Illnesses (SOII) data is dependent on employer compliance with workplace injury and illness recordkeeping requirements. Characterization of employer recordkeeping can inform efforts to improve the data. METHODS: We interviewed representative samples of SOII respondents from four states to identify common recordkeeping errors and to assess employer characteristics associated with limited knowledge of the recordkeeping

requirements and non compliant practices. RESULTS: Less than half of the establishments required to maintain OSHA injury and illness records reported doing so. Few establishments knew to omit cases limited to diagnostic services (22%) and to count unscheduled weekend days as missed work (27%). No single state or establishment characteristic was consistently associated with better or worse record-keeping. CONCLUSION: Many employers possess a limited understanding of workplace injury recordkeeping requirements, potentially leading them to over-report minor incidents, and under-report missed work cases

Yazdani A, Hilbrecht M, Imbeau D, Bigelow P, Neumann WP, Pagell M, and Wells R. Integration of musculoskeletal disorders prevention into management systems: a qualitative study of key informants' perspectives. Safety Science. 2018; 104:110-118.
<http://dx.doi.org/10.1016/j.ssci.2018.01.004>

***IWH authored publication.**