

IWH Research Alert
January 31, 2020

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***Banta-Green CJ, Williams JR, Sears JM, Floyd AS, Tsui JI, and Hoeft TJ. Impact of a jail-based treatment decision-making intervention on post-release initiation of medications for opioid use disorder. *Drug and Alcohol Dependence*. 2020; 207:107799.**

<https://doi.org/10.1016/j.drugalcdep.2019.107799>

Abstract: INTRODUCTION: Opioid use disorder (OUD) is common among people in jail and is effectively treated with medications for OUD (MOUD). People with OUD may have an incomplete or inaccurate understanding of OUD and MOUD, and of how to access care. We evaluated an OUD treatment decision making (TDM) intervention to determine whether the intervention increased MOUD initiation post-release. METHODS: We conducted an observational retrospective cohort study of the TDM intervention on initiation of MOUD, individuals with records data indicating confirmed or suspected OUD incarcerated in four eligible jails were eligible to receive the intervention. Time-to-event analyses of the TDM intervention were conducted using Cox proportional hazard modeling with MOUD as the outcome. RESULTS: Cox proportional hazard modeling, with the intervention modeled as having a time-varying effect due to violation of the proportionality assumption, indicated that those receiving the TDM intervention (n=568) were significantly more likely to initiate MOUD during the first month after release from jail (adjusted hazard ratio 6.27, 95 % C.I. 4.20-9.37), but not in subsequent months (AHR 1.33 95 % C.I. 0.94-1.89), adjusting for demographics, prior MOUD, or felony or gross misdemeanor arrest in the prior year compared to those not receiving the intervention (n=3174). CONCLUSION: The TDM intervention was associated with a significantly higher relative hazard of starting MOUD, specifically during the first month after

incarceration. However, a minority of all eligible people received any MOUD. Future research should examine ways to increase initiation on MOUD immediately after (or ideally during) incarceration

***Leece P, Shantharam Y, Hassam S, Buchman DZ, Hamilton M, Persaud N, Kahan M, Spithoff S, Srivastava A, Sproule BA, Carlin L, Furlan AD. Improving opioid guideline adherence: evaluation of a multifaceted, theory-informed pilot intervention for family physicians. BMJ Open. 2020; 10(1):e032167.**

<https://doi.org/10.1136/bmjopen-2019-032167> [open access]

Abstract: OBJECTIVES: Opioid-related deaths continue to increase in North America, an epidemic that was initiated by high rates of opioid prescribing. We designed a multifaceted, theory-informed Opioid Self-Assessment (OSA) package, to increase adherence to the Canadian Opioid Guideline among family physicians. This study aimed to assess changes in Canadian family physicians' knowledge and practices after completing the OSA package. DESIGN: We conducted a mixed-method evaluation using a pre-test and post-test design that involved the collection of both qualitative and quantitative data. SETTING: This research was conducted in the primary care setting in Ontario, Canada. PARTICIPANTS: We recruited a purposive sample of nine family physicians in Ontario who use long-term opioid therapy to treat patients with chronic pain. INTERVENTIONS: The OSA package included four components: an online knowledge test, an online learning programme, a safe medication practice self-assessment questionnaire and chart audit with feedback. OUTCOME MEASURES: Our measures included changes in knowledge, opioid safety practices and physicians' perspectives on the OSA package. RESULTS: We found statistically significant improvements between pre-test and post-test knowledge scores at both baseline and 6-month follow-up. Physicians' scores improved significantly on five of the seven core characteristics of the practice self-assessment questionnaire. On the chart audits, we observed an improvement in patient education between baseline and 6 months. Qualitative interviews showed that participants appreciated embedded resources in the OSA package. The completion of the package stimulated identification of gaps or deficits in practice and served as a useful reminder to discuss risk and safety with patients. Participants described the chart review as helpful in prompting discussions with their patients, identifying deficits and strengths and a 'primary motivator' for project participation. CONCLUSIONS: The OSA package has the potential to improve medication safety practices in primary care related to opioid monitoring and adherence to current opioid guidelines

Ahern J. Minimum wage policy protects against suicide in the USA. Journal of Epidemiology & Community Health. 2020; [epub ahead of print].

<https://doi.org/10.1136/jech-2019-213647>

Aljabri D, Vaughn A, Austin M, White L, Li Z, Naessens J, et al. An investigation of healthcare worker perception of their workplace safety and

incidence of injury. Workplace Health & Safety. 2020; 20(10):1-12.

<https://doi.org/10.1177/2165079919883293>

Abstract: Background: Managing the safety climate in health care is a promising tool for improving employee and patient safety in the health care work environment. Gaps in the theoretical and conceptual underpinnings of safety climate, as well as the evidence base for its practical application in health care remain. The purpose of this study was to evaluate the number of work injuries occurring in health care work units and associated safety climate beliefs. Method: A retrospective analysis was conducted utilizing organizational staff survey data collected by a large medical hospital in the Midwest in 2015. Employees (n = 32,327) were invited to identify safety climate perceptions via survey. Injuries, days restricted, and days absent were identified through the Hospital's Department of Occupational Safety and Health Administration record. Zero Inflated Negative Binomial regressions used injuries as dependent variables and safety climate perceptions as independent variables. Findings: In all, 23,599 employees completed the survey (73% response rate) across 1,805 employee work units which were defined as groupings of employees reporting to a single supervisor. We found that there was an association between fewer injuries and health care workers indicating that they share responsibility for compliance with safety rules and procedures (relative risk [RR] = 0.98, 95% confidence interval [CI] = [0.98, 0.99]). Conclusion/Application to Practice: This study supports the use of a safety climate measure to assess working units' perception of employee safety. A continued focus on the health and safety of employees who interact directly with patients is warranted, as well as employees who do not provide direct patient care

Bateman EA and Viana R. Burnout among specialists and trainees in physical medicine and rehabilitation: a systematic review. Journal of Rehabilitation Medicine. 2019; 51(11):869-874.

<https://doi.org/10.2340/16501977-2614> [open access]

Abstract: OBJECTIVE: Burnout, a state of emotional exhaustion related to work or patient-care activities, is prevalent in all stages of medical training and clinical practice. The syndrome has serious consequences, including medical errors, poorer quality of care, substance abuse, and suicide. The aim of this study is to evaluate the prevalence of burnout in Physical Medicine and Rehabilitation (PMandR) specialists and trainees. METHODS: Systematic literature searches were conducted in MEDLINE, CINAHL and EMBASE for peer-reviewed articles in English before March 2019 about the prevalence of burnout amongst PMandR specialists and trainees. RESULTS: This systematic review yielded 359 results. Of these, 33 full-text records were reviewed; 5 met the inclusion criteria: 3 surveys of PMandR specialists and 2 of PMandR residents (total n=?1,886 physicians; year of publication 2012-2019). Data extracted included prevalence and severity of burnout and, if available, risk or protective factors. Data were analysed using descriptive statistics. Incidence of burnout ranged from 22.2% to 83.3% in trainees and 48% to 62% in specialists. Organizational and system

challenges were the primary risk factors for burnout amongst specialists.
CONCLUSION: Emerging evidence positions physicians in PMandR among the most likely to experience burnout. Although there is limited literature regarding PMandR specialists and trainees, the available evidence suggests that more than half of physicians in PMandR experience burnout

Ceballos D, Guerrero M, Kalweit A, Rabin R, Spengler J, and Herrick R. One-hour pilot training to prevent workers from taking home workplace contaminants. *New Solutions*. 2020; 29(4):519-529.

<https://doi.org/10.1177/1048291119887188>

Giummarra MJ, Lau G, and Gabbe BJ. Evaluation of text mining to reduce screening workload for injury-focused systematic reviews. *Injury Prevention*. 2020; 26(1):55-60.

<https://doi.org/10.1136/injuryprev-2019-043247>

Abstract: INTRODUCTION: Text mining to support screening in large-scale systematic reviews has been recommended; however, their suitability for reviews in injury research is not known. We examined the performance of text mining in supporting the second reviewer in a systematic review examining associations between fault attribution and health and work-related outcomes after transport injury. METHODS: Citations were independently screened in Abstrackr in full (reviewer 1; 10 559 citations), and until no more citations were predicted to be relevant (reviewer 2; 1809 citations, 17.1%). All potentially relevant full-text articles were assessed by reviewer 1 (555 articles). Reviewer 2 used text mining (Wordstat, QDA Miner) to reduce assessment to full-text articles containing ≥ 1 fault-related exposure term (367 articles, 66.1%). RESULTS: Abstrackr offered excellent workload savings: 82.7% of citations did not require screening by reviewer 2, and total screening time was reduced by 36.6% compared with traditional dual screening of all citations. Abstrackr predictions had high specificity (83.7%), and low false negatives (0.3%), but overestimated citation relevance, probably due to the complexity of the review with multiple outcomes and high imbalance of relevant to irrelevant records, giving low sensitivity (29.7%) and precision (14.5%). Text mining of full-text articles reduced the number needing to be screened by 33.9%, and reduced total full-text screening time by 38.7% compared with traditional dual screening. CONCLUSIONS: Overall, text mining offered important benefits to systematic review workflow, but should not replace full screening by one reviewer, especially for complex reviews examining multiple health or injury outcomes. TRIAL REGISTRATION NUMBER: CRD42018084123

Godlee F. Blinding may be unnecessary, but please divest. *British Medical Journal*. 2020; 368:m255.

<https://doi.org/10.1136/bmj.m255>

Groeniger JO and Burdorf A. Advancing mediation analysis in occupational health research. *Scandinavian Journal of Work, Environment & Health*.

2020; [epub ahead of print].

<https://doi.org/10.5271/sjweh.3886>

Hilgert J. Deeming laws and practices as violations of the rights of people with work-acquired disabilities in Canada. *New Solutions*. 2020; 29(4):536-544.

<https://doi.org/10.1177/1048291119887197>

Kaufman JA, Salas-Hernandez LK, Komro KA, and Livingston MD. Effects of increased minimum wages by unemployment rate on suicide in the USA. *Journal of Epidemiology & Community Health*. 2020; [epub ahead of print].

<https://doi.org/10.1136/jech-2019-212981>

Abstract: BACKGROUND: Social welfare policies such as the minimum wage can affect population health, though the impact may differ by the level of unemployment experienced by society at a given time. METHODS: We ran difference-in-differences models using monthly data from all 50 states and Washington, DC from 1990 to 2015. We used educational attainment to define treatment and control groups. The exposure was the difference between state and federal minimum wage in US\$2015, defined both by the date the state law became effective and lagged by 1 year. Models included state and year fixed effects, and additional state-level covariates to account for state-specific time-varying confounding. We assessed effect modification by the state-level unemployment rate, and estimated predicted suicide counts under different minimum wage scenarios. RESULTS: The effect of a US\$1 increase in the minimum wage ranged from a 3.4% decrease (95% CI 0.4 to 6.4) to a 5.9% decrease (95% CI 1.4 to 10.2) in the suicide rate among adults aged 18-64 years with a high school education or less. We detected significant effect modification by unemployment rate, with the largest effects of minimum wage on reducing suicides observed at higher unemployment levels. CONCLUSION: Minimum wage increases appear to reduce the suicide rate among those with a high school education or less, and may reduce disparities between socioeconomic groups. Effects appear greatest during periods of high unemployment

Lancione S, Wade K, Windle SB, Fillion KB, Thombs BD, and Eisenberg MJ. Non-medical cannabis in North America: an overview of regulatory approaches. *Public Health*. 2020; 178:7-14.

<https://doi.org/10.1016/j.puhe.2019.08.018>

Abstract: OBJECTIVES: The objective of this study was to describe existing regulations of non-medical cannabis legalization in North America to inform recommendations for future health policy. These regulations are among the first in the world and will set a precedent for other jurisdictions globally who legalize cannabis. STUDY DESIGN: This was a review of online grey literature on regulatory approaches to non-medical cannabis legalization in North American jurisdictions. METHODS: We conducted an internet search in June 2019 to identify government and public health resources published after January 1, 2012. We were able to achieve data saturation using a limited number of resources.

Data extraction was conducted by two independent reviewers, with disagreements resolved by consensus. **RESULTS:** Eleven US states, the District of Columbia, and Canada have enacted legal recreational cannabis regulations. The legal age of cannabis possession matches the legal drinking age in all jurisdictions except one. Most consumption is in private residences only, with some provinces/territories permitting public consumption where tobacco is permitted. Most jurisdictions allow for home growing of up to 6 (US) or 4 (Canada) plants and a maximum possession of 1 oz. (US) or 1.06 oz. (Canada). Cannabis is available for purchase only in private retail stores in US states, while Canada has also legalized online sales. Impaired driving assessment is not cannabis-specific in most US states, while Canada has federal driving limits. **CONCLUSIONS:** Although North American approaches to regulating recreational cannabis use are consistent in many aspects, some exceptions exist (e.g., home growing, personal possession). More research is needed to assess the impact of variations in regulatory policies on potential harms from legalization to inform future policy decisions in North America and abroad. Complementary public health interventions will be crucial in ensuring public health and safety

Lindholm M, Vayrynen S, and Reiman A. Findings and views on occupational safety and health teaching at universities. Work. 2019; 64(4):685-695.

<https://doi.org/10.3233/WOR-193030>

Abstract: **BACKGROUND:** Young employees have often poorer occupational safety and health (OSH) skills and knowledge than older employees. Efforts should be made at different educational levels to strengthen young employees' OSH skills and knowledge. **OBJECTIVE:** To analyze OSH perceptions and attitudes among university students and to examine OSH professionals' views on OSH teaching. **METHODS:** This explorative study employs an iterative multi-method approach, including a paired comparison questionnaire for university students (N = 104) and OSH professionals (N = 40), an OSH questionnaire for university students (N = 130) and a Delphi survey for OSH professionals (N = 26). **RESULTS:** OSH perceptions and attitudes were found to vary widely among the students and some expressed somewhat stereotypical views about OSH. The results confirm the need to improve OSH education. To that end, the study reports concrete practical ideas from OSH professionals. **CONCLUSIONS:** The findings confirm the need to augment both the quality and quantity of OSH teaching at university level. Ideas are presented for future OSH teaching, along with recommendations for future studies

Moustgaard H, Clayton GL, Jones HE, Boutron I, Jorgensen L, Laursen DLT, et al. Impact of blinding on estimated treatment effects in randomised clinical trials: meta-epidemiological study. British Medical Journal. 2020; 368:l6802.

<https://doi.org/10.1136/bmj.l6802> [open access]

Abstract: **OBJECTIVES:** To study the impact of blinding on estimated treatment

effects, and their variation between trials; differentiating between blinding of patients, healthcare providers, and observers; detection bias and performance bias; and types of outcome (the MetaBLIND study). DESIGN: Meta-epidemiological study. DATA SOURCE: Cochrane Database of Systematic Reviews (2013-14). ELIGIBILITY CRITERIA FOR SELECTING STUDIES: Meta-analyses with both blinded and non-blinded trials on any topic. REVIEW METHODS: Blinding status was retrieved from trial publications and authors, and results retrieved automatically from the Cochrane Database of Systematic Reviews. Bayesian hierarchical models estimated the average ratio of odds ratios (ROR), and estimated the increases in heterogeneity between trials, for non-blinded trials (or of unclear status) versus blinded trials. Secondary analyses adjusted for adequacy of concealment of allocation, attrition, and trial size, and explored the association between outcome subjectivity (high, moderate, low) and average bias. An ROR lower than 1 indicated exaggerated effect estimates in trials without blinding. RESULTS: The study included 142 meta-analyses (1153 trials). The ROR for lack of blinding of patients was 0.91 (95% credible interval 0.61 to 1.34) in 18 meta-analyses with patient reported outcomes, and 0.98 (0.69 to 1.39) in 14 meta-analyses with outcomes reported by blinded observers. The ROR for lack of blinding of healthcare providers was 1.01 (0.84 to 1.19) in 29 meta-analyses with healthcare provider decision outcomes (eg, readmissions), and 0.97 (0.64 to 1.45) in 13 meta-analyses with outcomes reported by blinded patients or observers. The ROR for lack of blinding of observers was 1.01 (0.86 to 1.18) in 46 meta-analyses with subjective observer reported outcomes, with no clear impact of degree of subjectivity. Information was insufficient to determine whether lack of blinding was associated with increased heterogeneity between trials. The ROR for trials not reported as double blind versus those that were double blind was 1.02 (0.90 to 1.13) in 74 meta-analyses. CONCLUSION: No evidence was found for an average difference in estimated treatment effect between trials with and without blinded patients, healthcare providers, or outcome assessors. These results could reflect that blinding is less important than often believed or meta-epidemiological study limitations, such as residual confounding or imprecision. At this stage, replication of this study is suggested and blinding should remain a methodological safeguard in trials

Murray RM, Davis AL, Shepler LJ, Moore-Merrell L, Troup WJ, Allen JA, et al. A systematic review of workplace violence against emergency medical services responders. *New Solutions*. 2020; 29(4):487-503.

<https://doi.org/10.1177/1048291119893388> [open access]

Park S, Lee JH, and Lee W. The effects of workplace rest breaks on health problems related to long working hours and shift work among male apartment janitors in Korea. *Safety and Health at Work*. 2019; 10(4):512-517.

<https://doi.org/10.1016/j.shaw.2019.10.003> [open access]

Abstract: Background: Rest breaks at work are reported to reduce fatigue and job stress. Apartment janitors in Korea who perform night shift work and work long

hours can be exposed to various health problems (HPs). However, few studies have evaluated relationships between their rest breaks and HPs. This study was conducted to examine the relationships between long working hours, shift work, and insufficient rest breaks and HPs among Korean apartment janitors. Methods: Data on 1,212 selected male apartment janitors were obtained from the 3rd and 4th Korean Working Conditions Surveys. Demographic and occupational characteristics were collected using self-reported questionnaires. Rest breaks at work were classified as "sufficient" or "insufficient." Long working hours were considered as working more than 60 hours per week. Zero-inflated negative binomial (ZINB) regression was performed to investigate the effects of shift work and long working hours on HPs and the effects of rest breaks on relationships between HPs and long working hours and shift work. Results: Among those with insufficient rest breaks at work, significant associations were found between long working hours and the risk of HPs [odds ratio (OR) = 1.489; 95% confidence interval (CI) = 1.038-2.136] and work-related HPs (WRHPs) [OR 1.621; 95% CI = 1.156-2.272], and between shift work and HPs [OR = 1.603; 95% CI = 1.084-2.372]. These relationships became nonsignificant when sufficient rest breaks were provided. Conclusion: It is important to provide breaks at work to reduce HPs because of long working hours and shift work among aged workers such as apartment janitors

Schram B, Orr R, Pope R, Canetti E, and Knapik J. Risk factors for development of lower limb osteoarthritis in physically demanding occupations: a narrative umbrella review. Journal of Occupational Health. 2019; [epub ahead of print].

<https://doi.org/10.1002/1348-9585.12103>

Abstract: OBJECTIVES: Osteoarthritis (OA) is a common disorder which affects the joints. As relationships between occupational factors and lower limb OA have been widely studied in systematic reviews, the aim of this umbrella review was to synthesize their key findings in the risk factors for development of lower limb OA. METHODS: A systematic search was conducted using the databases PUBMED, Cumulative Index of Nursing and Allied Health Literature, and Elton B Stevens Company to identify reviews examining associations between lower limb OA and occupational tasks. These reviews were rated for their methodological quality before key data were extracted and synthesized. RESULTS: Sixteen reviews were found, seven pertained to the knee, four to the hip, two to a variety of joints, and three to both the hip and knee. One was deemed to be of high methodological quality, one of critically low methodological quality, and the others of moderate methodological quality. The reviews found moderate to good evidence for heavy occupational lifting to be associated with an increased risk of OA at the knee and the hip. Kneeling, squatting, and climbing, previous injuries to joints, being overweight and obese were also predictive of lower limb OA. CONCLUSION: Occupations which involve heavy physical workloads increase the risk of developing lower limb OA. Heavy lifting, squatting, knee bending, kneeling, and climbing may all increase the risk of developing OA in both the

knees and hips. Efforts to reduce exposure to these tasks, reducing joint injuries, optimizing bodyweight may reduce the risks of lower limb OA for occupations which are physically demanding

Taouk Y, Spittal MJ, LaMontagne AD, and Milner AJ. Psychosocial work stressors and risk of all-cause and coronary heart disease mortality: a systematic review and meta-analysis. *Scandinavian Journal of Work, Environment & Health*. 2020; 46(1):19-31.

<https://doi.org/10.5271/sjweh.3854>

Abstract: Objectives Psychosocial work stressors are common exposures affecting the working population, and there is good evidence that they have adverse health consequences. There is some evidence that they may impact on mortality, but this has not been systematically examined. We performed a systematic review, including risk of bias, and meta-analyses of observational studies to examine the association between psychosocial work stressors and all-cause mortality and death due to coronary heart disease (CHD). Methods Electronic databases were searched to identify studies and information on study characteristics and outcomes extracted in accordance with PRISMA guidelines. Risk estimates of outcomes associated with psychosocial work stressors: specifically, all-cause mortality, and death due to CHD were pooled using inverse variance weighted random effects meta-analysis. Results We identified 45 eligible cohort studies, of which 32 were included in the quantitative analyses of psychosocial work stressors and mortality. Low job control was associated with an increased risk of all-cause mortality [hazard ratio (HR) 1.21, 95% confidence interval (CI) 1.07-1.37, minimally-adjusted; HR 1.05, 95% CI 1.01-1.10, multivariable-adjusted; HR 1.03, 95% CI 1.00-1.06 exclusion of low quality studies and multivariable-adjusted] and CHD mortality [HR 1.50, 95% CI 1.42-1.58, minimally-adjusted; HR 1.23, 95% CI 1.17-1.30, multivariable-adjusted; HR 1.19, 95% CI 1.01-1.40, exclusion of low quality studies and multivariable-adjusted]. Conclusions Workers with low job control are at increased risk of all-cause and CHD mortality compared to workers with high job control. Policy and practice interventions to improve job control could contribute to reductions in all-cause and CHD mortality

Tassinari A and Maccarrone V. Riders on the storm: workplace solidarity among gig economy couriers in Italy and the UK. *Work, Employment and Society*. 2019; 34(1):35-54.

<https://doi.org/10.1177/0950017019862954>

*IWH authored publications