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June 21, 2019

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*Bartel E, MacEachen E, Reid-Musson E, Meyer SB, Saunders R, Bigelow P, et al. Stressful by design: exploring health risks of ride-share work. Journal of Transport & Health. 2019; 14:100571.
https://doi.org/10.1016/j.jth.2019.100571

*Lavigne-Robichaud M, Trudel X, Duchaine CS, Milot A, Gilbert-Ouimet M, Vezina M, et al. Job strain and the prevalence of uncontrolled hypertension among white-collar workers. Hypertension Research. 2019; [Epub ahead of print].
https://doi.org/10.1038/s41440-019-0278-7
Abstract: To determine whether white-collar workers treated for hypertension who are exposed to psychosocial stressors at work have a higher prevalence of uncontrolled hypertension than unexposed workers, this study conducted three waves of data collection over a 5-year period (repeated cross-sectional design). The study sample was composed of 464 white-collar workers treated for hypertension. At each collection time, ambulatory blood pressure (ABP) was measured every 15 min during the workday. Uncontrolled hypertension was defined as a mean daytime systolic ABP >/=135 mmHg and/or diastolic ABP >/=85 mmHg for non-diabetic participants and systolic ABP >/=125 mmHg and/or diastolic ABP >/=75 mmHg for diabetic participants. Job strain was evaluated with Karasek's

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demand-latitude model using validated scales for psychological demands and decision latitude. Prevalence ratios (PR) and 95% confidence intervals (CI) were estimated using generalized estimating equations, adjusting for sociodemographic and lifestyle-related risk factors. Men with job strain (high demands and low latitude) and active jobs (high demands and high latitude) had a higher prevalence of uncontrolled hypertension (PR job strain = 1.46, 95% CI: 1.07-1.98 and PR active = 1.47, 95% CI: 1.12-1.94). When considered separately, high demands were associated with a higher prevalence of uncontrolled hypertension in both men (PR highest tertile = 1.60, 95% CI: 1.25-2.06) and women (PR highest tertile = 1.60, 95% CI: 1.03-2.47). Workers exposed to psychosocial stressors at work according to the demand-latitude model had a higher prevalence of uncontrolled hypertension. Reducing these frequent exposures could help to reduce the burden of uncontrolled hypertension

*Pahwa M, Labreche F, Kim J, Harris MA, Song C, Peters CE, et al. The impact of night shift work on breast cancer: results from the Burden of Occupational Cancer in Canada Study. American Journal of Industrial Medicine. 2019; [Epub ahead of print]. https://doi.org/10.1002/ajim.22999

Abstract: BACKGROUND: We estimated the proportion and number of female breast cancer cases in Canada attributable to night shift work, a probable cause of breast cancer. METHODS: Levin's equation was used to calculate population attributable fractions (PAFs) among Canadian women who ever worked night/rotating shifts from 1961 to 2000, accounting for labor turnover and survival to the year 2011. The calculated PAFs were applied to 2011 Canadian breast cancer incidence statistics to obtain the number of attributable cases. RESULTS: Approximately 1.5 million women ever worked night/rotating shifts during 1961-2000 and survived to 2011. The PAFs ranged from 2.0% (95% confidence interval [CI]: 1.4-6.2) to 5.2% (95% CI: 3.7-13.6), and 470 to 1200 incident breast cancer cases in 2011 were likely due to shift work, of which 38% would have been diagnosed among women in health-related occupations. CONCLUSIONS: More research is needed to increase the certainty of this association, but current evidence supports workplace-based prevention

Abstract: OBJECTIVES: Psychosocial work characteristics have been prospectively associated with depressive symptoms. However, methodological limitations have raised questions regarding causality. It is also unclear to what extent depressive symptoms affect the experience of the psychosocial work environment. We examined contemporaneous (measured simultaneously) and lagged bidirectional relationships between psychosocial work characteristics and depressive symptoms, simultaneously controlling for time-stable individual characteristics. METHODS: We included 3947 subjects in the Swedish Longitudinal Occupational Survey of Health (SLOSH), with self-reported job demands, control, social support, work efforts, rewards, procedural justice and depressive symptoms in four waves 2010-2016. We applied dynamic panel models with fixed effects, using structural equation modelling, adjusting for all time-stable individual characteristics such as personality and pre-employment factors. RESULTS: Higher levels of job demands, job demands in relation to control, work efforts and efforts in relation to rewards were contemporaneously associated with more depressive symptoms (standardised beta: 0.18-0.25, p<0.001), while higher levels of workplace social support, rewards at work and procedural justice were associated with less depressive symptoms (beta: -0.18, p<0.001,beta: -0.16, p<0.001 and beta: -0.09, p<0.01, respectively). In contrast, only work efforts predicted higher levels of depressive symptoms 2 years later (beta: 0.05, p<0.05). No other lagged associations were found in any direction. CONCLUSIONS: After controlling for all time-invariant confounding, our results suggest that psychosocial work characteristics predominantly affect depressive symptoms immediately or with only a short time lag. Furthermore, we found no evidence of reverse causation. This indicates short-term causal associations, although the temporal precedence of psychosocial work characteristics remains uncertain

Babu KM, Brent J, and Juurlink DN. Prevention of opioid overdose. New England Journal of Medicine. 2019; 380(23):2246-2255.
https://doi.org/10.1056/NEJMra1807054

Barkhordari A, Malmir B, and Malakoutikhah M. An analysis of individual and social factors affecting occupational accidents. Safety and Health at Work. 2019; 10(2):205-212.
https://doi.org/10.1016/j.shaw.2019.01.002   [open access]

Abstract: Background Workforce health is one of the primary and most challenging issues, particularly in industrialized countries. This article aims at modeling the major factors affecting accidents in the workplace, including general health, work-family conflict, effort-reward imbalance, and internal and external locus of control. Methods A cross-sectional study was conducted in Esfahan Steel Company in Iran. A total of 450 participants were divided into two groups-control and case-and the questionnaires were distributed among them. Data were collected through a 7-part questionnaire. Finally, the results were analyzed using SPSS 22.0 and Amos software. Results All the studied variables had a significant relationship with the accident proneness. In the case group, general health with a coefficient of -0.37, work-family conflict with 0.10, effort-reward imbalance with 0.10, internal locus of control with -0.07, and external locus of control with 0.40 had a direct effect on occupational stress. Occupational stress also had a positive direct effect on accident proneness with a coefficient of 0.47. In addition, fitness indices of control group showed general health (-0.35), work-family conflict (0.36), effort-reward imbalance (0.13), internal locus of control (-0.15), and external locus of control (0.12) have a direct effect on occupational stress. Besides, occupational stress with a coefficient of 0.09 had a direct effect on accident proneness. Conclusion It can be concluded that although previous studies and the present study showed the effect of stress on accident and accident proneness, some hidden and external factors such as work-family conflict, effort-reward imbalance, and external locus of control that affect stress should also be considered. It helps industries face less occupational stress and, consequently, less occurrence rates of accidents.

Callahan CL, Friesen MC, Locke SJ, Dopart PJ, Stewart PA, Schwartz K, et al. Case-control investigation of occupational lead exposure and kidney cancer. Occupational and Environmental Medicine. 2019; 76(7):433-440.
https://doi.org/10.1136/oemed-2018-105327

Abstract: OBJECTIVES: Lead is a suspected carcinogen that has been inconsistently associated with kidney cancer. To clarify this relationship, we conducted an analysis of occupational lead exposure within a population-based study of kidney cancer using detailed exposure assessment methods. METHODS: Study participants (1217 cases and 1235 controls), enrolled between 2002 and 2007, provided information on their occupational histories and, for selected lead-related occupations, answered questions regarding workplace tasks, and use of protective equipment. Industrial hygienists used this information to develop several estimates of occupational lead exposure, including probability, duration and cumulative exposure. Unconditional logistic regression was used to compute ORs and 95% CIs for different exposure metrics, with unexposed subjects serving as the reference group. Analyses were also conducted stratifying on several factors, including for subjects of European ancestry only, single nucleotide polymorphisms in ALAD (rs1805313, rs1800435, rs8177796, rs2761016), a gene involved in lead toxicokinetics. RESULTS: In our study, cumulative occupational lead exposure was not associated with kidney cancer (OR 0.9, 95% CI 0.7 to 1.3 for highest quartile vs unexposed; ptrend=0.80). Other lead exposure metrics were similarly null. We observed no evidence of effect modification for the evaluated ALAD variants (subjects of European ancestry only, 662 cases and 561 controls) and most stratifying factors, although lead exposure was associated with increased risk among never smokers. CONCLUSIONS: The findings of this study do not offer clear support for an association between occupational lead exposure and kidney cancer

Dobri SCD, Moslehi AH, and Davies TC. Are oral fluid testing devices effective for the roadside detection of recent cannabis use? A systematic review. Public Health. 2019; 171:57-65.
https://doi.org/10.1016/j.puhe.2019.03.006

Abstract: OBJECTIVES: Although laws related to drug impairment may deter some drivers, enforcement requires effective detection.

There are different methods and devices to test for cannabis use, but it is unclear if these devices meet the necessary criteria to be implemented at the roadside. This systematic review synthesized research that investigated on-site oral fluid drug screening devices. STUDY DESIGN: This is a systematic review. METHODS: Eight databases (PubMed, Web of Science, MEDLINE, Engineering Village, Embase, Compendex, CINAHL, and Scopus) were searched to identify research that had evaluated the effectiveness of oral fluid testing devices. Fifteen articles that used an on-site testing device to detect cannabis use were selected for review. RESULTS: There is a lack of standardized test protocols with respect to biological matrices used for confirmation analysis (blood and oral fluid), concentration detection cutoff, population sample, and contamination with other drugs (alcohol). There is also a lack of device consistency making it difficult to draw conclusions. Sensitivity, specificity, and accuracy of nine devices showed that none of the current devices meet the minimum requirements suggested by the ROSITA, ROSITA-2, and DRUID projects (80% for all three parameters). CONCLUSIONS: The results of this systematic review indicated that the devices with the ability to detect lower Delta9-tetrahydrocannabinol concentration levels achieved better results with respect to sensitivity, specificity, and accuracy than those with higher detection levels. However, research must be focused on developing a roadside detection oral fluid technique that meets the ROSITA, ROSITA-2, and DRUID projects' guidelines

Gershuni O, Czabanowska K, Burazeri G, Cichowska MA, and Von Krauss MK. Is there a golden recipe? A scoping review of public health workforce development. European Journal of Public Health. 2019; 29(3):401-408.
https://doi.org/10.1093/eurpub/cky247
Abstract: BACKGROUND: This study intended to design a suitable and comprehensive approach for a public health workforce development plan with the ultimate goal of meeting the health objectives in different European Region countries. METHODS: We performed a scoping review, including an accurate and exhaustive country-specific hand-search process, mapping the key concepts and practices used in public health workforce development based on the available evidence worldwide. RESULTS: We identified nine

comparative measures, based on common features from a scoping literature review, for the assessment of public health workforce development plans available in selected countries. This list of nine comparative measures includes: (i) Alignment between the 10 Essential Public Health Operations (EPHOs) or core public health functions and organizational resources and public health priority areas; (ii) Regulations and Norms; (iii) Capacity Assessment; (iv) Datasets and Databases; (v) Workforce Development Strategies, Planning and Management; (vi) Education, Training, Core Competencies and Models; (vii) Licensing, Accreditation and Credentialing; (viii) Forecasting Strategies for Enumerating and Quotas and (ix) Ethical and Professional Codes of Conduct. These measures are essential to develop, sustain and modernize the public health workforce effectively. CONCLUSION: We propose a well-balanced set of measures for countries aiming to improve or develop their public health workforce based on instruments that are successfully used and applied in a wide range of countries with different public health systems. However, the implementation should be tailored and adopted according to the specific country context and available recourses

Karlsson ND, Markkanen PK, Kriebel D, Gore RJ, Galligan CJ, Sama SR, et al. Home care aides' experiences of verbal abuse: a survey of characteristics and risk factors. Occupational and Environmental Medicine. 2019; 76(7):448-454.
https://doi.org/10.1136/oemed-2018-105604   [open access]

Abstract: OBJECTIVE: Violence from care recipients and family members, including both verbal and physical abuse, is a serious occupational hazard for healthcare and social assistance workers. Most workplace violence studies in this sector focus on hospitals and other institutional settings. This study examined verbal abuse in a large home care (HC) aide population and evaluated risk factors. METHODS: We used questionnaire survey data collected as part of a larger mixed methods study of a range of working conditions among HC aides. This paper focuses on survey responses of HC aides (n=954) who reported on verbal abuse from non-family clients and their family members. Risk factors were identified in univariate and multivariable analyses. RESULTS: Twenty-two per cent (n=206) of aides reported at least one incident of verbal abuse in the 12 months

before the survey. Three factors were found to be important in multivariable models: clients with dementia (relative risk (RR) 1.38, 95% CI 1.07 to 1.78), homes with too little space for the aide to work (RR 1.52, 95% CI 1.17 to 1.97) and predictable work hours (RR 0.74, 95% CI 0.58 to 0.94); two additional factors were associated with verbal abuse, although not as strongly: having clients with limited mobility (RR 1.35, 95% CI 0.94 to 1.93) and an unclear plan for care delivery (RR 1.27, 95% CI 0.95 to 1.69). Aides reporting verbal abuse were 11 times as likely to also report physical abuse (RR 11.53; 95% CI 6.84 to 19.45). CONCLUSIONS: Verbal abuse is common among HC aides. These findings suggest specific changes in work organisation and training that may help reduce verbal abuse

Luhnen M, Prediger B, Neugebauer EAM, and Mathes T. Systematic reviews of health economic evaluations: a structured analysis of characteristics and methods applied. Research Synthesis Methods. 2019; 10(2):195-206.
https://doi.org/10.1002/jrsm.1342

Abstract: INTRODUCTION: The number of systematic reviews of health economic evaluations (SR-HEs) is increasing. We aimed at providing a detailed overview of the characteristics and applied methods in recently published SR-HEs. METHODS: We searched MEDLINE (03/2017) for SR-HEs published since 2015 using validated search filters. We included studies that performed a systematic review of full economic evaluations and searched at least one electronic database. We extracted data in a standardized, beforehand piloted form that was deduced from the items of the PRISMA and CHEERS checklists. Data were extracted by one reviewer, and a 10% random sample was verified by a second. We prepared descriptive statistical measures to describe the SR-HEs. RESULTS: We included 202 SR-HEs. We identified similarities especially in the methods for information retrieval. Study selection, data extraction, and assessment of quality and transferability were frequently not reported or performed without taking measures to reduce errors (eg, independent study selection). A wide range of different tools was applied for critical appraisal. Moreover, the reporting of included economic evaluations and the synthesis of their results showed strong variations. CONCLUSIONS: Overall, we identified few common features in the applied methods for SR-HEs.

The information retrieval processes are largely standardized, but many studies did not use validated search filters. For the other systematic review steps, the methodological approaches varied. In particular, important challenges seem to be the methodological quality and transferability assessment as well as presentation and (quantitative) synthesis of results. Efforts are needed for increasing standardization, quality of applied methods, and reporting of SR-HEs

Nord D and Grossi T. Using data to advance Employment First: opportunities and direction. Journal of Vocational Rehabilitation. 2019; 50(3):259-262.
https://doi.org/10.3233/JVR-191005

Nordenmark M, Hagqvist E, and Vinberg S. Sickness presenteeism among the self-employed and employed in northwestern Europe: the importance of time demands. Safety and Health at Work. 2019; 10(2):224-228.
https://doi.org/10.1016/j.shaw.2019.01.003   [open access]
Abstract: Background European policymakers encourage individuals to become self-employed because it is a way to promote innovation and job creation. It can be assumed that health and well-being among the self-employed and managers in small-scale enterprises are particularly crucial in this enterprise group because the smallness of the enterprise makes its members vulnerable. Earlier studies have indicated that the self-employed have a high working pace and work for long and irregular hours, indicating that it can be difficult to stay at home because of sickness. The purpose of this study is to investigate the occurrence of sickness presenteeism among the self-employed in relation to the organizationally employed and to analyze whether any differences can be explained by higher work demands among the self-employed. Methods The study is based on the fifth European survey on working conditions (2010) and includes the northwestern European countries in the survey. The questions cover a wide range of topics designed to meet the European Union's political needs. The main variables in this study are sickness presenteeism and several indicators of time demands. Results The results show that the self-employed report a higher level of sickness presenteeism than the employed: 52.4 versus 43.6%. All indicators of time demands are significantly related to the risk for sickness presenteeism, also when

controlling for background characteristics. Conclusion The results confirm that the level of sickness presenteeism is higher among the self-employed and that high time demands are a major explanation to this

Pollock A and van Wijck F. Cochrane overviews: how can we optimize their impact on evidence-based rehabilitation? European Journal of Physical & Rehabilitation Medicine. 2019; 55(3):395-410.
https://doi.org/10.23736/S1973-9087.19.05780-0   [open access]

Abstract: INTRODUCTION: Overviews (i.e. reviews of multiple systematic reviews) comprise a relatively novel methodology to systematically synthesize research findings. Overviews aim for a beneficial impact on clinical practice, but their methods and pathways to impact have so far not been mapped. The aim of this paper was to inform recommendations for optimizing impact on rehabilitation practice and research by mapping methods and pathways to impact in Cochrane overviews relevant to rehabilitation. EVIDENCE ACQUISITION: We systematically searched and identified published Cochrane overviews (to June 2018) relevant to rehabilitation. We extracted data and compared overviews on key characteristics, methods of evidence synthesis, statements about impact, and access metrics. We explored one overview in detail regarding beneficiaries, activities and outputs, mapped potential pathways to impact, and, using an iterative process, refined this into a generic map. Through exploration of all synthesized data, we propose further recommendations for planning, conducting and reporting of future overviews in order to optimize impact on rehabilitation. EVIDENCE SYNTHESIS: We identified seven Cochrane overviews relevant to rehabilitation. Their focus and methods varied, but they were broadly related to rehabilitation interventions for populations of people with diverse long-term conditions. Overviews also varied regarding their intended impact; only 4 overviews identified specific beneficiaries. All overviews included multiple tables and figures, but only one synthesized key findings into a single figure. For five overviews, the Altmetric Attention Score (a weighted count of attention that an output receives based on a range of online sources) was in the top 5% of all research outputs scored by Altmetric. The overview within our worked example had four key impact goals, each with different beneficiaries

and required actions; this example led to a generic map of potential pathways to impact for other overviews. CONCLUSIONS: Cochrane overviews have the potential to play a key role in knowledge translation and therefore to be useful in supporting evidence-based rehabilitation practice. However, current overviews relating to rehabilitation differ in methods, approaches and intended impact, and sometimes fall short of promoting easy access to key information for beneficiaries. Future Cochrane overviews should address topics of importance to key beneficiaries and clearly outline potential pathways to impact in order to have a potential beneficial impact on evidence-based rehabilitation and to improve rehabilitation outcomes

Serrano-Fernandez MJ, Boada-Grau J, Robert-Sentis L, and Vigil-Colet A. Predictive variables for musculoskeletal problems in professional drivers. Journal of Transport & Health. 2019; 14:100576.
https://doi.org/10.1016/j.jth.2019.100576

Stienen MN, Ho AL, Staartjes VE, Maldaner N, Veeravagu A, Desai A, et al. Objective measures of functional impairment for degenerative diseases of the lumbar spine: a systematic review of the literature. Spine Journal. 2019; 19(7):1276-1293.
https://doi.org/10.1016/j.spinee.2019.02.014

Abstract: BACKGROUND CONTEXT: The accurate determination of a patient's functional status is necessary for therapeutic decision-making and to critically appraise treatment efficacy. Current subjective patient-reported outcome measure (PROM)-based assessments have limitations and can be complimented by objective measures of function. PURPOSE: To systematically review the literature and provide an overview on the available objective measures of function for patients with degenerative diseases of the lumbar spine. STUDY DESIGN/SETTING: Systematic review of the literature. METHODS: The Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines were followed. Two reviewers independently searched the PubMed, Web of Science, EMBASE, and SCOPUS databases for permutations of the words "objective," "assessment," "function," "lumbar," and "spine" including articles on human subjects with degenerative diseases of the lumbar spine that reported on objective measures of function, published until

September 2018. Risk of bias was not assessed. No funding was received. The authors report no conflicts of interest. RESULTS: Of 2,389 identified articles, 82 were included in the final analysis. There was a significant increase of 0.12 per year in the number of publications dealing with objective measures of function since 1989 (95% CI 0.08-0.16, p<.001). Some publications studied multiple diagnoses and objective measures. The United States was the leading nation in terms of scientific output for objective outcome measures (n=21; 25.6%), followed by Switzerland (n=17; 20.7%), Canada, Germany, and the United Kingdom (each n=6; 7.3%). Our search revealed 21 different types of objective measures, predominantly applied to patients with lumbar spinal stenosis (n=67 publications; 81.7%), chronic/unspecific low back pain (n=28; 34.2%) and lumbar disc herniation (n=22; 26.8%). The Timed-Up-and-Go test was the most frequently applied measure (n=26 publications; 31.7%; cumulative number of reported subjects: 5,181), followed by the Motorized Treadmill Test (n=25 publications; 30.5%, 1,499 subjects) and with each n=9 publications (11.0%) the Five-Repetition Sit-To-Stand test (955 subjects), as well as accelerometry analyses (336 subjects). The reliability and validity of many of the less-applied objective measures was uncertain. There was profound heterogeneity in their application and interpretation of results. CONCLUSIONS: Clinical studies on patients with lumbar degenerative diseases increasingly employ objective measures of function, which offer high potential for improving the quality of outcome measurement in patient-care and research. This review provides an overview on available options. Our findings call for an agreement and standardization in terms of test selection, conduction and analysis to facilitate comparison of results across cohorts. PROSPERO REGISTRATION NUMBER: CRD42019122622

Wright N, Hollohan J, Pozniak E, and Ruehlen P. The development of the occupational health and safety profession in Canada. Safety Science. 2019; 117:133-137.
https://doi.org/10.1016/j.ssci.2019.04.005

*IWH authored publications.

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