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**\*Furlan AD, Severin C, Harbin S, Irvin E, Carnide N, Nowrouzi-Kia B, Macdonald S, Thompson A, Liao Q, Smith P, Adisesh A. ECHO OEM virtual community of learning for primary care. *Occupational Medicine*. 2024.**

**<https://doi.org/10.1093/occmed/kqae067> [open access]**

Abstract: BACKGROUND: Health issues caused and/or exacerbated by work are common in patients seeking primary health care. Yet, primary care providers generally receive little or no training in the assessment and management of occupational injuries and illnesses. AIMS: To conduct a pilot project to develop, implement and evaluate a programme to teach occupational and environmental medicine to primary healthcare providers. METHODS: We followed the Extensions for Community Healthcare Outcomes (ECHO) model to connect primary healthcare providers with experts in Occupational and Environmental Medicine (OEM). We employed an observational pre-post study design to assess changes in self-efficacy, knowledge, attitudes and beliefs towards OEM. RESULTS: From September 2021 to June 2022, we offered two cycles of 12 sessions each. Participants came from medicine, nursing, psychology, occupational and physical therapy, chiropractic, kinesiology, social work, and pharmacy. Sixty-seven participants completed both pre- and post-ECHO questionnaires. Self-efficacy and knowledge ratings significantly increased after attendance at ECHO compared to the pre-ECHO responses. Attitudes and beliefs were unchanged in most of the items assessed. Participants rated their satisfaction with ECHO between 59% and 97%. CONCLUSIONS: Our pilot study demonstrated the challenges in implementing the first ECHO OEM in Canada. Findings show acceptability and satisfaction, improved self-efficacy, and small increases in knowledge, but not overall attitudes and beliefs. There is a need to understand barriers to participation and to target participants with less knowledge and experience in occupational and environmental medicine

**Baltrusch SJ, Krause F, de Vries AW, and de Looze MP. Arm-support exoskeleton reduces shoulder muscle activity in ceiling construction. *Ergonomics*. 2024; 67(8):1051-1063.**

<https://doi.org/10.1080/00140139.2023.2280443>

Abstract: The objective of this study was to assess the efficacy and user's impression of an arm-support exoskeleton in complex and realistic ceiling construction tasks. 11 construction workers performed 9 tasks. We determined objective and subjective efficacy of the exoskeleton by measuring shoulder muscle activity and perceived exertion. User's impression was assessed by questionnaires on expected support, perceived support, perceived hindrance and future intention to use the exoskeleton. Wearing the exoskeleton yielded persistent reductions in shoulder muscle activity of up to 58% and decreased perceived exertion. Participants reported limited perceived hindrance by the exoskeleton, as also indicated by no increase in antagonistic muscle activity. The findings demonstrate the high potential of an arm-support exoskeleton for unloading the shoulder muscles when used in the dynamic and versatile working environment of a ceiling construction worker, which is in line with the consistent intention of the workers to use the exoskeleton in the future. Practitioner Summary: The majority of research focuses on the effect of using an arm-support exoskeleton during isolated postures and prescribed movements. We investigated the efficacy of an exoskeleton during a complex and realistic work, namely ceiling construction. Shoulder muscle activity was lower in almost all tasks when wearing the exoskeleton

**Bernt Jorgensen SM, Johnsen NF, Maribo T, Brondum S, Gislason G, and Kristiansen M. Factors shaping return to work: a qualitative study among heart failure patients in Denmark. *Disability and Rehabilitation*. 2024; 46(18):4205-4215.**

<https://doi.org/10.1080/09638288.2023.2266998>

Abstract: Purpose: For people of working-age diagnosed with heart failure, return to work (RTW) is often a significant rehabilitation goal. To inform vocational rehabilitation strategies, we conducted a qualitative study aiming at exploring patient experienced support needs, and barriers and facilitators to RTW. Materials and methods: Ten men and eight women with heart failure (48-60 years) were interviewed in Denmark during 2022. A thematic analysis was conducted using the Sherbrooke model as framework. Results: Multiple factors operating at different levels shaped participants' RTW processes. Personal factors included motivation, mental and physical health, social relations, and financial concerns. Factors in the health care system shaping RTW included access to medical treatment, mental health care, and cardiac rehabilitation. Factors in workplace system shaping RTW included job type, employer support, and social relations. Factors in the legislative and insurance system shaping RTW included authorities' administration of sickness benefits, professional assistance, vocational counselling, and interdisciplinary cooperation. Conclusion: Findings illustrate a need to include vocational rehabilitation within comprehensive cardiac rehabilitation programmes, to identify people in need of support, to improve the coordination of care across the health and social care sectors, and to involve employers, health care professionals, and social workers in individualised RTW strategies.

**Bramberg E, Ahsberg E, Fahlstrom G, Furberg E, Gornitzki C, Ringborg A, et al. Effects of work-directed interventions on return-to-work in people on sick-leave for to common mental disorders: a systematic review. International Archives of Occupational & Environmental Health. 2024; 97(6):597-619.**

<https://doi.org/10.1007/s00420-024-02068-w> [open access]

**Abstract:** Purpose: To evaluate the body of evidence of the effects of work-directed interventions on return-to-work for people on sick leave due to common mental disorders (i.e., mild to moderate depression, anxiety, adjustment disorders and reactions to severe stress). Methods: The systematic review was conducted in accordance with an a priori developed and registered protocol (Prospero CRD42021235586). The certainty of evidence was assessed by two independent reviewers using the Grading of Recommendations, Assessment, Development and Evaluations. Results: We reviewed 14,794 records published between 2015 and 2021. Of these, eight RCTs published in eleven articles were included in the analysis. Population: Working age adults (18 to 64 years), on sick leave due to mild to moderate depression, anxiety, adjustment disorders or reactions to severe stress. Intervention: Work-directed interventions. Comparator: No comparator, Standard care, or other measures. Outcome: return to work, number of days on sick leave, income. Overall, the effects of work-focused CBT and work-focused team-based support on RTW resulted in increased or faster return-to-work compared with standard care or no intervention (low certainty of evidence). The effects of Individual Placement and Support showed no difference in RTW compared with standard care (very low certainty of evidence). Conclusion: Interventions involving the workplace could increase the probability of RTW. Areas in need of improvement in the included studies, for example methodological issues, are discussed. Further, suggestions are made for improving methodological rigor when conducting large scale trials.

**Duong P, Egan M, Meyer M, Morrison T, and Sauve-Schenk K. The impact of stroke on employment income: a cohort study using hospital and income tax data in Ontario, Canada. Clinical Rehabilitation. 2024; 38(8):1109-1117.**

<https://doi.org/10.1177/02692155241249345> [open access]

**Abstract:** OBJECTIVE: To document the impact of stroke on employment income among people employed at the time of stroke. DESIGN: Population-based cohort study. PARTICIPANTS: People hospitalized for stroke in Ontario, Canada (2010-2014) and people without stroke matched on demographic characteristics. MAIN MEASURES: Robust Poisson regression to estimate the effects of stroke on the probability of reporting employment income on tax returns over 3 years. Quantile regression difference-in-differences to estimate the changes in annual employment income attributable to stroke. RESULTS: Stroke survivors were increasingly less likely to report any employment income poststroke, incidence rate ratios (IRR) 0.87 at 1 year (95% confidence intervals [CI]; 0.85-0.88), 0.82 at 2 years (95% CI; 0.81-0.84) and 0.81 at 3 years (95% CI; 0.79-0.82). IRR for reporting at least 50% of prestroke income levels were 0.76 at 1 year (95% CI; 0.75-0.78), 0.75 at 2 years (95% CI; 0.73-0.77) and 0.73 at 3 years (95% CI; 0.71-0.75). IRR for reporting at least 90% of prestroke income levels were 0.72 at 1 year (95% CI; 0.70-0.74), 0.66 at 2 years (95% CI; 0.64-0.68) and again 0.66 at 3 years (95% CI; 0.64-0.68). Relative changes in annual employment income attributable to stroke varied from a decrease of 13.8% (95% CI; 8.7-18.9) at the 75th income percentile to a decrease of 43.1% (95% CI; 18.7-67.6) at the 25th income percentile. CONCLUSIONS: It is important for healthcare and service providers to recognize the impact of stroke on return to

prestroke levels of employment income. Low-income stroke survivors experience a more drastic loss in employment income and may need additional social support

**Falten R, Berntson E, and Bernhard O. How are organisational conditions related to illegitimate tasks among managers and their subordinates in the public sector? A Swedish study. *Work and Stress*. 2024; 38(3):270-292.**

<https://doi.org/10.1080/02678373.2024.2309627> [open access]

Abstract: Illegitimate tasks violate the norms of what is considered part of the employee's work role and have been found to harm individuals, groups and organisations. The purpose of this study was to investigate the relationship between key organisational conditions – span of control, recruitment needs, administrative support and organisational changes – and the prevalence of unnecessary and unreasonable illegitimate tasks experienced by managers and their subordinates. Data were collected from a sample comprising 80 managers and 863 subordinates in a Swedish municipality using questionnaires to assess their perceptions of illegitimate tasks. Organisational conditions were collected from the human resources register in the municipality. Multilevel analysis results reveal a positive association between the size of workgroups and illegitimate tasks; the more subordinates per workgroup, the more unnecessary and unreasonable tasks managers reported and the more unreasonable tasks the subordinates reported. These findings hold practical implications for organisations because they indicate that illegitimate tasks can be reduced by decreasing the number of employees in larger workgroups.

**Gonzales A, Lin JH, and Cha JS. A year-long case study of multicomponent interventions to promote physical activity in office workers: a randomized control trial. *Applied Ergonomics*. 2024; 120:104333.**

<https://doi.org/10.1016/j.apergo.2024.104333>

Abstract: The purpose of this study was to identify if workplace interventions, (i.e., mindfulness classes and monetary incentives for gym attendance), influenced workers' physical activity. Office-based participants were randomized into one of four intervention assignments: 1) CONTROL (no interventions) (n = 40), 2) MINDFULNESS (n = 33), 3) GYM INCENTIVE (n = 41), or 4) BOTH mindfulness and gym incentive (n = 31). Activity-tracker and self-reported metabolic expenditure and step counts were gathered between January 2020 and December 2020 whereas the eight-week long interventions were provided between January and March 2020, when the impact of COVID-19 pandemic started. While physical activity decreased during the follow-up months, percent changes of physical activity at 1-, 2-, and 9-month follow-ups compared to baseline show no significant differences between or across the four intervention assignments ( $p > 0.05$ ). These results suggest that the intervention assignments had no effect on physical activity from baseline. The lack of effectiveness of these interventions on participant physical activity could be attributed to the influence of the COVID-19 pandemic, and any effects of the interventions could not outweigh the effects of the pandemic.

**Kyung M, Lee SJ, Wagner LM, Harris-Adamson C, and Hong O. Factors associated with reporting attitudes of work-related musculoskeletal disorders among direct care workers in South Korea. *Workplace Health & Safety*. 2024; 72(8):345-353.**

<https://doi.org/10.1177/21650799241247078> [open access]

**Abstract:** BACKGROUND: Workers' reporting of work-related injuries or illnesses is important for treatment and prevention, yet research often focuses on reporting barriers. This study aimed to identify factors related to work-related musculoskeletal disorder (WRMSD) reporting attitudes and their connection to reporting intention and behavior. METHODS: We analyzed data from 377 direct care workers employed in 19 long-term care facilities in South Korea. A self-administered questionnaire collected demographics, job characteristics, physical and psychosocial factors, musculoskeletal symptoms, reporting attitudes, and WRMSD reporting intentions and behavior between May and August 2022. We used a generalized linear mixed model with a random intercept by employers to identify factors influencing reporting attitudes. To explore the relationship between reporting attitude and reporting intention and behavior, simple logistic regression was also conducted. RESULTS: We achieved an 86% response rate. The majority of the study participants were female (87.2%), married (95.9%), and non-immigrant (72.8%). Of the study participants, 48.9% had no intention to report WRMSDs, and 44.3% held negative reporting attitudes. Among 200 workers with WRMSDs, 86.5% did not report them. Attitudes were associated with work duration, safety training, management safety priority, WRMSD experience, and symptom severity and frequency. Management safety priority did not moderate this relationship. Significant links existed between attitudes and reporting intention and behavior. CONCLUSIONS/APPLICATIONS TO PRACTICE: This study highlights the vital influence of workers' attitudes on reporting work-related injuries and illnesses. Occupational health providers should employ strategies, such as tailored safety training and management commitment, with a focus on addressing the unique needs of long-tenured and musculoskeletal-exposed workers. Fostering a safety culture that promotes open and timely reporting is crucial, and implementing these strategies can significantly enhance workplace safety and health

**Lee HJ, Tomas J, Probst TM, and Lindgren RJ. Production pressure, cognitive failures, and injuries under an insecure job climate. *International Journal of Stress Management*. 2024; 31(2):174-183.**

<https://doi.org/10.1037/str0000315>

**Marzocchi I, Nielsen K, Di Tecco C, Vignoli M, Ghelli M, Ronchetti M, et al. Job demands and resources and their association with employee well-being in the European healthcare sector: a systematic review and meta-analysis of prospective research. *Work and Stress*. 2024; 38(3):293-320.**

<https://doi.org/10.1080/02678373.2024.2308812>

**Oni OZ, Olanrewaju A, and Khor SC. Sustainable model for improving construction industry health and safety practices. *Journal of Construction Engineering and Management*. 2024; 150(10):04024137.**

<https://doi.org/10.1061/JCEMD4.COENG-14122>

**Pulignano V, Grimshaw D, Domecka M, and Vermeerbergen L. Why does unpaid labour vary among digital labour platforms? Exploring socio-technical platform regimes of worker autonomy. *Human Relations*. 2024; 77(9):1243-1271.**

<https://doi.org/10.1177/00187267231179901>

**Stoppa G, Mensi C, Fazzo L, Minelli G, Manno V, Marinaccio A, et al. Ovarian cancer deaths attributable to asbestos exposure in Lombardy (Italy) in 2000-2018. *Occupational and Environmental Medicine*. 2024; 81(7):359-365.**

<https://doi.org/10.1136/oemed-2023-109342> [open access]

Abstract: Objectives: We aimed to estimate the fraction of deaths from ovarian cancer attributable to asbestos exposure in Lombardy Region, Italy, using a novel approach that exploits the fact that ovarian cancer asbestos exposure is associated with pleural cancer and other risk factors for breast cancer. Methods: This ecological study is based on the Italian National Institute of Statistics mortality data. We formulate a trivariate Bayesian joint disease model to estimate the attributable fraction (AF) and the number of ovarian cancer deaths attributable to asbestos exposure from the geographic distribution of ovarian, pleural and breast cancer mortality at the municipality level from 2000 to 2018. Expected deaths and standardised mortality ratios were calculated using regional rates. Results: We found shared dependencies between ovarian and pleural cancer, which capture risk factors common to the two diseases (asbestos exposure), and a spatially structured clustering component shared between ovarian and breast cancer, capturing other risk factors. Based on 10 462 ovarian cancer deaths, we estimated that 574 (95% credibility interval 388-819) were attributable to asbestos (AF 5.5%; 95% credibility interval 3.7-7.8). AF reaches 34%-47% in some municipalities with known heavy asbestos pollution. Conclusions: The impact of asbestos on ovarian cancer occurrence can be relevant, particularly in areas with high asbestos exposure. Estimating attributable cases was possible only by using advanced Bayesian modelling to consider other risk factors for ovarian cancer. These findings are instrumental in tailoring public health surveillance programmes and implementing compensation and prevention policies.

**Uddin H, Hasan MK, Cuartas-Alvarez T, and Castro-Delgado R. Effects of mass casualty incidents on anxiety, depression, and post-traumatic stress disorder among doctors and nurses: a systematic review. *Public Health*. 2024; 234:132-142.**

<https://doi.org/10.1016/j.puhe.2024.06.001> [open access]

Abstract: OBJECTIVES: Doctors and nurses suffer different mental health conditions following traumatic incidents. We systematically synthesized existing evidence on the prevalence of anxiety, depression, and post-traumatic stress disorder (PTSD) and their associated risk factors among doctors and nurses following mass casualty incidents (MCIs). STUDY DESIGN: Systematic review. METHODS: Seven databases were searched (2010-2022) with peer-reviewed articles in English using the predefined keywords. Two reviewers screened the titles, abstracts, and full texts using the eligibility criteria and extracted data independently. We used the National Institutes of Health Quality Assessment Tools (NIH-QAT) and the Critical Appraisal Skills Programme checklist (CASP) to measure the quality appraisal of the included studies. RESULTS: A total of 5170 articles were retrieved, and 2512 articles were assessed by title and abstract (53 were eligible for full-text review). Finally, we included 19 studies. Most were assessed as of fair quality with a considerable risk of bias. PTSD was the highest-reported mental health condition. Nurses reported higher mental conditions, particularly

PTSD. Two sets of risk factors (personal and workplace) are associated with anxiety, depression, and PTSD were found. CONCLUSIONS: MCIs have a significant impact on the mental health outcomes of emergency health workers. Preventive measures should be designed considering the high-risk group, personal, and organizational risk factors of mental health outcomes

**Villarreal RT, Kim SY, and Yu D. Worker and work-related factors influence on musculoskeletal symptoms among veterinary surgeons. *Ergonomics*. 2024; 67(8):1064-1079.**

<https://doi.org/10.1080/00140139.2023.2280830>

Abstract: Worker and work-related musculoskeletal symptoms are prevalent among surgeons operating on human patients. Despite incidence rates for accidents among veterinarians and their staff being 2.9 times higher than that of general practitioners of human medicine, little is known about musculoskeletal symptoms among veterinary surgeons. In this study, 212 board-certified members of the American College of Veterinary Surgeons responded to a survey regarding various work-related activities and their experience with musculoskeletal symptoms in 10 different body regions. Across all body regions, reported pain increased from before to after a typical day of surgery ( $p < .01$ ). Gender, weight, age, and years performing surgery were worker factors that were related to pain ( $p < .05$ ), while number of procedures, practice focus, and proportion of minimally invasive surgery were work factors related to pain ( $p < .05$ ). Our findings suggest that musculoskeletal symptoms are prevalent among veterinary surgeons and may help provide evidence for guidelines for minimising musculoskeletal injuries in veterinary surgery. Practitioner summary: Little is known about the risk factors for musculoskeletal symptoms (MSS) among veterinary surgeons. This cross-sectional survey of veterinary surgeons investigates worker and work factors related to MSS. We show that MSS are prevalent and identify key factors providing evidence that MSS are a concern in veterinary surgery

**Webster-Clark M, Ross RK, Keil AP, and Platt RW. Variable selection when estimating effects in external target populations. *American Journal of Epidemiology*. 2024; 193(8):1176-1181.**

<https://doi.org/10.1093/aje/kwae048> [open access]

Abstract: External validity is an important part of epidemiologic research. To validly estimate effects in specific external target populations using a chosen effect measure (ie, "transport"), some methods require that one account for all effect measure modifiers (EMMs). However, little is known about how including other variables that are not EMMs (ie, non-EMMs) in adjustment sets affects estimates. Using simulations, we evaluated how inclusion of non-EMMs affected estimation of the transported risk difference (RD) by assessing the impacts of covariates that (1) differ (or not) between the trial and the target, (2) are associated with the outcome (or not), and (3) modify the RD (or not). We assessed variation and bias when covariates with each possible combination of these factors were used to transport RDs using outcome modeling or inverse odds weighting. Inclusion of variables that differed in distribution between the populations but were non-EMMs reduced precision, regardless of whether they were associated with the outcome. However, non-EMMs associated with selection did not amplify bias resulting from omission of necessary EMMs. Including all variables associated with the outcome may result in unnecessarily imprecise estimates when estimating treatment effects in external target populations

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