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Journal articles marked with an asterisk indicate an IWH scientist or adjunct scientist is included in the list of authors.

***Gevers-Montoro C, Deldar Z, Furlan A, Lazar EA, Ghalibaf E, Ortega-De Mues A, et al. From hands-on to remote: moderators of response to a novel self-management telehealth programme during the COVID-19 pandemic. *European Journal of Pain*. 2022; [epub ahead of print].**

<https://doi.org/10.1002/ejp.1968>

Abstract: Background: In March 2020, state-wide lockdowns were declared in many countries, including Spain. Citizens were confined to their homes and remotely supported activities were prioritized as an alternative to in-person interactions. Previous data suggest that remote and self-management interventions may be successful at reducing pain and related psychological variables. However, individual factors influencing the effectiveness of these interventions remain to be identified. We aimed to investigate the psychological and motivational factors moderating changes in pain observed in chiropractic patients undertaking a novel telehealth self-management programme. Methods: A cohort of 208 patients from a chiropractic teaching clinic was recruited to participate in the study. Patients received telehealth consultations and individualized self-management strategies tailored for their current complaint. They were encouraged to make use of these strategies daily for 2-4 weeks, whilst rating their pain intensity, motivation and adherence. Validated questionnaires were completed online to assess catastrophizing, kinesiophobia and anxiety. Results: A total of 168 patients completed the first 2 weeks of the programme, experiencing significant reductions in all variables. Kinesiophobia emerged as a key factor influencing pain reduction and moderating the association between motivation and pain relief. In turn, adherence to the

programme was associated with lower pain intensity, although moderated by the degree of motivation. Conclusions: In the context of COVID-19, when introducing remote and self-management strategies, pain cognitions and motivational factors should be taken into consideration to foster adherence and yield better pain outcomes.

***Hapsari AP, Ho JW, Meaney C, Avery L, Hassen N, Jetha A, et al. The working conditions for personal support workers in the Greater Toronto Area during the COVID-19 pandemic: a mixed-methods study. Canadian Journal of Public Health. 2022; [epub ahead of print].**

<https://doi.org/10.17269/s41997-022-00643-7> [open access]

Abstract: OBJECTIVE: During the height of the COVID-19 pandemic, personal support workers (PSWs) were heralded as healthcare 'heroes' as many of them cared for high-risk, vulnerable older populations, and worked in long-term care, which experienced a high number of COVID-19 outbreaks and deaths. While essential to the healthcare workforce, there is little understanding of PSW working conditions during the pandemic. The aim of our study was to examine the working conditions (including job security, work policies, and personal experiences) for PSWs in the Greater Toronto Area during the COVID-19 pandemic from the perspectives of PSWs. METHODS: This study used a mixed-methods design. From June to December 2020, we conducted a survey of 634 PSWs to understand their working conditions during the COVID-19 pandemic. Semi-structured interviews with 31 survey respondents were conducted from February to May 2021 to understand in greater depth how working conditions were impacting the well-being of PSWs. RESULTS: We found PSWs faced a range of challenges related to COVID-19, including anxiety about contracting COVID-19, reduced work hours, taking leaves of absences, concerns about job security, and losing childcare. While the COVID-19 pandemic highlighted the PSW workforce and their importance to the healthcare system (especially in the long-term care system), pre-existing poor work conditions of insecure jobs with no paid sick days and benefits exacerbated COVID-19-related challenges. Despite these hardships, PSWs were able to rely on their mental resilience and passion for their profession to cope with challenges. CONCLUSION: Significant changes need to be made to improve PSW working conditions. Better compensation, increased job security, decreased workload burden, and mental health supports are needed

Bishop SA, Bath B, Wiechnik C, Mendez I, Johnson R, and Lovo S. Use of virtual care strategies to join multidisciplinary teams evaluating work-related injuries in rural residents. Telemedicine Journal and e-Health. 2022; [epub ahead of print].

<https://doi.org/10.1089/tmj.2021.0548>

Abstract: Background: Rural injured workers requiring multidisciplinary assessments for musculoskeletal disorders face health access disparities, which include travel to urban centers. Virtual care can enhance access to multidisciplinary team care for musculoskeletal conditions in rural areas. Materials and Methods: A retrospective chart audit of 136 multidisciplinary assessment reports of injured workers was conducted. Comprehensive management recommendations from the health care assessment team were extracted for

analysis. The health care team used virtual technologies to join with patients and at least one local rural health practitioner in one of three locations. Remote presence robotics (RPR; Xpress Technology™) or laptop-based telehealth was used to complete the assessments. Results: RPR were used in 46% of assessments over two sites, with 54% using laptop-based telehealth at a third site. Frequencies of team members' assessment using technologies were as follows: physical therapist (100%), psychologist (78%), plastic surgeon (8%), and physician (43%). Spine (42%) and shoulder (32%) disorders were the most common problems. Most workers (79%) were 3 or more months postinjury. The most common management recommendation was the need for daily comprehensive rehabilitation care (76%). Travel time was saved by 89% of participants. Conclusions: Virtual care was used to unite multidisciplinary assessment teams for the evaluation of injured rural workers with complex musculoskeletal injuries. Future research recommendations include comparing between virtual and fully in-person multidisciplinary assessment and recommendation findings, and evaluation of patient and practitioner experiences with comprehensive virtual team assessments

Buncher A and Daston M. The intersectionality of race, disability, gender, and employment through the project SEARCH lens. *Journal of Vocational Rehabilitation*. 2022; 56(3):223-229. <https://doi.org/10.3233/JVR-221186>

Chen GX, Douwes J, van den Berg L, Pearce N, Kromhout H, Glass B, et al. Occupational exposures to pesticides and other chemicals: a New Zealand motor neuron disease case-control study. *Occupational & Environmental Medicine*. 2022; 79(6):412-420. <https://doi.org/10.1136/oemed-2021-108056>

Abstract: Objectives: To assess associations between occupational exposures to pesticides and other chemicals and motor neuron disease (MND). Methods: A population-based case-control study that included 319 MND cases (64% male/36% female) recruited through the New Zealand MND Association complemented with hospital discharge data, and 604 controls identified from the Electoral Roll. For each job held, a questionnaire collected information on 11 exposure categories (dust, fibres, tobacco smoke, fumes, gas, fumigants, oils/solvents, acids/alkalis, pesticides, other chemicals and animals/animal products). ORs were estimated using logistic regression adjusting for age, sex, ethnicity, socioeconomic status, education, smoking, alcohol consumption, physical activities, head/spine injury and other occupational exposures. Results: Two exposure categories were associated with increased MND risks: pesticides (OR 1.70, 95% CI 1.17 to 2.48) and fumigants (OR 3.98, 95% CI 1.81 to 8.76), with risks increasing with longer exposure duration ($p < 0.01$). Associations were also observed for: methyl bromide (OR 5.28, 95% CI 1.63 to 17.15), organochlorine insecticides (OR 3.28, 95% CI 1.18 to 9.07), organophosphate insecticides (OR 3.11, 95% CI 1.40 to 6.94), pyrethroid insecticides (OR 6.38, 95% CI 1.13 to 35.96), inorganic (copper) fungicides (OR 4.66, 95% CI 1.53 to 14.19), petrol/diesel fuel (OR 2.24, 95% CI 1.27 to 3.93) and unspecified solvents (OR 1.91, 95% CI 1.22 to 2.99). In women, exposure to textile fibres (OR 2.49, 95% CI 1.13 to

5.50), disinfectants (OR 9.66, 95% CI 1.29 to 72.44) and cleaning products (OR 3.53, 95% CI 1.64 to 7.59) were also associated with MND; this was not observed in men (OR 0.80, 95% CI 0.44 to 1.48; OR 0.72, 95% CI 0.29 to 1.84; OR 0.57, 95% CI 0.21 to 1.56, respectively).

Conclusions: This study adds to the evidence that pesticides, especially insecticides, fungicides, and fumigants, are risk factors for MND.

Enehaug H, Spjelkavik O, Falkum E, and Froyland K. Workplace inclusion competence and employer engagement. *Nordic Journal of Working Life Studies*. 2022; 12(1):71-93.

<https://doi.org/10.18291/njwls.128260> [open access]

Abstract: Existing active labor market policy (ALMP) measures have been unsuccessful in establishing long-term employment for vulnerable groups. This paper contributes to further development of the role of the employer engagement perspective in ALMP. We introduce the term workplace inclusion competence and explore its association to two distinct work-organizational categories: participation- and control-oriented management. We operationalize workplace inclusion competence as inclusion opportunity and inclusion capability. We argue that such competence is dynamic and processual, and find that organizational management-orientation, as well as work pace, employees' developmental opportunities, financial situation and OSH, have an impact on workplace inclusion competence. Survey data among a sample of managers is analyzed regarding workplaces' capabilities and opportunities in work inclusion processes. We present two sets of indexes to measure organizational management-orientation and inclusion skills competence. As such, we contribute to the research field by providing new and more specific concepts with adherent question indexes, and by connecting them to a work-organizational perspective

Sjoberg Forsberg K, Vanje A, and Parding K. Bringing in gender perspectives on systematic occupational safety and health management. *Safety Science*. 2022; 152:105776.

<https://doi.org/10.1016/j.ssci.2022.105776> [open access]

Abstract: This article suggests that theories of gender should be considered central concerning the future development of systematic occupational safety and health management in theory and practice. Despite extensive research and legislation, there are still considerable shortcomings in working conditions which indicates difficulties in the implementation of systematic occupational safety and health management. In this article, we address the need for critical analysis that complements more traditional research focusing on health or management. The overall aim is to examine and explain systematic occupational safety and health management in gender-segregated work environments in Sweden, based on theories of doing gender in work organisations. A qualitative methodological approach is used, which includes thematically analysed interviews with inspectors and managers at the Swedish Work Environment Authority. By using a gender-critical analysis several examples of how gendered norms and values complicate and constrain systematic occupational safety and health management are identified. The results pinpoint that these norms and values indirectly contribute to circumscribe essential preconditions for systematic occupational

safety and health management procedures and risk leading to difficulties in creating safe and healthy work cultures.

Hutchinson D, Luria G, Pindek S, and Spector P. The effects of industry risk level on safety training outcomes: a meta-analysis of intervention studies. *Safety Science*. 2022; 152:105594.

<https://doi.org/10.1016/j.ssci.2021.105594>

Iida M, Sasaki N, Imamura K, Kuroda R, Tsuno K, and Kawakami N. COVID-19-related workplace bullying and customer harassment among healthcare workers over the time of the COVID-19 outbreak: a eight-month panel study of full-time employees in Japan. *Journal of Occupational & Environmental Medicine*. 2022; 64(5):e300-e305.

<https://doi.org/10.1097/JOM.0000000000002511>

Abstract: Objective: To investigate the prevalences of COVID-19-related workplace bullying and harassment (WBH) and customer harassment among healthcare workers (HCWs) compared to non-HCWs during COVID-19 outbreaks. Methods: A baseline (March 2020) and follow-up surveys (May, August, and November 2020) were conducted of full-time employees, with an online questionnaire that included items on COVID-19-related WBH and customer harassment. The prevalences were compared between HCWs and non-HCWs using generalized linear models with repeated measures. Results: A total of 800 (56%) respondents completed all the surveys. Prevalences of WBH and customer harassment were 5% to 10% and 10% to 13%, respectively, among HCWs during the follow-up. HCWs had a significantly higher prevalence of WBH in May (Adjusted OR = 2.3) and customer harassment in November (Adjusted OR = 2.7), compared to non-HCWs. Conclusions: HCWs remained at high risk of COVID-19-related WBH and customer harassment during the pandemic.

Lallukka T, Shiri R, Alexanderson K, Ervasti J, Mittendorfer-Rutz E, and Virtanen M. Sickness absence and disability pension after carpal tunnel syndrome diagnosis: a register-based study of patients and matched references in Sweden. *Scandinavian Journal of Public Health*. 2022; 50(4):471-481.

<https://doi.org/10.1177/14034948211002729> [open access]

Abstract: Aims: The aim of this study was to examine sickness absence and disability pension (SA/DP) during working lifespan among individuals diagnosed with carpal tunnel syndrome (CTS) and their matched references, accounting for sociodemographic factors. Methods: We used a register cohort of 78,040 individuals aged 19-60 years when diagnosed with CTS in secondary health care (hospitals and outpatient specialist health care) and their 390,199 matched references from the general population in 2001-2010. Sociodemographic factors and SA/DP net days during a three-year follow-up were included. Negative binomial regression was used. Results: For those not on DP at inclusion, the average number of SA/DP days per person-year was 58 days (95% confidence interval (CI) 56-60 days) among individuals with CTS and 20 days (95% CI 19-21 days) among the matched references. Among

both groups, these numbers increased with age and were higher among women than among men. The rate ratio (RR) of SA/DP days was threefold higher among people with CTS than among the matched references (adjusted RR=3.00, 95% CI 2.91-3.10). Moreover, compared to the matched references, the RR for SA/DP was higher among men with CTS (RR=3.86, 95% CI 3.61-4.13) than among women with CTS (RR=2.69, 95% CI 2.59-2.78). The association between CTS and the number of SA/DP days was smaller among older age groups. Sociodemographic factors were similarly associated with SA/DP among people with and without CTS. Conclusions: Numbers of SA/DP days were higher among people with CTS than their matched references in all age groups, particularly among individuals in their early work careers, highlighting public-health relevance of the findings

Lunt J, Hemming S, Elander J, Baraniak A, Burton K, and Ellington D. Experiences of workers with post-COVID-19 symptoms can signpost suitable workplace accommodations. *International Journal of Workplace Health Management*. 2022; 15(3):359-374.

<https://doi.org/10.1108/IJWHM-03-2021-0075> [open access]

Abstract: Purpose The prevalence and multi-system nature of post-COVID-19 symptoms warrants clearer understanding of their work ability implications within the working age population. An exploratory survey was undertaken to provide empirical evidence of the work-relevant experiences of workers recovering from COVID-19. Design/methodology/approach A bespoke online survey based on a biopsychosocial framework ran between December 2020 and February 2021. It collected quantitative ratings of work ability and return-to-work status, qualitative responses about return-to-work experiences, obstacles and recommendations, along with views on employer benefits for making accommodations. A sample of 145 UK workers recovering from COVID-19 was recruited via social media, professional networks and industry contacts. Qualitative data was subject to thematic analysis. Participants were mainly from health/social care (50%) and educational settings (14%). Findings Just over 90% indicated that they had experienced at least some post-COVID-19 symptoms, notably fatigue and cognitive effects. For 55%, symptoms lasted longer than six months. Only 15% had managed a full return-to-work. Of the 88 who provided workability ratings, just 13 and 18% respectively rated their physical and mental workability as good or very good. Difficulties in resuming work were attributed to symptom unpredictability, their interaction with job demands, managing symptoms and demands in parallel, unhelpful attitudes and expectations. Manager and peer support was reported as variable. Originality/value Workplace health management characterised by flexible long-term collaborative return-to-work planning, supported by more COVID-centric absence policies and organisational cultures, appear pivotal for sustaining the return-to-work of the large segments of the global workforce affected by post-COVID-19 symptoms.

Madsen CU, Thorsen SV, Hasle P, Laursen LL, and Dyreborg J. Differences in occupational health and safety efforts between adopters and non-adopters of certified occupational health and safety management systems. *Safety Science*. 2022; 152:105794.

<https://doi.org/10.1016/j.ssci.2022.105794> [open access]

Abstract: Certified occupational health and safety management systems (COHSMSs) continue to grow in popularity and to diffuse to new industries. This study investigated differences in occupational health and safety efforts between adopters and non-adopters of COHSMSs. We used cross-sectional survey data from 4,202 Danish workplaces from all sectors to compare self-reported occupational health and safety efforts in workplaces with a COHSMS and workplaces without a COHSMS. The 'systematic process-related OHS efforts' and 'content-related OHS efforts' were scored on five and seven scales, respectively, for both adopters and non-adopters. The results of linear regression analysis revealed significantly lower score values for non-adopters than for adopters of COHSMSs, which means certified workplaces perform better than non-certified workplaces in both process-related and content-related OHS activities. We conclude that COHSMSs workplaces have a higher overall level of efforts for both process and content OHS activities. The study therefore supports the assumption that COHSMS adopters provide a higher level of OHS management than non-adopters, and that using the company's OHS performance as merely 'window dressing' is not a general feature of adopters. However, the results also indicate that a small group of COHSMS adopters has a considerably lower level of OHS effort than non-adopters, which implies that the certification system does not necessarily secure a high level of OHS management for all adopters. Furthermore, a small group of adopters have high process activities and low content activities, suggesting a decoupling between the systematic OHS processes and the specific preventive activities in the workplace, which could be a sign of window dressing. Further research is needed to establish the possible effects on health and safety outcomes, such as lost-time injuries.

Peker M, Dogru OC, and Mese G. Role of supervisor behavioral integrity for safety in the relationship between top-management safety climate, safety motivation, and safety performance. *Safety and Health at Work*. 2022; 13(2):192-200.

<https://doi.org/10.1016/j.shaw.2022.03.006> [open access]

Abstract: Background This study examines whether employee perceptions of supervisor behavioral integrity for safety moderates the relationship between top-management safety climate and safety performance (i.e., safety compliance and safety participation) and the mediated relationships through safety motivation. Methods Data collected from 389 blue-collar employees were analyzed using latent moderated structural equation modeling. Results The results indicate that the relationship between top-management safety climate and safety behavior, and the mediating role of safety motivation were replicated. Moreover, the results show that the mediated relationships between top-management safety climate and safety behaviors through safety motivation were stronger for employees who report high supervisor behavioral integrity for safety. Conclusion The study findings suggest the role of

supervisor behavioral integrity for safety in clarifying how the employee perceptions of top-management safety climate transfer to the employee safety behaviors through the motivational pathway

Salvagioni DAJ, Mesas AE, Melanda FN, Gonzalez AD, and de Andrade SM. Burnout and long-term sickness absence from the teaching function: a cohort study. *Safety and Health at Work*. 2022; 13(2):201-206.

<https://doi.org/10.1016/j.shaw.2022.01.006> [open access]

Abstract: Background The present objective was to verify whether burnout (emotional exhaustion [EE], depersonalization [DP] and low professional efficacy [PE]) is a risk factor for long-term sickness absence (LTSA; ≥ 30 consecutive days) from the teaching role. Methods This was a prospective cohort study with two years of follow-up that investigated 509 elementary and high-school teachers. Burnout was identified by Maslach Burnout Inventory. Poisson regression with robust variance was used to adjust for possible confounders. Results The incidence of LTSA was 9.4%. High EE levels were associated with LTSA in the crude analysis, but the association lost statistical significance after adjustments (for sex, age, perception of work-life balance, general self-rated health, chronic pain and depression). High DP levels were associated with this outcome, even after all adjustments (relative risk = 1.80; 95% confidence interval: 1.05-3.09). Low PE levels were not related to LTSA. Conclusion The results reinforce the need to improve teachers' work conditions to reduce burnout, particularly DP, and its consequences.

Sun Y, Ji M, Leng M, and Wang Z. Which cognitive behavioral therapy delivery formats work for depressive symptoms in dementia caregivers? A systematic review and network meta-analysis of randomized controlled trials. *Journal of Affective Disorders*. 2022; 308:181-187.

<https://doi.org/10.1016/j.jad.2022.04.055>

Abstract: Background: Cognitive behavioral therapy (CBT) has been shown to be effective to improve depressive symptoms by changing their cognitive processes and concepts for dementia caregivers (DCs). However, whether CBT can be effectively delivered in individual, group, telephone-administered, internet, combine formats remains unclear. We aimed to examine the most effective delivery format for CBT via a network meta-analysis (NMA). Methods: An exhaustive literature search was conducted based on Pubmed, Embase, Web of Science, Cumulative Index to Nursing and Allied Health Literature (CINAHL), PsycINFO, the Cochrane Central Register of Controlled Trials, China National Knowledge Infrastructure database, Chinese Biomedical Literature Database, Wan Fang database, and unpublished data. RCTs were identified from their inception to January 15, 2022. We conducted pairwise and NMA to evaluate the relative effectiveness and rank probability (rank P-score) for different CBT delivery formats. A series of analyses and assessments, such as the risk of bias, and GRADE were performed concurrently. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) were used for abstracting data. Results: A total of 37 studies were included in our analysis based on a series of rigorous screenings, which comprised 4191

DCs. Compared with controls, internet (SMD = -1.33, confidence interval (CI): -2.18, -0.66, GRADE low), telephone (SMD = -1.29, CI: -1.89, -0.61, GRADE moderate), and individual (SMD = -1.04, CI: -2.01, -0.07, GRADE very low) showed the largest improvement on depressive symptoms, whereas the group and combine delivery formats were not effective. Notably, there were no statistically significant differences between these five delivery formats: internet, telephone, individual, group, and combine. Sensitivity analyses supported the overall findings. Conclusions: Our results suggested that internet, telephone, individual CBT delivery formats were effective for reducing depressive symptoms in DCs. Given the limitations of the NMA approach and the number of included studies, the result should be cautiously interpreted. Further RCTs with respect to the CBT based on different delivery formats' effectiveness are needed.

Tran NAT, Nguyen HLA, Nguyen TBH, Nguyen QH, Huynh TNL, Pojani D, et al. Health and safety risks faced by delivery riders during the COVID-19 pandemic. *Journal of Transport & Health*. 2022; 25:101343.

<https://doi.org/10.1016/j.jth.2022.101343> [open access]

Abstract: OBJECTIVES: Delivery riders have been front-line workers throughout the pandemic but little is known about their own health and safety during this time. This study explores the health and safety issues facing delivery riders in Ho Chi Minh City, Vietnam, during the Covid-19 pandemic, in particular during the second lockdown (May-October 2021). METHOD: A web-based survey of more than 800 riders was conducted in August-September 2021. Following descriptive statistics, four logit models were fitted to examine the factors associated with (a) sanitizing one's hands, (b) using a face shield, (c) contracting a new health issue, and (d) engaging in riskier traffic behaviors during the lockdown. RESULTS: The riders who were less consistent in adopting health and safety measures tended to be male, older, less-educated, and vaccinated. Also, they were under greater financial pressure and had suffered a larger loss of income during the pandemic. To recover the loss, they worked longer hours and felt under more intense pressure at work. The job pressure, long working hours, and financial burdens led many drivers to adopt risky traffic behaviors, such as speeding. Conversely, where the companies and co-workers were more supportive, riders tended to adopt health prevention measures more often. Fear of Covid-19 also acted as a facilitator. Job and financial pressure combined with the fear of contracting the virus contributed to the occurrence of new health issues during the pandemic. Again, support from the company and co-workers helped to reduce the risk of new health problems emerging. CONCLUSION: In Ho Chi Minh City and other Global South megacities that employ tens of thousands of riders, ensuring their health and safety is important to support both private businesses and public health. Overall, companies should assume a much larger responsibility here

Wharakura MK, Lockett H, Carswell P, Henderson G, Kongs-Taylor H, and Gasparini J. Collaboration in the context of supporting people with mental health and addiction issues into employment: a scoping review. *Journal of Vocational Rehabilitation*. 2022; 56(3):271-287.

<https://doi.org/10.3233/JVR-221191>

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