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***Kroon FPB, van der Heijde D, Maxwell LJ, Beaton DE, Abishek A, Berenbaum F, et al. Core outcome measurement instrument selection for physical function in hand osteoarthritis using the OMERACT Filter 2.1 process. *Seminars in Arthritis and Rheumatism*. 2021; [epub ahead of print].**

<https://doi.org/10.1016/j.semarthrit.2021.08.014> [open access]

Abstract: OBJECTIVE: Physical function is one of the Outcome Measures in Rheumatology (OMERACT) core outcome domains for hand osteoarthritis studies. Our aim was to select appropriate instrument(s) to measure this domain, as part of the development of a core outcome measurement set. METHODS: Following the OMERACT Filter 2.1 instrument selection process, the (function subscale of) the Australian/Canadian Hand Osteoarthritis Index (AUSCAN), Functional Index for Hand Osteoarthritis (FIHOA) and Michigan Hand Outcomes Questionnaire (MHQ) were assessed for domain match, feasibility, truth and discrimination. Data gathered from available literature, working group and patient surveys, and additional analyses in two hand osteoarthritis cohorts were used to inform a consensus process. Results were summarized in Summary of Measurements Properties tables and reviewed by the OMERACT technical advisory group. RESULTS: MHQ passed the assessment of



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domain match and feasibility by the working group and patient research partners. For AUSCAN important limitations in feasibility were noted, but domain match was good. FIHOA did not pass the assessment and was not taken through the follow-up assessment. Based on published literature, reliability and construct/longitudinal validity of both MHQ and AUSCAN fulfilled OMERACT standards. While clinical trial discrimination and thresholds of meaning were good for AUSCAN, results for MHQ were ambiguous. **CONCLUSION:** MHQ was provisionally endorsed as OMERACT core outcome measure for the core domain physical function. While AUSCAN may have better metric properties than MHQ, it received provisional endorsement as a second measure of function due to important feasibility issues. A research agenda to merit full endorsement was set

***Robson LS, Landsman V, Latour-Villamil D, Lee H, and Mustard C. Unionisation and injury risk in construction: a replication study. Occupational & Environmental Medicine. 2021; [epub ahead of print].**

<https://doi.org/10.1136/oemed-2021-107617> [open access]

Abstract: Objective: To replicate, in a more recent time period, a previous cross-sectional study to estimate the association between unionisation and the risk of workers' compensation injury claims. **Methods:** The sampling frame was workers' compensation company account records in the industrial, commercial and institutional construction sector in the province of Ontario, Canada, 2012-2018. Company unionisation status was determined through linkage with records of unionised contractors. Outcomes were cumulative counts of workers' compensation injury claims, aggregated to company business. Risk ratios were estimated with multivariable negative binomial regression models. Models were also fit separately to lost-time claims stratified by company size. **Results:** Business unionisation was associated with a lower lost-time claim incidence (crude risk ratio, CRR=0.69, 95% CI 0.65 to 0.74); adjusted risk ratio, ARR=0.75, 95% CI 0.71 to 0.80). In subgroup analyses, the magnitude of the ARR declined as company size decreased and was not statistically significant for the smallest-sized companies of =4 full-time equivalent employees. Unionisation was associated (positively) with the incidence of no-lost-time claims in a crude model, but not in



an adjusted one (CRR=1.80, 95% CI 1.71 to 1.89; ARR=1.04, 95% CI 0.98 to 1.09). Conclusions: Company unionisation was associated with a lower risk of lost-time workers' compensation injury claims, corroborating a similar study from an earlier time period. The protective effect of unionisation declined as company size decreased. In contrast to the previous study, a positive relationship between company unionisation and no-lost-time claim incidence was not found, due in part to a methodological refinement.

***Somani R, Muntaner C, Hillan E, Velonis AJ, and Smith P. A systematic review: effectiveness of interventions to de-escalate workplace violence against nurses in healthcare settings. Safety and Health at Work. 2021; 12(3):289-295.**

<https://doi.org/10.1016/j.shaw.2021.04.004>

Abstract: Workplace violence (WPV) is an increasing cause of concern around the globe, and healthcare organizations are no exception. Nurses may be subject to all kinds of workplace violence due to their frontline position in healthcare settings. The purpose of this systematic review is to identify and consider different interventions that aim to decrease the magnitude/prevalence of workplace violence against nurses. The standard method by Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA, 2009) has been used to collect data and assess methodological quality. Altogether, twenty-six studies are included in the review. The intervention procedures they report on can be grouped into three categories: stand-alone trainings designed to educate nurses; more structured education programs, which are broader in scope and often include opportunities to practice skills learned during the program; multicomponent interventions, which often include organizational changes, such as the introduction of workplace violence reporting systems, in addition to workplace violence training for nurses. By comparing the findings, a clear picture emerges; while standalone training and structured education programs can have a positive impact, the impact is unfortunately limited. In order to effectively combat workplace violence against nurses, healthcare organizations must implement multicomponent interventions, ideally involving all stakeholders



Almhdawi KA, Obeidat D, Kanaan SF, Hajela N, Bsoul M, Arabiat A, et al. University professors' mental and physical well-being during the COVID-19 pandemic and distance teaching. Work. 2021; 69(4):1153-1161.

<https://doi.org/10.3233/WOR-205276>

Abstract: Background: Strict strategies including lockdowns and working from home were adopted worldwide during the coronavirus (COVID-19) pandemic. University professors suddenly shifted to work from home adopting distance teaching. Objectives: This study aimed to investigate Health-Related Quality of Life (HRQoL) and its associated occupational and health factors during COVID-19 among university professors. Methods: A cross-sectional design targeted university professors of all majors in Jordan. The study self-administered survey included demographics and lifestyle data, 12-item Short Form health survey (SF-12), Depression Anxiety Stress Scale (DASS 21), professor' evaluation of distance teaching, Neck Disability Index (NDI), and International Physical Activity Questionnaire (IPAQ). Descriptive analyses were conducted to demonstrate primary outcome measures data. Factors associated with HRQoL were determined using a multiple variable linear regression analysis. Results: A total of 299 university professors successfully completed the study. Participants' SF-12 physical health component score was 74.08 (± 18.5) and 65.74 (± 21.4) for mental health component. Higher depression, stress, neck disability, and weight change were significantly associated with lower HRQoL level. While higher satisfaction with distance teaching, health self-evaluation, and work load change were significantly associated with higher HRQoL level. The regression model explained 66.7% of the variance in professors' HRQoL ($r^2 = 0.667$, $F = 82.83$, $P < 0.001$). Conclusions: Jordanian university professors demonstrated good HRQoL and mental health levels during COVID-19 lockdown. Factors associated with professors' HRQoL should be considered by academic institutions in determining the best occupational setup of teaching activities in future pandemics.

Blafoss R, Vinstrup J, Skovlund SV, Lopez-Bueno R, Calatayud J, Clausen T, et al. Musculoskeletal pain intensity in different body regions and risk of disability pension among female eldercare workers: prospective cohort study with 11-year



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register follow-up. **BMC Musculoskeletal Disorders. 2021; 22(1):771.**

<https://doi.org/10.1186/s12891-021-04655-1> [open access]

Abstract: Background: Musculoskeletal pain is a risk factor for leaving the labour market temporarily and permanently. While the presence of multi-site pain increases the risk of disability pension, we lack detailed knowledge about pain intensity as a risk factor. This study investigated the association between musculoskeletal pain intensity in different body regions and risk of future disability pension among eldercare workers. Methods: Eight thousand seven hundred thirty-one female eldercare workers replied to a questionnaire on work and health in 2005 and were followed for 11 years in the Danish Register for Evaluation of Marginalization. Time-to-event analyses estimated hazard ratios (HR) for disability pension from pain intensities (0-9 numeric rating scale (NRS)) in the low-back, neck/shoulders, and knees during the previous 3 months. Analyses were mutually adjusted for pain regions, age, education, lifestyle, psychosocial work factors, and physical exertion at work. Results: During 11-year follow-up, 1035 (11.9%) of the eldercare workers received disability pension. For all body regions among all eldercare workers, dose-response associations were observed between higher pain intensity and risk of disability pension ($p < 0.001$). The risk for disability pension was increased when reporting "very high" pain levels (=7 points on the 0-9 NRS) in the low-back (HR 2.19, 95% CI 1.70-2.82), neck/shoulders (HR 2.34, 95% CI 1.88-2.92), and knees (HR 1.89, 95% CI 1.44-2.47). Population attributable risks (PAR) were 15.5, 23.2, and 9.6% for pain > 2 on NRS in the low-back, neck/shoulders, and knees, respectively, indicating that 15.5, 23.2, and 9.6% fewer eldercare workers would likely receive disability pension if the pain intensity was reduced to 2 or less. For workers ≤ 45 years and > 45 years, PAR was highest for neck/shoulder pain (27.6%) and low-back pain (18.8%), respectively. Conclusions: The present study found positive dose-response associations between pain intensity in the low-back, neck/shoulders, and knees, and risk of disability pension during 11-year follow-up. Moderate to very high levels of musculoskeletal pain in eldercare workers should, therefore, be considered an early warning sign of involuntary premature exit from the labour market. These findings underscore the importance of



preventing, managing, and reducing musculoskeletal pain to ensure a long and healthy working life.

Cherry N, Barrie JR, Beach J, Galarneau JM, Mhonde T, and Wong E. Respiratory outcomes of firefighter exposures in the Fort McMurray fire: a cohort study from Alberta Canada. Journal of Occupational & Environmental Medicine. 2021; 63(9):779-786. <https://doi.org/10.1097/JOM.0000000000002286>

Abstract: Objective: Determine effects on respiratory health of firefighters attending a catastrophic wildfire. Methods: Within the Alberta Administrative Health Database, we identified five community-based controls for each firefighter in a cohort of 1234 deployed to the 2016 Fort McMurray fire. Spirometry records were identified and a stratified sample assessed clinically. We estimated PM_{2.5} particles exposure. Results: Firefighters had an increased risk of asthma consultation post-fire (OR new onset asthma = 2.56; 95%CI 1.75 to 3.74). Spirometry showed decreased FEV₁ and FVC with increasing exposure. In the clinical assessment, 20% had a positive MCT and 21% BWT. Those with ongoing fire-related symptoms had a higher concurrence of positive MCT and BWT (OR = 4.35; 95%CI 1.11 to 17.12). Lower diffusion capacity related to higher exposure. Conclusions: Massive exposures during a wildfire are associated with non-resolving airways damage.

Dong S, Eto O, and Spitz C. Barriers and facilitators to requesting accommodation among individuals with psychiatric disabilities: a qualitative approach. Journal of Vocational Rehabilitation. 2021; 55(2):207-218. <https://doi.org/10.3233/JVR-211157>

Guhne U, Pabst A, Lobner M, Breilmann J, Hasan A, Falkai P, et al. Employment status and desire for work in severe mental illness: results from an observational, cross-sectional study. Social Psychiatry and Psychiatric Epidemiology. 2021; 56(9):1657-1667. <https://doi.org/10.1007/s00127-021-02088-8>

Abstract: Purpose: People with a severe mental illness (SMI) are at particular risk of occupational exclusion. Among the approaches to occupational rehabilitation, supported employment (SE) has been



proven to be the most effective. A requirement to enter SE-programs is that individuals must want to seek competitive employment. The aim of this work is to investigate the relationship between serious mental illness and the desire to work including potential predictors. Methods: This is a cross-sectional observational study of patients with SMI aged 18-65 years (n = 397). Patients were interviewed by trained staff using standardised instruments. The relationship between potential predictors and a strong preference for employment were analysed using a hierarchic binary logistic regression model. Results: Only about one-quarter (27.9%) of SMI patients is in competitive employment. Another quarter is unemployed (25.9%). Results show that the desire for competitive employment is strong among more than half of the SMI patients. Among the unemployed, two-thirds express a strong desire for work. These individuals are an ideal target group for SE interventions. Comorbid chronic physical illness, diagnosis, and the subjectively judged ability to work are associated with the desire for work. Conclusion: Our data confirm a substantial exclusion of individuals with SMI from the workforce. In general, care needs for workplace interventions are not being met and leave much room for improvement. In addition to employment status, the desire for work should be routinely assessed. Study registration: The study was registered in the German Clinical Trials Register (DRKS) (https://www.drks.de/drks_web/navigate.do?navigationId=trial.HTML&TRIAL_ID=DRKS00015801) and under the WHO-Platform "International Clinical Trials Registry Platform" (ICTRP) (<https://apps.who.int/trialsearch/Trial2.aspx?TrialID=DRKS00015801>) under the registration number DRKS00015801 before the start of recruitment (Registration date: 21.02.2019).

Kugathasan TA, Lecot F, Laberge S, Tremblay J, and Mathieu ME. Health-related and lifestyle factors as predictors of intentions to improve lifestyle habits in employees participating in a workplace health promotion program. Journal of Occupational & Environmental Medicine. 2021; 63(9):e612-e621. <https://doi.org/10.1097/JOM.0000000000002306>

Abstract: Objectives: To explore employees' intentions to improve lifestyle habits, investigate the health and lifestyle-related predictors of these intentions, and how it translated into behavioral



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improvement. Methods: Employees participating in the Activate Your Health WHPP completed a questionnaire of their demographics, health-related variables, as well as six lifestyle habits and intention to improve them. Results: At baseline (n = 2729), most employees wanted to focus on physical activity and eating habits. Many predictors were identified for each intention. Majority of intentions were associated with behavioral improvement post-program (n = 525), especially in High. Conclusions: In the context of WHPPs, intention to improve may lead to actual behavioral improvement. Exploring employees' intentions to improve various lifestyle habits at the start of the program could improve the effectiveness of these programs.

Lovejoy M, Kelly EL, Kubzansky LD, and Berkman LF. Work redesign for the 21st century: promising strategies for enhancing worker well-being. American Journal of Public Health. 2021; e1-e9.

<https://doi.org/10.2105/AJPH.2021.306283>

Abstract: Work is a key social determinant of population health and well-being. Yet, efforts to improve worker well-being in the United States are often focused on changing individual health behaviors via employer wellness programs. The COVID-19 health crisis has brought into sharp relief some of the limitations of current approaches, revealing structural conditions that heighten the vulnerability of workers and their families to physical and psychosocial stressors. To address these gaps, we build on existing frameworks and work redesign research to propose a model of work redesign updated for the 21st century that identifies strategies to reshape work conditions that are a root cause of stress-related health problems. These strategies include increasing worker schedule control and voice, moderating job demands, and providing training and employer support aimed at enhancing social relations at work. We conclude that work redesign offers new and viable directions for improving worker well-being and that guidance from federal and state governments could encourage the adoption and effective implementation of such initiatives. (Am J Public Health. Published online ahead of print September 9, 2021: e1-e9. <https://doi.org/10.2105/AJPH.2021.306283>)



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Lucan SC, Goodwin SK, Lozano M, Pak S, and Freitas M. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) testing for essential food production workers: evolving thinking, pilot testing, and lessons learned. Public Health. 2021; 197:56-62.

<https://doi.org/10.1016/j.puhe.2021.06.014> [open access]

Abstract: An essential part of U.S. coronavirus disease 2019 (COVID-19) critical infrastructure is the country's food-production workforce. Keeping food-production workers safe during the COVID-19 pandemic has meant added workplace protections. Protection guidance came early from the Federal Government. Absent from such guidance were strategies to screen for the causative virus. Without viral screening, some food companies had outbreaks; some facilities had to close. Companies interested in viral screening had to devise their own strategies. One company devised a strategy having three main goals: (1) detecting asymptomatic infections, before opportunity for spread; (2) identifying workplace clusters, to indicate potential protection breakdowns; and (3) comparing company results to community infection rates. The company decided on pilot screenings at two U.S. production plants. Screenings involved mandatory viral testing (through reverse transcription polymerase chain reaction) and optional antibody testing (both immunoglobulins G and M). Pilot screenings showed benefits along with limitations: (1) detecting asymptomatic infections, but at questionably relevant time points; (2) identifying infection clusters, but with uncertain sites of transmission; (3) showing relatively low rates of infection, but absent details for meaningful community comparisons. Establishing a worker screening process was an enormous undertaking. Company employees had to stretch job roles and were distracted from usual responsibilities. Whether other companies would find sufficient benefits to justify similar screening is unclear. Moving forward, new Federal leadership could provide greater support for, and assistance with, worker screenings. In addition, new technologies could make future screenings more feasible and valuable. The worker screening experience from this pandemic offers learnings the next.

O'Sullivan M, Cross C, and Lavelle J. Good or bad jobs? Characteristics of older female part-time work. Industrial Relations Journal. 2021; 52(5):423-441.

<https://doi.org/10.1111/irj.12343>



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Abstract: Abstract Despite consistently high rates of part-time employment among older women, the quality of this cohort's work is largely under-researched with the focus being mainly on younger women. To address this gap, our paper engages with the key strands of this debate age, gender and employment status to interrogate the job characteristics and position of this worker cohort in the Irish labour market. Findings reveal notable differences between this cohort's job characteristics compared with those of other part-time workers and older women working full-time. These job characteristics include low-wage employment in poor-quality jobs, suggesting that job quality is influenced by age, gender and employment status, raising concerns regarding the likelihood for precarious employment among this cohort. In addition to individual-level consequences, this study's findings have major implications for public and organisational policy on part-time labour market participation, highlighting the need for a new research agenda on older workers

Rey RO, de Melo RRS, and Costa DB. Design and implementation of a computerized safety inspection system for construction sites using UAS and digital checklists: smart Inspects. Safety Science. 2021; 143:105430.
<https://doi.org/10.1016/j.ssci.2021.105430>

Topriceanu CC, Wong A, Moon JC, Hughes AD, Chaturvedi N, Conti G, et al. Impact of lockdown on key workers: findings from the COVID-19 survey in four UK national longitudinal studies. Journal of Epidemiology & Community Health. 2021; 75(10):955-962.

<https://doi.org/10.1136/jech-2020-215889> [open access]

Abstract: BACKGROUND: Key workers played a pivotal role during the national lockdown in the UK's response to the COVID-19 pandemic. Although protective measures have been taken, the impact of the pandemic on key workers is yet to be fully elucidated. METHODS: Participants were from four longitudinal age-homogeneous British cohorts (born in 2001, 1990, 1970 and 1958). A web-based survey provided outcome data during the first UK national lockdown (May 2020) on COVID-19 infection status, changes in financial situation, trust in government, conflict with people around, household composition, psychological distress, alcohol consumption,



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smoking and sleep duration. Generalised linear models with logit link assessed the association between being a key worker and the above outcomes. Adjustment was made for cohort design, non-response, sex, ethnicity, adult socioeconomic position (SEP), childhood SEP, the presence of a chronic illness and receipt of a shielding letter. Meta-analyses were performed across the cohorts. FINDINGS: 13 736 participants were included. During lockdown, being a key worker was associated with increased chances of being infected with COVID-19 (OR 1.43, 95% CI 1.22 to 1.68) and experiencing conflict with people around (OR 1.19, 95% CI 1.03 to 1.37). However, key workers were less likely to be worse off financially (OR 0.32, 95% CI 0.24 to 0.65), to consume more alcohol (OR 0.88, 95% CI 0.79 to 0.98) or to smoke more (OR 0.60, 95% CI 0.44 to 0.80) during lockdown. Interestingly, being a key worker was not associated with psychological distress (OR 0.95, 95% CI 0.85 to 1.05). INTERPRETATION: Being a key worker during the first UK COVID-19 lockdown was a double-edged sword, with both benefits and downsides. The UK government had the basic duty to protect its key workers from SARS-CoV-2 infection, but it may have failed to do so, and there is an urgent need to rectify this in light of the ongoing third wave

Yang B, Mustafa RA, Bossuyt PM, Brozek J, Hultcrantz M, Leeflang MMG, et al. GRADE Guidance: 31. Assessing the certainty across a body of evidence for comparative test accuracy. Journal of Clinical Epidemiology. 2021; 136:146-156. <https://doi.org/10.1016/j.jclinepi.2021.04.001> [open access]

Abstract: OBJECTIVES: This article provides GRADE guidance on how authors of evidence syntheses and health decision makers, including guideline developers, can rate the certainty across a body of evidence for comparative test accuracy questions. STUDY DESIGN AND SETTING: This guidance extends the previously published GRADE guidance for assessing certainty of evidence for test accuracy to scenarios in which two or more index tests are compared. Through an iterative brainstorm-discussion-feedback process within the GRADE working group, we developed a guidance accompanied by practical examples. RESULTS: Rating the certainty of evidence for comparative test accuracy shares many concepts and ideas with the existing GRADE guidance for test accuracy. The rating



in comparisons of test accuracy requires additional considerations, such as the selection of appropriate comparative study designs, additional criteria for judging risk of bias, and the consequences of using comparative measures of test accuracy. Distinct approaches to rating certainty are required for comparative test accuracy studies and between-study (indirect) comparisons. **CONCLUSION:** This GRADE guidance will support transparent assessment of the certainty for a body of comparative test accuracy evidence

Yao Q, Li RYM, Song L, and Crabbe MJ. Construction safety knowledge sharing on Twitter: a social network analysis. Safety Science. 2021; 143:105411.

<https://doi.org/10.1016/j.ssci.2021.105411>

***IWH authored publications**



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