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***Dobson KG, Mustard CA, Carnide N, Furlan AD, and Smith PM. Association of persistent pain with the incidence of chronic conditions following a disabling work-related injury. *Scandinavian Journal of Work, Environment & Health*. 2023; [epub ahead of print]. <https://doi.org/10.5271/sjweh.4096> [open access]**

Abstract: OBJECTIVES: In a cohort of workers disabled by a work-related injury or illness, this study aimed to: (i) compare pre-injury prevalence estimates for common chronic conditions to chronic condition prevalence in a representative sample of working adults; (ii) calculate the incidence of chronic conditions post-injury; and (iii) estimate the association between persistent pain symptoms and the incidence of common chronic conditions. METHODS: Eighteen months post-injury, 1832 workers disabled by a work-related injury or illness in Ontario, Canada, completed an interviewer-administered survey. Participants reported pre- and post-injury prevalence of seven physician-diagnosed chronic conditions, and demographic, employment, and health characteristics. Pre-injury prevalence estimates were compared to estimates from a representative sample of workers. Multivariable logistic regression was used to examine the association of persistent pain with post-injury chronic condition incidence. RESULTS: Age-standardized pre-injury prevalence rates for diabetes, hypertension, arthritis, and back problems were similar to prevalence rates observed among working adults in Ontario, while prevalence rates for mood disorder, asthma and migraine were moderately elevated. Post-injury prevalence rates of mood disorder, migraine, hypertension, arthritis, and back problems were elevated substantially in this cohort. High persistent pain symptoms were strongly associated with the 18-month incidence of these

conditions. CONCLUSIONS: The incidence of five chronic conditions over an 18-month follow-up period post injury was substantial. Persistent pain at 18 months was associated with this elevated incidence, with population attributable fraction estimates suggesting that 37-39% of incident conditions may be attributed to exposure to high levels of persistent pain

***Jones AM, Fan J, Thomas-Olson L, Zhang W, and McLeod CB. Continuation of telework in the post-pandemic era: healthcare employees' preference and determinants. Healthcare Management FORUM. 2023; [epub ahead of print].**

<https://doi.org/10.1177/08404704231170733> [open access]

Abstract: Now in the post-pandemic era, healthcare employers and leaders must navigate decisions around use of telework arrangements made popular during the COVID-19 pandemic. Among healthcare employees who teleworked during the pandemic, this study investigates preference to continue teleworking post-pandemic and the determinants of this preference. An overwhelming majority (99%) preferred to continue teleworking to some degree and the majority (52%) preferred to telework for all work hours. Healthcare employers should consider that most employees who teleworked during the pandemic prefer to continue teleworking for most or all work hours, and that hybrid work arrangements are especially important for clinical telework employees. In addition to space and resource allocation, management considerations include supports to promote productivity, work-life balance, and effective virtual communication while teleworking to promote positive employee health, recruitment, and retention outcomes

Ates R and Yakut H. Investigation of musculoskeletal disorders, physical activity level, sleep quality, and fatigue in health professionals with and without a history of COVID-19. Work. 2023; 74(4):1277-1287.

<https://doi.org/10.3233/WOR-220283>

Abstract: Background: Healthcare workers belong to an occupational group that is at high risk during the coronavirus 2019 (COVID-19) pandemic. The increased workload of healthcare workers and the accompanying psychosocial stress caused by the pandemic can affect musculoskeletal system disorders, physical activity status, sleep quality, and fatigue in this group. Objective: To investigate musculoskeletal system disorders, physical activity level, sleep quality, and fatigue in healthcare workers with and without a COVID-19. Methods: A total of 200 healthcare professionals aged 18-65 years with and without a history of COVID-19 were in the study. Data were collected between January and March 2021. A "Preliminary Evaluation Form", "Extended version of the Nordic Musculoskeletal System Questionnaire (NMQ-E)", "the International Physical Activity Questionnaire-Short Form (IPAQ-SF)" and "the Pittsburgh Sleep Quality Index (PSQI) were used for data collection". Results: It was determined that musculoskeletal system disorders did not differ significantly between healthcare workers with and without a COVID-19 history ($p > 0.05$). It was found that the number of people with problems in the low-back region was higher in those with a COVID-19 history ($p = 0.002$). In the sleep duration component, the scores of those who did not have a COVID-19 history were found to be significantly higher than those who did ($p = 0.10$). In other

comparisons, it was determined that there was no significant difference. Conclusions: It was found that the number of people with problems in the low-back region was higher in those with a COVID-19 history. Those without a COVID-19 history had higher scores in sleep duration parameter.

Bridgen JRE, Wei H, Whitfield C, Han Y, Hall I, Jewell CP, et al. Contact patterns of UK home delivery drivers and their use of protective measures during the COVID-19 pandemic: a cross-sectional study. Occupational and Environmental Medicine. 2023; [epub ahead of print].

<https://doi.org/10.1136/oemed-2022-108646> [open access]

Abstract: OBJECTIVES: To quantify contact patterns of UK home delivery drivers and identify protective measures adopted during the pandemic. METHODS: We conducted a cross-sectional online survey to measure the interactions of 170 UK delivery drivers during a working shift between 7 December 2020 and 31 March 2021. RESULTS: Delivery drivers had a mean number of 71.6 (95% CI 61.0 to 84.1) customer contacts per shift and 15.0 (95% CI 11.2 to 19.2) depot contacts per shift. Maintaining physical distancing with customers was more common than at delivery depots. Prolonged contact (more than 5 min) with customers was reported by 5.4% of drivers on their last shift. We found 3.0% of drivers had tested positive for SARS-CoV-2 since the start of the pandemic and 16.8% of drivers had self-isolated due to a suspected or confirmed case of COVID-19. In addition, 5.3% (95% CI 2.3% to 10.2%) of participants reported having worked while ill with COVID-19 symptoms, or with a member of their household having a suspected or confirmed case of COVID-19. CONCLUSION: Delivery drivers had a large number of face-to-face customer and depot contacts per shift compared with other working adults during this time. However, transmission risk may be curtailed as contact with customers was of short duration. Most drivers were unable to maintain physical distance with customers and at depots at all times. Usage of protective items such as face masks and hand sanitiser was widespread

Daling LM, Tenbrock M, Isenhardt I, and Schlittmeier SJ. Assemble it like this! Is AR- or VR-based training an effective alternative to video-based training in manual assembly? Applied Ergonomics. 2023; 110:104021.

<https://doi.org/10.1016/j.apergo.2023.104021> [open access]

Abstract: AR- and VR-based training is increasingly being used in the industry to train workers safely and effectively for new tasks. In this study, we investigated and compared the effects of AR-, VR- and video-based training on short- and long-term objective performance measures and subjective evaluations in a manual assembly task. Our results showed that there was no difference between AR-, VR- and video-based training concerning the objective performance measures task completion time and error count. However, in the subjective evaluations VR-based training showed a significantly higher perceived task load and a lower usability rating than the AR- and video-based training regimes. An exploratory analysis additionally revealed partially better results for AR than for VR after adjusting the data for

the age of the participants. Future research should further investigate the advantage of AR- and video-based methods over VR when the age and technology experience of participants are taken into account

Ercan S, Ince Parpucu T, Baskurt Z, and Baskurt F. Gender differences, ergonomics risks and upper quadrant musculoskeletal pain in hairdressers. *International Journal of Occupational Safety & Ergonomics*. 2023; 29(2):685-689.

<https://doi.org/10.1080/10803548.2022.2066315>

Abstract: Objectives. This study examined ergonomic risk levels and upper quadrant musculoskeletal pain (UQMP) levels of hairdressers, and the difference and correlation between genders. Methods. Volunteers participating in the study were assessed with the descriptive data form, rapid upper limb assessment (RULA), Cornell musculoskeletal discomfort questionnaire (CMDQ) and disabilities of the arm, shoulder and hand (DASH) score. Results. In total, 229 (female, 26.6%; male, 73.4%) hairdressers participated in the study. Prevalence of the first three frequencies of pain in the musculoskeletal system was 48.5% in the neck, 41.5% in the upper back and 33.6% in the shoulder. The mean DASH score of the hairdressers was 10.75 ± 10.70 , quick DASH-work modulated score was 6.85 ± 10.24 and mean ergonomic risk score was moderate to high (5.36 ± 1.22) according to RULA. Although there was no difference in terms of gender in the ergonomic risk level, a higher level of UQMP was significant in females ($p < 0.05$). RULA score correlated with CMDQ and DASH scores in both genders ($p < 0.05$). Conclusions. Hairdressers perform their jobs in work environments with moderate to very high ergonomic risk levels. There is a possibility of UQMP in hairdressers, especially females, due to the effect of their movement patterns as a requirement of their profession.

Hsieh YJ, Shapoval V, Sonmez S, and Apostolopoulos Y. Work challenges and health of immigrant hotel housekeepers: part 2. *Workplace Health & Safety*. 2023; 71(5):255-262.

<https://doi.org/10.1177/21650799221148678>

Abstract: BACKGROUND: Hotel housekeepers' major responsibility is to perform cleaning tasks. In the course of performing their duties, hotel housekeepers are disproportionately exposed to multiple workplace hazards (i.e., physical, chemical, biological, and psychosocial hazards) that put them at risk of adverse health consequences. This study aims to discover the occupational and health challenges encountered by immigrant hotel housekeepers in Orlando, Florida, and help hotel management to develop strategies to improve their occupational health. METHODS: This study adopted an interviewer-administered survey method for data collection. Data were collected from members of the United Here Union, Local 7373 in Orlando, Florida. Trained Spanish-English bilingual associates of the Union administered the surveys through interviews with participants. Descriptive statistics and stepwise multiple regression were employed to analyze data ($n = 140$) using SPSS 22. FINDINGS: This study shows that Florida hotel housekeepers participating in this study worked under great time pressures, endured excessive workloads, did not have enough time

to rest and recover, and often skipped or shortened lunch breaks. Participants believed that their employers valued work productivity more than their safety and health. More than half of the respondents experienced racial discrimination at their workplaces.

CONCLUSION/APPLICATION TO PRACTICE: The article brings an important contribution to the awareness of housekeepers' feelings toward their work and the need for effective safety and health policies and programs

Kurtul S and Mazican N. Prevalence and risk factors for self-reported symptoms of carpal tunnel syndrome among hospital office workers: a cross-sectional study. *International Journal of Occupational Safety & Ergonomics*. 2023; 29(2):461-465.

<https://doi.org/10.1080/10803548.2022.2054580>

Abstract: Objectives. We aimed to determine the prevalence of self-reported symptoms of carpal tunnel syndrome (CTS) and associated risk factors among hospital office workers. Methods. This cross-sectional study was carried out between May and August 2021 with office workers actively working in a hospital in Izmir, Turkey. The Boston carpal tunnel syndrome questionnaire was used to evaluate the severity of self-reported CTS symptoms and their effect on the functional status of the participants. Results. The study included 151 people, 68.2% of whom were women. CTS symptoms were reported by 74.1% of the participants, the majority of whom (73.2%) were women. These reported symptoms were mild in 43%, moderate in 24.5%, severe in 5.3% and very severe in 1.3%. Significant differences were found between those with and without CTS symptoms regarding age, body mass index, previous diagnosis of CTS, daily work hours, using a wrist-supported mousepad and perceived workload ($p < 0.05$). Conclusion. CTS symptoms of office workers in the hospital were associated with occupational characteristics as well as individual factors. These risk factors should be taken into account while planning for future preventive and interventional measures in workplaces.

Layne LA. Robot-related fatalities at work in the United States, 1992-2017. *American Journal of Industrial Medicine*. 2023; 66(6):454-461.

<https://doi.org/10.1002/ajim.23470>

Abstract: BACKGROUND: Industrial robots became more commonplace in the US workplace during the mid- to latter part of the twentieth century. Recent scientific advances have led to the development of new types of robots, resulting in rapidly changing work environments. Information on occupational robot-related fatalities is currently limited for this developing field. METHODS: Robot fatalities were identified by a keyword search in restricted-access research files from the Census of Fatal Occupational Injuries (CFOI) surveillance system of the Bureau of Labor Statistics from the years 1992-2017. RESULTS: There were 41 robot-related fatalities identified by the keyword search during the 26-year period of this study, 85% of which were males, with the most cases (29%) occurring within the age group 35-44 years. Fatalities occurred primarily with large employers that were geographically clustered, with the Midwest accounting for 46% of the total. Most of the cases involved stationary robots

(83%) and robots striking the decedents while operating under their own power (78%). Many of these striking incidents occurred while maintenance was being performed on a robot. CONCLUSIONS: The changing nature of robotics in the workplace suggests that emerging technologies may introduce new hazards in the workplace. Emerging technologies have led to an increase in the number of robots in the workplace and to increased human exposure to robotic machinery. These patterns demonstrate that public health professionals will likely face significant challenges to keep pace with developments in robotics to ensure the safety and health of workers across the country

Lefrancois M, Sultan-Taieb H, Webb J, Gervais MJ, Messing K, Blanchette-Luong V, et al. How to carry out participatory research that takes account of sex and gender issues: a scoping review of guidelines targeting health inequities. Canadian Journal of Public Health. 2023; 114(3):404-421.

<https://doi.org/10.17269/s41997-023-00742-z>

Abstract: OBJECTIVE: Conducting participatory research (PR) aimed at improving health implies considering inequitable power relations, including those related to sex/gender (S/G). This necessitates specific skills and methods and may be challenging especially since guidelines are scarce. Our objective was to perform a scoping review to provide a typology of existing guidelines for researchers on how to take account of S/G in the context of PR in public health, with a focus on occupational and environmental health. METHODS: All steps of the research were conducted with the collaboration of an advisory committee, following PR principles. Nineteen documents were retained from 513 references identified in nine scientific databases and grey literature between 2000 and 2020. Data on recommendations were extracted and coded qualitatively. Cluster analysis based on similarities in recommendations proposed in the documents identified four types: (1) empowerment-centered; (2) concrete action-centered; (3) macrosystem-centered; and (4) stakeholder-centered. SYNTHESIS: Many sources gave pointers on how to include S/G during data collection and analysis or during the dissemination of findings, but there was a dearth of suggestions for building partnerships with stakeholders and producing sustainable S/G sociopolitical transformations. Occupational health PR showed less similarities with other public health subfields including environmental health PR. Power relationships with workplace stakeholders generated specific obstacles related to S/G integration that require further attention. Intersectionality and reflexive practices emerged as overarching themes. CONCLUSION: This review provides helpful guidelines to researchers at different stages of planning PR, ranging from familiarizing themselves with S/G approaches to anticipating difficulties in their ongoing S/G-transformative PR

Phinias RN. Benefits and challenges relating to the implementation of health and safety leading indicators in the construction industry: a systematic review. *Safety Science*. 2023; 163:106131.

<https://doi.org/10.1016/j.ssci.2023.106131> [open access]

Abstract: Organisations have used both Health and safety (H&S) lagging and leading indicators as part of the measures taken to manage H&S. However, in recent years researchers have advocated strongly for the use of leading indicators over lagging indicators. While the use of leading indicators to improve H&S performance is well documented. However, there is no systematic literature reviews of the benefits and challenges relating to their implementation in the construction industry. This study aims to provide an overview of leading indicators as well as to identify the benefits and challenges relating to the implementation of leading indicators in the construction industry. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) procedure is used to conduct a systematic literature review. Scopus and Google Scholar produced a total of 335 articles. Based on the inclusion and exclusion criteria, 34 articles were considered relevant for review. Content analysis was applied, and the study identified eight benefits (identification of construction accidents, measurement and monitoring, prevention of construction accidents, early warning system, increase compliance with H&S legislations, anonymity and confidentiality, predictions and control measures) and eight challenges (training and communication, leadership and commitment, time and cost, effectiveness and uncertainty, varying definitions, dominance of quantitative indicators, convenience and worker involvement and participation) relating to the implementation of leading indicators. Study findings are critical for increasing construction practitioners and researchers knowledge and understanding of benefits and challenges relating to the implementation of leading indicators.

Racine E, Cioaba IM, and Boehlen W. Ethical aspects of the work conditions of public safety personnel: a need for attention and solidarity. *Canadian Journal of Public Health*. 2023; 114(3):502-506.

<https://doi.org/10.17269/s41997-023-00744-x> [open access]

Abstract: The work of public safety personnel (PSP; e.g. firefighters, police officers, and paramedics, among others) is essential to society but is practically and ethically complex, especially with the increased challenges posed by the COVID-19 pandemic. The strain on mental health in this population of workers and volunteers has been the focus of recent research. New programs and strategies are being developed and implemented in order to address the causes and implications of mental health problems at the individual and organizational levels in Canada and elsewhere. Yet, the properly ethical aspects of the work and work conditions of PSP have largely fallen outside the scope of public health research. There are few empirical studies on moral distress and moral injury of Canadian PSP, and the rich and complex moral life of these workers is often obfuscated by a pervasive, stoic, militaristic moral model that generally aligns with narrow biomedical treatment approaches.

We argue that the lack of attention to the public, social, and ethical aspects of the moral distress and moral injuries experienced by PSP in Canada warrants greater public and academic awareness, more research on experiences of moral distress and moral injury in PSP, and evidence-informed training and support programs for individuals and organizations

Rauscher K, Casteel C, Davis J, Myers D, and Peek-Asa C. Prevalence of workplace violence against young workers in the United States. *American Journal of Industrial Medicine*. 2023; 66(6):462-471.

<https://doi.org/10.1002/ajim.23479>

Abstract: Background: Workers under the age of 25 may be at particular risk for workplace violence, given their predominant employment in the high-risk retail and service industries. Little research exists, however, that estimates the scope of the problem within this population. To fill this gap, we conducted the first national study of workplace violence against young people in the United States. Methods: We analyzed survey data collected via telephone interview from a national sample of 1031 young workers ages 14 through 24 who held a formal job in the last 12 months. Weighted frequencies were calculated and χ^2 tests of significance were used to detect differences between groups. Results: Many youth experience workplace violence (60%). Verbal abuse of the sort that made victims feel scared and unsafe (53%) and sexual harassment (24%) were the most commonly reported forms of violence. Females were more likely than males to experience workplace violence overall ($p < 0.001$) and sexual harassment ($p < 0.001$) in particular. Males were more likely to experience verbal abuse ($p < 0.001$). Workplace violence was most prevalent among workers in healthcare settings and eating and drinking places. The occupation with the highest prevalence of workplace violence was customer service. Conclusions: Workplace violence is common among young workers in the United States and more widespread than prior estimates have suggested. This study is the first to provide a true national prevalence estimate of the problem of workplace violence among young workers ages 14 to 24 in the United States. These findings should be used to locate areas of concern and target resources where they are needed most to address this significant problem.

Sperandei S, Page A, Spittal MJ, and Pirkis J. Low education and mental health among older adults: the mediating role of employment and income. *Social Psychiatry and Psychiatric Epidemiology*. 2023; 58(5):823-831.

<https://doi.org/10.1007/s00127-021-02149-y>

Abstract: Purpose: Transition from work to retirement may be associated with poor mental health outcomes in older-age groups, especially among those of lower socio-economic position (SEP). This study investigates the association between low educational achievement and mental health status, and the mediating role of employment status and income level among older-age Australians. Methods: This study was based on the '45 and Up Study', a prospective cohort study of participants from New South Wales (Australia) aged 45 years and older (N = 267,153), followed-up over the period 2006-2018. A causal mediation analysis was

used to assess the total causal effect (TCE) of educational achievement level on psychological distress, and the extent of mediation by employment status and income level. Results: Lower educational achievement was associated with subsequent psychological distress, with a stronger TCE among those with low educational achievement (OR = 1.46, 95% CI 1.25-1.72), followed by those with intermediate educational achievement (OR = 1.26, 95% CI 1.07-1.48), compared to those with high educational achievement. In models investigating mediation by employment status and income level, 44.7%, (95% CI 34.2-55.3) of the association was mediated by employment status and income level, with a stronger mediating effect evident for income level. Conclusion: Findings suggest that employment status and income level changes at older age are more strongly associated with poorer mental health among those of lower SEP. Poor mental health associated with lower SEP may be ameliorated particularly by changes to income level, but also how people transition from employment to retirement.

Thompson A, Nanwa N, and Wong V. Evidence-based care programs for work-related concussion in Ontario. *Journal of the Ontario Occupational Health Nurses Association*. 2023; Spring/Summer:13-17. [doi unavailable as of May 12, 2023]

Unver S and Makal Organ E. The effect of anti-fatigue floor mat on pain and fatigue levels of surgical team members: a crossover study. *Applied Ergonomics*. 2023; 110:104017. <https://doi.org/10.1016/j.apergo.2023.104017>

Abstract: As ergonomics is important to maintain comfort, this study aimed to examine the effect of anti-fatigue floor mats on pain and fatigue levels of surgical team members. Thirty-eight members participated in this crossover-designed study with no-mat and with-mat conditions, separated by a one-week washout period. They stood on the 15 mm thick rubber anti-fatigue floor mat and on the standard antistatic polyvinyl chloride flooring surface during the surgical procedures. Subjective ratings of pain and fatigue levels were measured pre and after-surgery for each experimental condition using the Visual Analogue Scale and Fatigue-Visual Analogue Scale scales. The after-surgery pain and fatigue levels for the with-mat condition were significantly lower than the no mat condition ($p < .05$). Consequently, anti-fatigue floor mats are effective in decreasing pain and fatigue levels of surgical team members during surgical procedures. Using anti-fatigue mats may be a practical and easy way to prevent discomfort that is often experienced by surgical teams.

Vander Weerdt C, Stoddard-Dare P, and DeRigne L. Is paid sick leave bad for business? A systematic review. *American Journal of Industrial Medicine*. 2023; 66(6):429-440. <https://doi.org/10.1002/ajim.23469>

Abstract: Vigorous legislative activity both for and against paid sick leave has occurred over the last decade. Although a compelling body of evidence suggests that paid sick leave supports personal and public health goals, a notable barrier in opposition to paid sick leave is apprehension about the potential short-term and long-term harms to business. This review

critically assesses the relationship between paid sick leave and favorable or unfavorable business conditions. Utilizing the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, we systematically review six research databases between 2000 and November 2022. Of 2664 studies identified, 123 were considered potentially relevant and 43 were included in the review. In addition to absence from work, paid sick leave was associated with favorable business conditions such as increased job satisfaction; improved retention; and reductions in occupational injury, contagion, presenteeism, and death; as well as some measures of firm performance and labor market conditions. Overall, our review discovered more evidence supporting the relationship between paid sick leave and favorable business conditions as compared with evidence that supported unfavorable business conditions. Although more research is needed, these findings can be used to inform firm-level and public policy decisions about paid sick leave.

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