

ABOUT RESEARCH ALERT

Research Alert is a service provided to you by the Institute for Work & Health (IWH) to help you keep abreast of recent literature in the areas of occupational health and safety, epidemiology, public health and others within the IWH mandate. Please note that these articles have not been reviewed by Institute scientists to assess the quality of the studies. Research Alerts should not be considered an endorsement of the findings. Readers are cautioned not to act on the results of single studies, but rather to seek bodies of evidence. It should also be noted that the Institute for Work & Health cannot provide full-text of articles listed in Research Alerts to individuals outside of the organization, as this violates copyright legislation.

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

***Engel L, Arowolo I, Ewesesan R, Khan MN, Ripat J, Bottari C, et al. Contextual factors of financial capability and financial well-being for adults living with brain injury: a qualitative photovoice study. *Brain Injury*. 2024; 38(4):273-281.**

<https://doi.org/10.1080/02699052.2024.2310210> [open access]

Abstract: Objective: To identify the contextual factors related to financial capability and financial well-being for adults living with acquired brain injury (ABI). Design & method: We conducted a qualitative descriptive study using photovoice and included 17 adults who live with ABI in Manitoba, Canada. Over 3-to-5 weeks, participants took photos of their financial capability (i.e. knowledge, skills, and behaviors related to managing finances) or their financial well-being (i.e. subjective and objective financial outcomes). Participants were interviewed about their photos. Five researchers iteratively and thematically analyzed interview transcripts. Main outcomes/results: Analysis identified the importance of the economic, social, technology, and physical or sensory context. Subthemes related to: (i) hard times finding financial resources; (ii) processes not making sense; (iii) getting help from the right person; and (iv) invisible disability bias and stigma. Conclusions: There is decreased literature about financial capability or financial well-being after ABI. The results of this study highlight the salience of finance to living with ABI and the importance of the context to addressing financial-related life participation for people living with ABI. Information about contextual factors related to finance can improve rehabilitation assessment and intervention practice as well as emphasize needed accessibility changes to financial environments.

Alcalde-Gonzalez V, Galvez-Mozo A, and Valenzuela-Bustos A. Social movement unionism in Spain's feminized precarious service sector: criticism, cooperation and competition. *British Journal of Industrial Relations*. 2024; 62(1):154-173.

<https://doi.org/10.1111/bjir.12742> [open access]

Abstract: 'Social movement unionism' (SMU) has been suggested as a suitable strategy for union renewal in Spain, yet the literature on union renewal and SMU has two major shortcomings: (1) a lack of bottom-up studies, and (2) a lack of dialogue between industrial relations and social movement research. To redress these shortcomings, we make three contributions in this article: first, we provide evidence on the current opportunities for SMU in Spain's feminized precarious service sector; second, we apply a bottom-up intersectional approach to the study of SMU; and third, we bridge the research on industrial relations and on social movements by adopting a relational framework that looks at both union and non-union actors as key actors for union renewal. Our results show a landscape of co-existence, conflict, cooperation and competition between union and non-union actors, including established unions, radical grassroots unions and emerging forms of collective representation; however, if we are to develop SMU as a strategy for union renewal in post-Great Recession Spain, then there is still room for promoting deep coalition building between unions and novel forms of worker collectivism, as well as developing intersectional politics to reach non-traditional membership groups.

Costa S, Duyck W, Van Wouwe E, and Dirix N. Nudging safety behavior in the steel industry: evidence from two field studies. *Safety Science*. 2024; 173:106444.

<https://doi.org/10.1016/j.ssci.2024.106444>

Doukas AM, Sharma V, DePierro JM, Ho S, Starkweather S, and Marin DB. Effectiveness of CBT-informed behavioral health interventions for health care workers in a specialized clinical service during the COVID-19 pandemic. *American Journal of Public Health*. 2024; 114(S2):167-170.

<https://doi.org/10.2105/AJPH.2023.307435>

Abstract: Objectives. To evaluate symptomatology and clinical outcomes among treatment-seeking health care workers (HCWs). We examined engagement, presenting symptomatology, and treatment outcomes among a diverse group of HCWs in a large urban health system. Methods. Demographic and pretreatment-posttreatment outcome data were available for 69 HCWs who sought cognitive behavioral therapy (CBT), with or without medication management, at a specialized clinical center from July 1, 2020, to April 25, 2022. Results. Treatment-seeking HCWs predominantly identified as female (78.3%) and non-White (53.6%) and had a mean age of 36.33 ± 10.72 years. Wilcoxon signed-rank tests showed significant reductions in all symptoms and increased well-being ($P < .001$), with effect sizes ranging from 0.59 to 0.71. Conclusions. Our findings replicate those of existing research on the prevalence of psychiatric distress among HCWs, uniquely focusing on those seeking care. Our outcome data suggest that short-term CBT is effective in reducing clinical symptoms and increasing HCW well-being. Public Health Implications. Given the elevated rates of distress found in HCW surveys, evidence-based interventions such as ours are essential to ensure workforce well-being. Providing mental health care to HCWs has both individual benefits and potential implications for improved patient care and workforce retention. (*Am J Public Health*. 2024;114(S2):S167-S170. <https://doi.org/10.2105/AJPH.2023.307435>).

Farina E, Green C, and McVicar D. Zero hours contracts and self-reported (mental) health in the UK. *British Journal of Industrial Relations*. 2024; 62(1):50-71.

<https://doi.org/10.1111/bjir.12773> [open access]

Abstract: This article examines associations between precarious contract types and a range of self-reported health measures for the UK. We focus on zero hours contracts (ZHCs), an extreme form of precarious employment that has grown rapidly in the UK over the last decade, and on mental health. We demonstrate that workers employed on ZHCs are more likely to report a long-term health condition than workers employed on other types of contract, with the main driver being that they are almost twice as likely to report mental ill health. These associations survive conditioning on an extensive set of observable individual, job and contextual characteristics, and are robust to sensitivity analysis designed to explore the likely extent of bias due to unobserved confounders. We discuss potential explanations for these associations, from sorting of workers with poor health into ZHC employment to detrimental effects of ZHC employment on health, drawing on additional instrumental variables estimates to do so. Finally, we discuss potential policy implications.

Ibrahim A, Nnaji C, Namian M, and Shakouri M. Evaluating the impact of hazard information on fieldworkers' safety risk perception. *Journal of Construction Engineering and Management*. 2024; 150(3):04023174.

<https://doi.org/10.1061/JCEMD4.COENG-14061>

Jones LB, Jadhakhan F, and Falla D. The influence of exercise on pain, disability and quality of life in office workers with chronic neck pain: a systematic review and meta-analysis. *Applied Ergonomics*. 2024; 117:104216.

<https://doi.org/10.1016/j.apergo.2023.104216> [open access]

Abstract: Background: Exercise is recommended for office workers with neck pain. However, recent reviews evaluated the effectiveness of workplace interventions only. Objectives: To evaluate the effect of exercise on pain, disability, and quality of life (QoL) in office workers with chronic neck pain. Design: Systematic review with meta-analysis. Methods: Electronic databases were searched from inception to April 30, 2022, to identify studies in which participants were adults aged ≥18 years undergoing any form of neck exercises (e.g., strengthening, motor control) or physical activity (e.g., aerobic exercise) performed for a minimum of two-weeks without any other additional treatment besides advice or education. Two reviewers independently screened papers and determined the certainty of the evidence. Results: Eight randomised controlled trials met the eligibility criteria. Seven studies reported a significant decrease in Visual Analogue Scale (VAS) scores for neck pain intensity and five studies reported a significant decrease in Neck Disability Index (NDI) scores following strengthening exercises. Only one study assessed the effect of strengthening exercises on QoL and reported no significant effect. All eight included studies had a high risk of bias and the overall certainty of evidence was low. Meta-analyses demonstrated a significant decrease of neck pain intensity and disability for strengthening exercises compared to a control ($p < 0.01$). Conclusion: There is low certainty of evidence that strengthening of the neck, shoulder and scapular musculature is effective at reducing neck pain and disability in office workers. Further research evaluating the effect of exercise on QoL is required.

Kraut A, Rydz E, Walld R, Demers PA, and Peters CE. Carpal tunnel syndrome among Manitoba workers: results from the Manitoba Occupational Disease Surveillance System. *American Journal of Industrial Medicine*. 2024; 67(3):243-260.

<https://doi.org/10.1002/ajim.23566>

Abstract: BACKGROUND: Carpal tunnel syndrome (CTS) is associated with occupational high-force repetitive tasks and vibration. This project examines the relationship between CTS and work to: (1) identify jobs and industries with increased CTS risk; (2) explore whether there is a sex difference in the risk of CTS after controlling for occupation; and (3) determine whether any observed relationships persist after excluding Workers Compensation Board (WCB) accepted time-loss CTS claims. METHODS: We linked 95.5% of time-loss WCB claims from 2006 to 2019 to provincial administrative health data. The cohort included 143,001 unique person-occupation combinations. CTS cases were defined as at least two medical claims for (ICD-9 354) within a 12-month period or a surgical claim for CTS from 2 years before the WCB claim to 3 years after. WCB accepted CTS time-loss claims not identified by the medical claims were also included. RESULTS: A total of 4302 individuals (3.0%) met the CTS definition. Analysis revealed that the hazard ratios (HRs) of CTS vary considerably with occupation. Sex-based differences in CTS risks were observed, both in low- and high-risk occupations. In many occupations with increased HR, the HR remained elevated after excluding accepted time-loss WCB cases. CONCLUSIONS: The risk of developing CTS varied with occupation. Job titles with ergonomic risk factors had higher risks than those with lower exposures. This finding remained after eliminating time-loss compensated WCB cases, suggesting that all cases of CTS in high risk jobs are not identified in WCB statistics. Female workers in some job titles had excess CTS cases compared to male workers within the same job title

Lindsay S, Kosareva P, Thomson N, and Stinson J. A codeveloped web-based disability disclosure toolkit for youth with disabilities: mixed methods pilot evaluation. *JMIR Formative Research*. 2023; 7:e48609.

<https://doi.org/10.2196/48609> [open access]

Abstract: BACKGROUND: Youth and young adults with disabilities experience many barriers in securing employment such as discrimination, inaccessible environments, and lack of support. Youth often need to decide whether and how they should disclose their need for accommodations to employers, which can help them to do their best at work. However, few evidence-based toolkits focusing on disability disclosure exist for youth with various types of disabilities. Supporting youth to develop self-advocacy skills is salient because they are an underrepresented and marginalized group in the labor market. OBJECTIVE: The objective of this study was to conduct a pilot evaluation of a web-based toolkit to enhance disability disclosure for youth and young adults helping to advocate for their needs and request workplace accommodations. METHODS: We conducted 2 in-person focus groups to codevelop a web-based disability disclosure toolkit, which was followed by a pilot evaluation with a pre-post survey. Primary outcomes focused on the relevance of the toolkit content, preliminary perceived impact on knowledge and confidence, and open-ended feedback on the usefulness of the toolkit. Secondary outcomes focused on effectiveness (ie, measures of self-determination). RESULTS: A total of 14 youths with various types of disabilities took part in the study (aged 20-25 years; n=11, 78% female) including 3 who participated in the codevelopment focus group sessions and 11 youths who participated in the surveys. Our findings involved three main themes in the codevelopment sessions that included (1) disability disclosure and workplace accommodation experiences (ie,

knowing when, whether, and how to disclose their disability and request workplace accommodations), (2) usefulness of the tool (ie, relatable content, format and design, and suggestions for further development), and (3) perceived impact of the toolkit (ie, navigating disclosure decisions and how to approach employers and develop other relevant employment skills). The survey findings showed that the majority of participants (10/11, 91%) reported that the toolkit increased or changed their knowledge or understanding of disability disclosure. Most participants (8/11, 73%) reported that the toolkit helped to increase their perceived confidence in their daily activities. The majority of participants (8/11, 73%) agreed or strongly agreed that the toolkit was easy to understand and comprehensive. Regarding the preliminary impact of the toolkit, participants did not demonstrate any significant improvements in self-determination (all $P > .05$). **CONCLUSIONS:** Our findings emphasize the importance of codeveloping a disability disclosure toolkit with youth to enhance its relevance for their needs. Our toolkit indicates preliminary potential as an educational resource for youth and young adults with disabilities as they search for and secure employment. Further research is needed to assess the impact of the tool with larger samples to understand the impact of workplace disability disclosure decisions for youth with disabilities

Maniero C, Ng SM, Collett G, Godec T, Siddiqui I, Antoniou S, et al. Differential impact of COVID-19 on mental health and burnout. *Occupational Medicine*. 2024; 74(1):45-52.

<https://doi.org/10.1093/occmed/kqad011> [open access]

Abstract: **BACKGROUND:** There may be differential impact of the COVID-19 pandemic on mental health and burnout rates of healthcare professionals (HCPs) performing different roles. **AIMS:** To examine mental health and burnout rates, and possible drivers for any disparities between professional roles. **METHODS:** In this cohort study, online surveys were distributed to HCPs in July-September 2020 (baseline) and re-sent 4 months later (follow-up; December 2020) assessing for probable major depressive disorder (MDD), generalized anxiety disorder (GAD), insomnia, mental well-being and burnout (emotional exhaustion and depersonalization). Separate logistic regression models (at both phases) compared the risk of outcomes between roles: healthcare assistants (HCAs), nurses and midwives (nurses), allied health professionals (AHPs) and doctors (reference group). Separate linear regression models were also developed relating the change in scores to professional role. **RESULTS:** At baseline ($n = 1537$), nurses had a 1.9-fold and 2.5-fold increased risk of MDD and insomnia, respectively. AHPs had a 1.7-fold and 1.4-fold increased risk of MDD and emotional exhaustion, respectively. At follow-up ($n = 736$), the disproportionate risk between doctors and others worsened: nurses and HCAs were at 3.7-fold and 3.6-fold increased risk of insomnia, respectively. Nurses also had a significantly increased risk of MDD, GAD, poor mental well-being and burnout. Nurses also had significantly worsened anxiety, mental well-being and burnout scores over time, relative to doctors. **CONCLUSIONS:** Nurses and AHPs had excess risk of adverse mental health and burnout during the pandemic, and this difference worsened over time (in nurses especially). Our findings support adoption of targeted strategies accounting for different HCP roles

Rossi L, Zanetti M, and Pasca MG. Teachers during COVID-19: examining burnout levels and their work-life. *Work*. 2024; 77(1):37-47.

<https://doi.org/10.3233/WOR-220394>

Abstract: **BACKGROUND:** In March 2020, with the scope to reduce the spread of COVID-19, most national governments around the world canceled in-person education and moved to online learning.

Therefore, teachers and students had to adapt a new way of teaching. Most of Italian teachers never had such an experience before and encountered difficulties in effectively carrying out this process on their own. Difficulties that can naturally increase anxiety and stress, leading, in situations perceived as extreme, to burnout syndrome. **OBJECTIVES:** This paper endeavored to verify levels of job stress and burnout of Italian teachers caused by the COVID-19 pandemic using the validated Maslach Burnout Inventory-General. This study aimed to measure the association among the three main dimensions of burnout and the variables of teachers' personal and working lives that changed due to COVID-19. **METHOD:** The aim of this paper was to verify burnout state and to measure the association among the three dimensions of burnout and the personal and working lives of Italian teachers using structural equation model analysis. The analysis was conducted in December 2021 and considered the situation in which the Italian teachers (from primary to middle and upper school) are working since March 2020. **RESULTS:** The results showed that teachers were emotionally exhausted; they did not feel able to fully fulfill their task towards the students. This involved a high absenteeism, a lower quality of work performance and the impossibility of making an objective evaluation of the students with an inevitable flattening of the class level. In contrast, the study shows that teachers who experienced few problems had relatively low levels of burnout. **CONCLUSION:** The findings brought out some proposals to reduce the risk of burnout and increase the individual well-being of schoolwork organization with positive effects on the lives of students: to strengthen social identity, to avoid a full-time online connection, to promote a psychological support service and to promote resilience training

Sjorstrom M, Lewne M, Alderling M, Selander J, and Gustavsson P. An updated job-exposure matrix for occupational noise: development and validation. *Annals of Work Exposures and Health*. 2024; 68(2):146-154.

<https://doi.org/10.1093/annweh/wxad074> [open access]

Abstract: Objectives: The aim of this study was to create a quantitative job-exposure matrix (JEM) for noise including a large set of measurements for the Swedish workforce, a detailed exposure-level assessment, spanning over an extensive time period from 1970 to 2014. Methods: The JEM was developed by 2 teams, each with an experienced occupational hygienist and an occupational safety engineer. Each pair assessed the exposure using measurements performed and reported by occupational hygienists, occupational safety engineers, or similar, from 1970 to 2014. The measurements included either the original LAeq(8h) measurements or an LAeq(8h) levels calculated from partial measurements of the working day, provided that the measurement targeted a regular task usually performed during a full workday. The collection of measurement reports was done in 2008 and 2012 by contacting clinics working in the area of occupational health or occupational safety engineers and their submitted reports were added to our own material. Noise exposure assessments were inserted at the appropriate time period for the relevant job family. The final matrix was developed in a consensus procedure and the validity was investigated by comparison of the 2 team's individual results. Results: The noise JEM contains 321 job families with information regarding occupational noise from 1970 to 2014. The time-period label has a 5-yr scale starting in 1970. The estimated average 8 h (TWA) noise level in decibels [dB(A)] for every job family and 5-yr period was coded as 1: <70 dB(A), 2: 70 to 74 dB(A), 3: 75 to 79 dB(A), 4: 80 to 84 dB(A) or 5: 85(+) dB(A). The validation showed no systematic difference in relative position and very high agreement in the ordering of paired ordinal classifications. The JEM has also successfully been applied in several epidemiological studies. Conclusions: We present a JEM for occupational noise using Swedish data

from 1970 to 2014 with a higher degree of sensitivity in assessed noise exposure compared with the previously existing version. Repeated application of the JEM, in epidemiological studies, has shown consistent results and contributed to yielding important findings.

Vandevenne E and Vanroelen C. Measuring employment precariousness in gig jobs: a pilot study among food couriers in Brussels. *Work*. 2024; 77(2):487-510.

<https://doi.org/10.3233/WOR-220691> [open access]

Abstract: Background: Within the extensive literature on precarious working conditions in the gig economy, remarkably little attention has been paid to how we can formally assess precarity. The few existing measurement instruments that seek to capture precarity in the gig economy assess the characteristics of platforms as job providers, but do not consider the situation of individual gig workers. Moreover, these approaches do not account for the different employment statuses of gig workers. Objective: This research's objective was to adapt, test and validate the Employment Precariousness Scale (EPRES) to the context of food couriers in Belgium. Methods: Fieldwork observations were combined with primary survey-data (N = 123). The scale was validated by testing reliability and external validity. Results: Although the small sample size requires caution, the EPRES-gw (i.e., our adaptation for 'gig work') indicated sound reliability through sufficiently high internal consistency. The scale also showed good external validity through a significant positive correlation with poor well-being. Conclusion: The scale's characteristics in empirical analyses compare to previous research using the EPRES among employees. The EPRES-gw is therefore a promising instrument for studying employment precariousness in gig jobs.

Xu M, Ho V, Lavoue J, Olsson A, Schuz J, Richardson L, et al. Prevalent occupational exposures and risk of lung cancer among women: results from the application of the Canadian Job-Exposure Matrix (CANJEM) to a combined set of ten case-control studies. *American Journal of Industrial Medicine*. 2024; 67(3):200-213.

<https://doi.org/10.1002/ajim.23562>

Abstract: BACKGROUND: Worldwide, lung cancer is the second leading cause of cancer death in women. The present study explored associations between occupational exposures that are prevalent among women, and lung cancer. METHODS: Data from 10 case-control studies of lung cancer from Europe, Canada, and New Zealand conducted between 1988 and 2008 were combined. Lifetime occupational history and information on nonoccupational factors including smoking were available for 3040 incident lung cancer cases and 4187 controls. We linked each reported job to the Canadian Job-Exposure Matrix (CANJEM), which provided estimates of probability, intensity, and frequency of exposure to each selected agent in each job. For this analysis, we selected 15 agents (cleaning agents, biocides, cotton dust, synthetic fibers, formaldehyde, cooking fumes, organic solvents, cellulose, polycyclic aromatic hydrocarbons from petroleum, ammonia, metallic dust, alkanes C18+, iron compounds, isopropanol, and calcium carbonate) that had lifetime exposure prevalence of at least 5% in the combined study population. For each agent, we estimated lung cancer risk in each study center for ever-exposure, by duration of exposure, and by cumulative exposure, using separate logistic regression models adjusted for smoking and other covariates. We then estimated the meta-odds ratios using random-effects meta-analysis. RESULTS AND CONCLUSIONS: None of the agents assessed showed consistent and compelling associations with lung cancer among women. The following agents showed elevated odds ratio in some analyses: metallic dust, iron compounds, isopropanol, and

organic solvents. Future research into occupational lung cancer risk factors among women should prioritize these agents

Zhou S, Ogunjesa BA, and Raj M. Mental health outcomes of immigrant- and US-born caregivers: California health interview survey, 2019-2020. American Journal of Public Health. 2024; 114(S2):189-199.

<https://doi.org/10.2105/AJPH.2023.307396>

Abstract: Objectives. To compare the mental health outcomes of US-born with immigrant caregivers of adult care recipients. Methods. We conducted a cross-sectional secondary analysis of the 2019 California Health Interview Survey (CHIS), administered via web or telephone to 22 152 participants between September and December 2019. We characterized (1) caregivers and noncaregivers, and (2) US-born versus immigrant caregivers. Then, we estimated and compared (3) the relationship between caregiving status and severe psychological distress among US-born and immigrant respondents, and (4) correlates of severe psychological distress among US-born and immigrant respondents. Results. Caregivers were more likely than noncaregivers to report severe psychological distress ($P < .05$). Immigrant caregivers residing separately from their care recipient were significantly more likely to experience severe psychological distress (odds ratio = 3.76; $P < .01$). Conclusions. US-born and immigrant caregivers may experience different risk factors for psychological distress associated with caregiving. Clinical and community resources should be tailored to caregivers' distinct needs with consideration of how access to resources (e.g., language), circumstances (e.g., acculturation), and cultural norms (e.g., filial piety) may be associated with exacerbation of psychological distress among immigrants. (Am J Public Health. 2024;114(S2):S189-S199.

<https://doi.org/10.2105/AJPH.2023.307396>).

Missed an issue? Catch up on previous Research Alerts available on the IWH website
www.iwh.on.ca/journal-articles/research-alerts