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

**\*Shahidi FV, Jetha A, Kristman V, Smith PM, and Gignac MA. The employment quality of persons with disabilities: findings from a national survey. *Journal of Occupational Rehabilitation*. 2023; [epub ahead of print].**

<https://doi.org/10.1007/s10926-023-10113-7> [open access]

**Abstract:** PURPOSE: Labour market integration is a widely accepted strategy for promoting the social and economic inclusion of persons with disabilities. But what kinds of jobs do persons with disabilities obtain following their integration into the labour market? In this study, we use a novel survey of workers to describe and compare the employment quality of persons with and without disabilities in Canada. METHODS: We administered an online, cross-sectional survey to a heterogeneous sample of workers in Canada (n=2,794). We collected data on sixteen different employment conditions (e.g., temporary contract, job security, flexible work schedule, job lock, skill match, training opportunities, and union membership). We used latent class cluster analysis to construct a novel typology of employment quality describing four distinct 'types' of employment: standard, portfolio, instrumental, and precarious. We examined associations between disability status, disability type, and employment quality. RESULTS: Persons with disabilities reported consistently lower employment quality than their counterparts without disabilities. Persons with disabilities were nearly twice as likely to report low-quality employment in the form of either instrumental (i.e., secure but trapped) or precarious (i.e., insecure and unrewarding) employment. This gap in employment quality was particularly pronounced for those who reported living with both a physical and mental/cognitive condition. CONCLUSION: There are

widespread inequalities in the employment quality of persons with and without disabilities in Canada. Policies and programs aiming to improve the labour market situation of persons with disabilities should emphasize the importance of high-quality employment as a key facet of social and economic inclusion

**Amin R, Mittendorfer-Rutz E, Bjorkenstam E, Virtanen M, Helgesson M, Gustafsson N, et al. Time period effects in work disability due to common mental disorders among young employees in Sweden: a register-based cohort study across occupational classes and employment sectors. *European Journal of Public Health*. 2023; 33(2):272-278.**

<https://doi.org/10.1093/eurpub/ckad026> [open access]

**Abstract:** Background: We aimed to investigate time period effects in the risk of work disability, defined as long-term sickness absence (LTSA) and disability pension (DP) due to common mental disorders (CMDs), among young employees according to employment sector (private/public) and occupational class (non-manual/manual). Methods: Three cohorts, including all employed individuals with complete information on employment sector and occupational class, aged 19-29 years and resident in Sweden on 31 December 2004, 2009 and 2014 (n = 573 516, 665 138 and 600 889, respectively) were followed for 4 years. Multivariate-adjusted hazard ratios (aHRs) with 95% confidence intervals (CIs) were estimated to examine the risk of LTSA and DP due to CMDs using Cox regression analyses. Results: In all cohorts, public sector employees had higher aHRs for LTSA due to CMDs than private sector employees, irrespective of occupational class, e.g. aHR, 95% CI: 1.24, 1.16-1.33 and 1.15, 1.08-1.23 among non-manual and manual workers in cohort 2004. The rates of DP due to CMDs were much lower in cohorts 2009 and 2014 than 2004 leading to uncertain risk estimates in the later cohorts. Still, public sector manual workers had a higher risk for DP due to CMDs than manual workers in the private sector in cohort 2014 than in 2004 (aHR, 95% CI: 1.54, 1.34-1.76 and 3.64, 2.14-6.18, respectively). Conclusions: Manual workers in the public sector seem to have a higher risk of work disability due to CMDs than their counterparts in the private sector calling for the need for early intervention strategies to prevent long-term work disability.

**Barr E, Popkin R, Roodzant E, Jaworski B, and Temkin SM. Gender as a social and structural variable: research perspectives from the National Institutes of Health (NIH). *Translational Behavioral Medicine*. 2023; [epub ahead of print].**

<https://doi.org/10.1093/tbm/ibad014>

**Abstract:** Gender is a social and structural variable that encompasses multiple domains, each of which influences health: gender identity and expression, gender roles and norms, gendered power relations, and gender equality and equity. As such, gender has far-reaching impacts on health. Additional research is needed to continue delineating and untangling the effects of gender from the effects of sex and other biological variables. The National Institutes of Health (NIH) vision for women's health is a world in which the influence of sex and/or gender are integrated into the health research enterprise. However, much of the NIH-supported research on gender and health has, to date, been limited to a small number of

conditions (e.g., HIV, mental health, pregnancy) and locations (e.g., sub-Saharan Africa; India). Opportunities exist to support transdisciplinary knowledge transfer and interdisciplinary knowledge building by advancing health-related social science research that incorporates best practices from disciplines that have well-established methods, theories, and frameworks for examining the health impacts of gender and other social, cultural, and structural variables

**Dalager T, Welch A, O'Leary SP, Johnston V, and Sjogaard G. Clinically relevant decreases in neck/shoulder pain among office workers are associated with strength training adherence and exercise compliance: explorative analyses from a randomized controlled trial. *Physical Therapy*. 2023; 103(2):zac166.**

<https://doi.org/10.1093/ptj/pzac166>

**Forth J, Theodoropoulos N, and Bryson A. The role of the workplace in ethnic wage differentials. *British Journal of Industrial Relations*. 2023; 61(2):259-290.**

<https://doi.org/10.1111/bjir.12696> [open access]

Abstract: Using linked employer–employee data for Britain, we examine ethnic wage differentials among full-time employees. We find substantial ethnic segregation across workplaces. However, this inter-workplace segregation does not contribute to the aggregate wage penalty in Britain. Instead, most of the ethnic wage gap exists within the workplace, between observationally-equivalent co-workers. Lower pay satisfaction and higher levels of skill mismatch among ethnic minority workers are consistent with discrimination in wage-setting on the part of employers. The presence of recognized trade unions and the use of job evaluation schemes within the workplace are associated with a smaller ethnic wage gap. These findings indicate that more attention should be placed on ensuring fairness in wage determination.

**Heijkants CH, de Wind A, van Hooff MLM, Geurts SAE, and Boot CRL. Effectiveness of team and organisational level workplace interventions aimed at improving sustainable employability of aged care staff: a systematic review. *Journal of Occupational Rehabilitation*. 2023; 33(1):37-60.**

<https://doi.org/10.1007/s10926-022-10064-5> [open access]

Abstract: Purpose The sustainable employability of healthcare professionals in aged care is under pressure, but research into the effectiveness of interventions aimed at improving employees' sustainable employability is scarce. This review therefore aimed to investigate the effectiveness of workplace interventions on sustainable employability of healthcare professionals in aged care. Methods A systematic literature search was performed. Studies were included when reporting about the effect of an intervention at work in an aged care setting on outcomes related to one of the three components of sustainable employability (i.e. workability, vitality, employability). The methodological quality of each study was assessed and a rating system was used to determine the level of evidence. Additionally, a sensitivity

analysis was performed, accounting for the match between the intervention's focus and the targeted component of sustainable employability. Results Current review includes 32 interventions published between 1996 and 2019. Interventions covered learning and improving skills, changing the workplace, and exercising or resting. The initial analysis showed a strong level of evidence for employability and insufficient evidence for workability and vitality. The sensitivity analysis revealed strong evidence for the effectiveness of interventions addressing either employability or workability, and insufficient evidence for vitality. Conclusions Evidence for workplace interventions on sustainable employability of healthcare professionals in aged care differed. We found strong evidence for effects of workplace interventions on employability and for those directly targeting workability. Evidence for effects of interventions on vitality was insufficient. The alignment of the interventions to the targeted component of sustainable employability is important for effectiveness

**Lewis C, Stjernbrandt A, and Wahlstrom J. The association between cold exposure and musculoskeletal disorders: a prospective population-based study. *International Archives of Occupational & Environmental Health*. 2023; 96(4):565-575.**

<https://doi.org/10.1007/s00420-022-01949-2> [open access]

Abstract: OBJECTIVES: The aim of the study was to determine the association between occupational ambient cold exposure and neck-shoulder pain (NSP), low back pain (LBP), and radiating LBP. METHODS: The study cohort comprised of 3,843 working subjects in northern Sweden who answered a baseline (spring 2015) and a follow-up questionnaire (spring 2021). NSP, LBP, and radiating LBP were assessed in both surveys. Occupational cold exposure was assessed at baseline, on a whole number numerical rating scale (NRS) and categorized in quartiles. Binary logistic regression determined the association between cold exposure at baseline and incident NSP, LBP, and radiating LBP, adjusted for age, gender, body mass index, smoking, mental stress, and physical workload. RESULTS: There were statistically significant associations between high occupational ambient cold exposure (NRS 5-7 and NRS 8-10) and NSP (1.59; 95% CI 1.08-2.33 and OR 1.50; 95% CI 1.03-2.19); NRS 8-10 and LBP (OR 1.61; 95% CI 1.13-2.29); and NRS 5-7 and radiating LBP (OR 1.87; 95% CI 1.12-3.16). Gender-stratified analyses showed statistically significant associations between high occupational ambient cold exposure (NRS 5-7 and NRS 8-10) and NSP (OR 1.97; 95% CI 1.07-3.61 and OR 1.97; 95% CI 1.06-3.67) for men and between NRS 8-10 and LBP (OR 1.82; 95% CI 1.14-2.91) and NRS 5-7 and radiating LBP (OR 2.20; 95% CI 1.15-4.24) for women. CONCLUSIONS: Occupational ambient cold exposure was associated with NSP, LBP, and radiating LBP, and should be recognised as a possible occupational risk factor

**Lucas K, Gaines LGT, Paris-Davila T, and Nylander-French LA. Occupational exposure and serum levels of per- and polyfluoroalkyl substances (PFAS): a review. *American Journal of Industrial Medicine*. 2023; 66(5):379-392.**

<https://doi.org/10.1002/ajim.23454>

**Abstract:** BACKGROUND: Per- and polyfluoroalkyl substances, or PFAS, are a class of chemicals used in nearly all sectors of industry and many consumer products. Their resistance to degradation, however, means that PFAS are ubiquitous in the environment and bioaccumulate. PFAS exposure has also been linked to a variety of adverse health effects. Occupational PFAS exposure is of particular concern as research on PFAS exposure in worker populations has historically been limited and generally restricted to fluorochemical plant workers involved in PFAS production. METHODS: A comprehensive review of peer-reviewed scientific literature was conducted to investigate which worker populations may experience occupational exposure to PFAS. Serum PFAS levels reported in various occupations were analyzed and compared to serum PFAS levels published on the general public exposed to PFAS-contaminated drinking water and the study population of the National Health and Nutrition Examination Survey (NHANES). RESULTS: Our analysis indicates that professional ski waxers and firefighters may be exposed to several different PFAS at levels often similar to or higher than levels among fluorochemical plant workers and individuals in communities with PFAS-contaminated drinking water, and higher than levels in the general public. PFAS serum level data on other occupations were largely absent. CONCLUSIONS: Results highlight a need for additional research on occupational PFAS exposures and concomitant environmental exposures in these populations. Research on exposure levels in occupations and industries known or suspected to utilize PFAS is critically needed to foster informed recommendations for exposure mitigation measures to protect workers from adverse health effects of PFAS exposure

**Madsen AA, Brekke I, and Fekjaer SB. Women's attrition from male-dominated workplaces in Norway: the importance of numerical minority status, motherhood and class. *Work, Employment and Society*. 2023; 37(2):333-351.**

<https://doi.org/10.1177/09500170211004247> [open access]

**Abstract:** This study explores women's attrition from male-dominated workplaces based on Norwegian public administrative records, covering individuals born 1945-1983, in the period between 2003 and 2013. It examines sex differences in rates of attrition and tests the significance of two commonly proposed explanations in the literature, namely the degree of numerical minority status and motherhood. It also investigates whether these explanations vary by occupational class. Selection into male-dominated workplaces is accounted for by using individual fixed effects models. The results show that attrition rates from male-dominated workplaces are considerably higher among women than among men. Moreover, the risk of female attrition to sex-balanced workplaces increases, regardless of occupational class, with increases in the percentage of males. Childbirth is associated with an increased risk of attrition to female-dominated workplaces, while having young children ( $\leq 10$  years old) lowered the risk. This association, however, was primarily evident among working-class women in manual occupations.

**Ne'eman A and Maestas N. How has COVID-19 impacted disability employment? *Disability and Health Journal*. 2023; 16(2):101429.**

<https://doi.org/10.1016/j.dhjo.2022.101429> [open access]

**Abstract:** BACKGROUND: While the COVID-19 public health emergency has had disastrous health impacts for people with disabilities, it remains unclear what impact the associated economic recession and subsequent recovery have had on disability employment. OBJECTIVE: We evaluated employment trends for people with and without disabilities over the course of the COVID-19 recession and subsequent economic recovery, both overall and by occupational category (essential, non-essential, teleworkable, non-teleworkable, frontline, non-frontline). METHODS: We made use of data from the nationally representative Current Population Survey. Linear probability models were used to estimate percent changes in employment-to-population ratios and identify differences between disabled and non-disabled employment in each quarter broadly and within specific occupational categories. RESULTS: As the COVID-19 recession began in Q2 2020, people with disabilities experienced employment losses that were proportionately similar to those experienced by people without disabilities. However, during the subsequent economic recovery, the employment rate of people with disabilities grew more quickly in Q4 2021 through Q2 2022, driven by increased labor force participation. These employment gains have been concentrated in teleworkable, essential, and non-frontline occupations. CONCLUSION: Our findings suggest that people with disabilities are disproportionately benefiting from the rapid recovery from the initial economic contraction at the start of the pandemic

**Okonkwo PN and Wium JA. Investigating the effectiveness of health and safety management systems within construction organizations. *International Journal of Occupational Safety & Ergonomics*. 2023; 29(2):785-795.**

<https://doi.org/10.1080/10803548.2022.2082137>

**Abstract:** Objectives. Previous studies presented the advantages of implementing health and safety management systems (HSMSs) in the construction industry. Few studies have investigated the effectiveness of HSMSs in developing countries. This study adopts a strategic management and multilevel perspective to assess the three main construction HSMS types in South Africa in terms of their adequacy across 14 HSMS dimensions. Methods. A literature review identified 14 health and safety (H&S) management dimensions as building blocks of the strategically developed component of a HSMS. Statistical methods analysed the feedback from a questionnaire survey amongst 59 construction companies on the adequacy of three HSMS types observed in these companies across 14 HSMS dimensions. Results. Differences between the three H&S management types were identified, with inadequacies in three of the 14 H&S management dimensions across all three HSMS types. The three dimensions are accountability and incentives for employee participation, management of subcontractors, and employee competence and training. This could indicate less attention is paid to behavioural-based safety control strategies. Conclusions. The study quantified the differences



between the three H&S management types and will help contractor organizations to improve their HSMSs

**Pascual K, Fredman A, Naum A, Patil C, and Sikka N. Should mindfulness for health care workers go virtual? A mindfulness-based intervention using virtual reality and heart rate variability in the emergency department. *Workplace Health & Safety*. 2023; 71(4):188-194. <https://doi.org/10.1177/21650799221123258>**

**Abstract:** BACKGROUND: Research on burnout in the medical community has extensively studied the impact of mindfulness-based interventions (MBIs), which can include meditation, outdoor retreats, in-person didactics, and/or online wellness modules. However, in addition to these MBIs lacking objective, physiological measures for wellness, there has been little to no research involving virtual reality (VR) as an MBI modality for healthcare professionals in the United States. METHODS: A randomized controlled intervention trial was used to study the impact of VR-based guided-meditations in the form of brief paced-breathing exercises. Heart-rate variability (HRV), a biomarker for relaxation, was measured during each session. Thirty-two participants, consisting of primarily medical students, resident physicians, and registered nurses, were recruited to complete brief guided-meditations via a VR headset or a standalone mobile app in the emergency department (ED) on-call room of a large urban academic medical center. RESULTS: A total of 213 guided-meditation sessions were completed over the course of 4 weeks. Self-reported ratings of anxiety improved in both VR and mobile groups post-study. However, the VR group demonstrated higher intrasession HRV progress, indicating increased state of relaxation that also correlated with the number of sessions completed. Analysis by gender revealed disparity in HRV metrics between male and female VR participants. CONCLUSION/APPLICATION TO PRACTICE: VR-based guided meditations prove to be a feasible and accessible MBI that does not require extensive time commitment for healthcare workers. VR may be a more effective meditation platform compared with standalone mobile meditation apps, especially when used on a routine basis

**Rymenans I, Vanovenberghe C, Du Bois M, Van den Broeck A, and Lauwerier E. Process evaluation of a motivational interviewing intervention in a social security setting: a qualitative study among work-disabled patients. *Journal of Occupational Rehabilitation*. 2023; [epub ahead of print].**

<https://doi.org/10.1007/s10926-023-10108-4>

**Abstract:** Purpose Return to work (RTW) may be facilitated by motivational interviewing (MI), a counseling style designed to increase motivation towards behavior change. MI's relevance in a RTW context remains however unclear. Exploring how, for whom and in what circumstances MI works is therefore necessary. Methods Eighteen people (29-60 years; sick leave > 12 weeks) with low back pain (LBP) or medically unexplained symptoms (MUS) participated in a semi-structured interview after one MI consultation. We conducted a realist-informed process evaluation to explore MI's mechanisms of impact, its outcomes and how external factors may influence these. Data were coded using thematic analysis. Results

Main mechanisms were supporting autonomy, communicating with empathy and respect, facilitating feelings of competence and focusing on RTW solutions instead of hindrances. Competence support was more salient among LBP patients, whereas MUS patients benefited more from empathy and understanding. External factors were mentioned to have impacted MI's effectiveness and/or the further RTW process, being personal (e.g. acceptance of the condition), work-related (e.g. supervisor support) and societal (e.g. possibility of gradual RTW). Conclusions These results stress the importance of self-determination theory's support for autonomy, relatedness and competence, together with a solution-focused approach when stimulating patients' engagement regarding RTW. These mechanisms' instalment during RTW counseling and their long-term impact depends on both personal and system-like external factors. Belgium's social security system's premise, based on control, might actually hinder RTW instead of facilitating it. Further longitudinal research could explore MI's long-term effects as well as its complex interaction with external factors.

**Suijkerbuijk Y and Nieuwenhuijsen K. Identification of the return-to-work mode in unemployed workers with mental health issues: a focus group study among occupational health professionals. *Work*. 2023; 74(3):891-906.**

<https://doi.org/10.3233/WOR-210434>

**Abstract:** BACKGROUND: Return-to-work (RTW) perceptions and attitudes are predictive for future work participation in workers with mental health issues. OBJECTIVE: To identify what RTW perceptions and attitudes occupational health professionals recognize in sick-listed unemployed workers with mental health issues and how these perceptions and attitudes can be systematically assessed. METHODS: Four focus group sessions, each involving five-six different occupational health professionals, were held. The audio records were transcribed verbatim and coded by two researchers independently. A thematic analysis was conducted. RESULTS: Professionals recognized RTW perceptions and attitudes in sick-listed unemployed workers with mental health issues. These perceptions and attitudes were described as characteristics of three modes in a process regarding RTW: the passive, ambivalent and active RTW mode. A passive RTW mode includes perceptions about not being able to work and an expectant attitude. The ambivalent RTW mode is characterized by uncertainty and ambivalence regarding RTW with a desire for occupational support. Workers in an active RTW mode have positive RTW perceptions and show job search behavior. A main theme was the flexible nature of RTW attitudes and perceptions, with workers switching between the passive, ambivalent and active RTW modes. For the assessment of the RTW mode, the professionals preferred personal contact, possibly with support of a tool. This enables them to ask specific questions and to observe non-verbal signs. CONCLUSIONS: Recurring assessments of the RTW mode can be helpful in identifying unemployed workers with mental health issues at risk of long-term sickness absence and for starting targeted RTW interventions



**Valsecchi R, Anderson N, Balta ME, and Harrison J. Managing health and well-being in SMES through an adviceline: a typology of managerial behaviours. *Work, Employment and Society*. 2023; 37(2):449-466.**

<https://doi.org/10.1177/09500170211015113> [open access]

**Abstract:** Despite evidence supporting the application of health and well-being policies and practices in the workplace, small and medium-sized enterprises (SMEs) still struggle to manage health at work. To address this gap, this research explores the role of a new occupational health (OH) adviceline assisting and managing health at work within SMEs. From our qualitative data we develop a typology of managerial response patterns, which can be summarised into four behavioural types: business case behaviour, social model behaviour, protective behaviour, and avoidant behaviour. The study posits that both the business case and the social justice arguments need to be acknowledged while implementing and managing health and well-being initiatives in SMEs. However, the combination of these two models is very difficult to achieve, and in addition to an OH adviceline, other interventions need to be implemented to support SMEs.

**Zare F, Sadeghian F, Chaman R, and Mirrezaie SM. The impact of COVID-19 pandemic on physical activity levels among health care workers: longitudinal results from the SHAHWAR study. *Journal of Occupational & Environmental Medicine*. 2023; 65(4):307-314.**

<https://doi.org/10.1097/JOM.0000000000002740>

**Abstract:** Objective: The aim of the present study was to investigate physical activity (PA) changes during the COVID-19 pandemic among health care workers. Methods: In a follow-up study, staff PA was compared before and during the COVID-19 pandemic. Logistic regression model was used to determine the related factors with PA changes. Results: Total PA (MET minutes a week) among participants (n = 449) showed a statistically significant decrease during the pandemic compared with before the pandemic:  $3785.5 \pm 2237.09$  versus  $2363 \pm 2452.90$ ,  $P < 0.0001$ . Although transport-related PA decreased in medical and administrative department staff ( $3851 \pm 22.83.4$  vs  $2446.7 \pm 2477.6$ ,  $P < 0.0001$  and  $3593.8 \pm 2094.3$  vs  $2122.6 \pm 2373.8$ ,  $P < 0.0001$ , respectively), the decrease was associated with employment in the administrative and nonshift sectors with odds ratios of 2.37 (1.38 to 4.08) and 2.04 (1.28 to 3.26), respectively. Conclusion: Promoting PA at home and leisure is especially recommended to achieve the recommended PA levels.

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