*Bondebjerg A, Filges T, Pejtersen JH, Kildemoes MW, Burr H, Hasle P, Tompa E, et al. Occupational health and safety regulatory interventions to improve the work environment: an evidence and gap map of effectiveness studies. Campbell Systematic Reviews. 2023; 19(4):e1371.
https://doi.org/10.1002/cl2.1371   **[open access]**

Abstract: BACKGROUND: Unsafe and unhealthy working conditions lead to injuries and financial losses across the globe, resulting in a need for research into effective work environment interventions. OBJECTIVES: The objective of this evidence and gap map (EGM) is to provide an overview of existing systematic reviews and primary studies examining the effects of occupational health and safety regulatory interventions. SEARCH METHODS: Relevant studies are identified through searches in published and unpublished literature performed up to January 2023. SELECTION CRITERIA: The population for this EGM is workers above the age of 15 and their workplaces within the OECD. We include randomised controlled trials, non-randomised studies with a comparison of two or more groups of participants, and systematic reviews of effects. DATA COLLECTION AND ANALYSIS: The map has been populated based on information about interventions and outcomes, study design, OECD country, and publication status. We have performed critical appraisal of included systematic reviews using an adjusted version of the AMSTAR-2 tool. MAIN RESULTS: The included studies for this report consist of six systematic reviews, 28 primary effect studies, and three on-going studies. The interactive map shows that the largest cluster of studies is located in the inspection activity domain, while the sickness absence outcome domain and

the intervention categories for training initiatives and formulation of regulatory standards are only scarcely populated. Additionally, the AMSTAR-appraisal suggests a lack of rigorous systematic reviews and meta-analyses. AUTHORS' CONCLUSIONS: More research in the form of primary studies and rigorous systematic reviews is needed to provide stakeholders with better guidance as to what constitutes the most efficient regulatory approaches to improve the work environment

*Correia I, Meziat-Filho N, Furlan AD, Saragiotto B, and Reis FJJ. Are we missing the opioid consumption in low- and middle-income countries? Scandinavian Journal of Pain. 2024; 24(1).
https://doi.org/10.1515/sjpain-2023-0086   [open access]

Abstract: Objectives: The rise in opioid prescriptions with a parallel increase in opioid use disorders remains a significant challenge in some developed countries (opioid epidemic). However, little is known about opioid consumption in low- and middle-income countries (LMICs). In this short report, we aim to discuss the increase in opioid consumption in LMICs by providing an update on the opioid perspective in Brazil. Methods: We analyzed opioid sales on the publicly available Brazilian Health Regulatory Agency (ANVISA) database from 2015 to 2020. Results: In Brazil, opioid sales increased 34.8 %, from 8,839,029 prescriptions in 2015 to 11,913,823 prescriptions in 2020, this represents an increase from 44 to 56 prescriptions for every 1,000 inhabitants. Codeine phosphate combined with paracetamol and tramadol hydrochloride were the most common opioids prescribed with an increase each year. Conclusions: The results suggest that opioid prescriptions are rising in Brazil in a 5 years period. Brazil may have a unique opportunity to learn from other countries and develop consistent policies and guidelines to better educate patients and prescribers and to prevent an opioid crisis.

Aarhus L, Molaug I, and Engdahl B. No accelerated 20-year hearing decline after occupational noise exposure has ceased: the HUNT study. American Journal of Industrial Medicine. 2024; 67(1):10-17.
https://doi.org/10.1002/ajim.23543

Abstract: Objectives: It has been suggested that noise exposure can accelerate hearing decline after the noise exposure has ceased. We aimed to assess long-term hearing decline in persons with and without prior occupational noise exposure. Methods: We conducted a population-based longitudinal study in Norway using the Trøndelag Health Study (HUNT) from 1996 to 1998 (baseline) and from 2017 to 2019 (follow-up). The sample included 1648 participants with baseline age >=55 years (42% men, mean age 60 years) and <5 years occupational noise exposure after baseline. We analyzed the association between occupational noise exposure before baseline and mean hearing decline between 1998 and 2018 (20-year decline) at each frequency, adjusted for age, sex, education, and impulse noise exposure before baseline. Results: Occupational noise exposure before baseline (N = 603) was associated with baseline hearing loss, but not with later accelerated 20-year decline, at

any frequency. Noise-exposed persons had less subsequent 20-year decline at 3 kHz than did nonexposed. Restricting the noise-exposed group to persons who also had a baseline Coles notch (hearing thresholds at 3, 4, or 6 kHz of 10 dB or more compared with thresholds at 1 or 2 kHz and 6 or 8 kHz; N = 211), the exposed group showed less 20-year decline at both 3 and 4 kHz, as well as less accelerated 20-year decline at 8 kHz, compared with the nonexposed. Conclusion: Our large long-term longitudinal study shows no increased risk of continuing hearing decline after occupational noise exposure has ceased. The finding supports a conclusion that ear damage stops when the noise exposure is ended.

Alves Pereira S, Dos Santos NR, Pais L, and Pereira M. Decent work and the effect of the COVID-19 pandemic: a two-wave study. Work. 2023; 76(4):1275-1283.
https://doi.org/10.3233/WOR-220590
Abstract: BACKGROUND: The world is going through a challenging historical moment, with the COVID-19 pandemic affecting billions of lives and communities worldwide. OBJECTIVE: Building on the widespread negative impact of the pandemic on the socio-economic context, and consequently on the labour market, the aim of this study was to analyse the effect of the COVID-19 pandemic on workers' perception of decent work. METHODS: The Decent Work Questionnaire was administered to 243 workers from seven Portuguese organisations at two-time points (before and during the pandemic). RESULTS: Results revealed a positive and significant effect of the COVID-19 pandemic on six of seven dimensions of decent work, particularly those related to Meaningful Remuneration for the Exercise of Citizenship and Health and Safety. CONCLUSION: The positive effects of social comparison processes are stronger than the negative effects of the adverse socio-economic context. Faced with the COVID-19 pandemic, workers may have compared their work situation with the condition of other workers, activating an increase in their subjective perception of the value of their current reality

Berkman LF, Kelly EL, Hammer LB, Mierzwa F, Bodner T, McNamara T, et al. Employee cardiometabolic risk following a cluster-randomized workplace intervention from the work, family and health network, 2009-2013. American Journal of Public Health. 2023; 113(12):1322-1331.
https://doi.org/10.2105/AJPH.2023.307413
Abstract: Objectives. To examine whether workplace interventions to increase workplace flexibility and supervisor support and decrease work-family conflict can reduce cardiometabolic risk. Methods. We randomly assigned employees from information technology (n = 555) and long-term care (n = 973) industries in the United States to the Work, Family and Health Network intervention or usual practice (we collected the data 2009-2013). We calculated a validated cardiometabolic risk score (CRS) based on resting blood pressure, HbA1c (glycated hemoglobin), HDL (high-density lipoprotein) and total cholesterol, height and weight (body mass index), and tobacco consumption. We compared changes in baseline CRS to 12-month follow-up. Results. There was no significant main effect on CRS associated

with the intervention in either industry. However, significant interaction effects revealed that the intervention improved CRS at the 12-month follow-up among intervention participants in both industries with a higher baseline CRS. Age also moderated intervention effects: older employees had significantly larger reductions in CRS at 12 months than did younger employees. Conclusions. The intervention benefited employee health by reducing CRS equivalent to 5 to 10 years of age-related changes for those with a higher baseline CRS and for older employees. Trial Registration. ClinicalTrials.gov Identifier: NCT02050204. (Am J Public Health. 2023;113(12):1322-1331. https://doi.org/10.2105/AJPH.2023.307413).

Bezzina A, Austin E, Nguyen H, and James C. Workplace psychosocial factors and their association with musculoskeletal disorders: a systematic review of longitudinal studies. Workplace Health & Safety. 2023; 71(12):578-588.
https://doi.org/10.1177/21650799231193578   **[open access]**

Abstract: This systematic review examines literature regarding the relationship between workplace psychosocial factors and musculoskeletal disorders (MSDs). Musculoskeletal disorders are the leading cause of work disability, resulting in billions of dollars of financial losses. Evidence suggests that workplace psychosocial factors can lead to the development and progression of MSDs. A data search was conducted in MEDLINE, EMBASE, PsychINFO, Scopus, and CINAHL (Cumulative Index to Nursing and Allied Health Literature) from August 2009 to May 2020 inclusive. Other eligibility criteria included studies published in English, conducted on adults within a workplace setting, conducted in developed economies, and were stability-control longitudinal observational studies. Studies were independently screened for eligibility, using COVIDENCE (software for managing and streamlining systematic reviews) and assessed for quality by multiple authors, using the JBI Evidence synthesis tool. From 6,812 studies, 47 articles were included in the final analysis. The most common MSDs investigated were lower back pain, neck and shoulder pain, and upper extremity symptoms and disorders. Included articles identified that psychosocial workplace factors of support, collaboration, job control, and job demands were statistically significantly associated with risk and progression of MSDs. Review of the articles included in this article supports the theory that MSDs have a multifactorial, complex etiology that includes psychosocial factors. Interventions to enhance psychosocial work environment provide opportunities to reduce the risk of MSDs

D'Costa I, Truong M, Russell L, and Adams K. Employee perceptions of race and racism in an Australian hospital. Social Science & Medicine. 2023; 339:116364.
https://doi.org/10.1016/j.socscimed.2023.116364   **[open access]**

Abstract: BACKGROUND: Racism contributes to health inequities faced by people of colour and marginalised groups. Despite widespread recognition of the impacts of racism, mitigating strategies and legislation have been largely unsuccessful. Research into racism in healthcare has mostly examined personal experiences of healthcare workers and patients, assuming that the definitions of racism and race are similarly understood by all. However, ethnicity and race

are often conflated, and racism seen as primarily interpersonal and ahistorical. PURPOSE: This paper explores hospital employee understandings of racism, its impacts and how to reduce it. METHODS: Forty-nine staff within one Australian hospital participated in individual qualitative interviews regarding the definition, impact, and ways of reducing racism. Interviews were analysed with a reflexive thematic analytic approach using a Postcolonial framework. RESULTS: Participants described racism as being experienced by marginalised groups of people in Australia. They identified that racism has detrimental effects on health and wellbeing. Not all were clear regarding what constituted racism: it was not described as an ideology created to justify colonial distribution of power and resources. Some thought that racism was individual prejudice while others noted it was also structural in nature. Participants commonly defined race as involving physical or cultural differences, suggesting that discredited historical and colonial concepts of race continue in Australian society. While many felt that education was the best way to reduce racism and its impacts, some participants noted that being educated did not necessarily change racist behaviour. CONCLUSIONS: The lack of accurate understanding of the concept of race and racism likely contributes to the relatively poor effect of current strategies to combat racism. As an initial part of deeper systemic anti-racist reform, this research supports calls for anti-racist education to clarify the definition of racism as an ideology

Ervin J, Taouk Y, Hewitt B, and King T. The gendered associations between precarious employment and mental health in working-age Australians: a longitudinal analysis using 16 waves of the HILDA survey. Social Science & Medicine. 2023; 339:116382. https://doi.org/10.1016/j.socscimed.2023.116382 **[open access]**

Abstract: Unemployment and precarious employment (PE) are routinely found to be associated with poorer mental health. Importantly, women are over-represented in PE (due to disproportionate unpaid care demands), yet a gender lens has been lacking in much of the extant literature. This study addresses several gaps by reconsidering how PE can be conceptualised from a gender perspective and examining the impact of differing levels of multidimensional PE on the mental health of working-age Australians. Utilising sixteen annual waves (2005-2020) of the HILDA survey, this longitudinal study employed mixed-effects analysis and Mundlak modelling to examine the association between PE and mental health in working-age (25-64yrs) adults. Mental health was assessed using the MHI-5 scale. A multidimensional PE scale (based on objective and subjective indicators) was developed and three levels of precarity were modelled. 19,442 participants were included in the analyses and all models were stratified by gender. We found women experience greater exposure to PE in Australia, and our results showed a ubiquitously strong and negative association between PE and mental health in both women and men, across all levels of PE, with a dose dependent association observed with increasing PE. Additional adjustment for prior mental health slightly attenuated effect sizes, but the strength and direction of all associations were unchanged. This study provides longitudinal evidence of the detrimental impact of PE on the mental health of working age Australians, highlighting the importance of labour regulations

and employment policies to minimize PE for all adults. However, given women's differential exposure to PE, this study also reinforces the urgent need for gender-sensitive social policies to address continued inequity in the division of unpaid household labour to promote a more equitable paid labour market into the future

Ferrante D, Angelini A, Barbiero F, Barbone F, Bauleo L, Binazzi A, et al. Cause specific mortality in an Italian pool of asbestos workers cohorts. American Journal of Industrial Medicine. 2024; 67(1):31-43.
https://doi.org/10.1002/ajim.23546

Abstract: Background: Asbestos is a known human carcinogen and is causally associated with malignant mesothelioma, lung, larynx and ovarian cancers. Methods: Cancer risk was studied among a pool of formerly asbestos-exposed workers in Italy. Fifty-two Italian asbestos cohorts (asbestos-cement, rolling-stock, shipbuilding, and other) were pooled and their mortality follow-up was updated to 2018. Standardized mortality ratios (SMRs) were computed for major causes of death considering duration of exposure and time since first exposure (TSFE), using reference rates by region, age and calendar period. Results: The study included 63,502 subjects (57,156 men and 6346 women): 40% who were alive, 58% who died (cause known for 92%), and 2% lost to follow-up. Mortality was increased for all causes (SMR: men = 1.04, 95% confidence interval [CI] 1.03-1.05; women = 1.15, 95% CI 1.11-1.18), all malignancies (SMR: men = 1.21, 95% CI 1.18-1.23; women = 1.29, 95% CI 1.22-1.37), pleural and peritoneal malignancies (men: SMR = 10.46, 95% CI 9.86-11.09 and 4.29, 95% CI 3.66-5.00; women: SMR = 27.13, 95% CI 23.29-31.42 and 7.51, 95% CI 5.52-9.98), lung (SMR: men = 1.28, 95% CI 1.24-1.32; women = 1.26, 95% CI 1.02-1.53), and ovarian cancer (SMR = 1.42, 95% CI 1.08-1.84). Pleural cancer mortality increased during the first 40 years of TSFE (latency), reaching a plateau thereafter. Conclusions: Analyses by time-dependent variables showed that the risk for pleural neoplasms increased with latency and no longer increases at long TSFE, consistent with asbestos clearance from the lungs. Peritoneal neoplasm risk increased over all observation time.

Lahlouh K, Oumessaoud A, Huaman-Ramirez R, and Ouhannour H. COVID-19 safety leadership, perceived severity, and emotional exhaustion: does safety culture matter? Journal of Safety Research. 2023; 87:496-507.
https://doi.org/10.1016/j.jsr.2023.09.004

Abstract: INTRODUCTION: Emotional exhaustion is a major health-related issue that employees face, especially during crises such as pandemics. This study seeks to understand how safety leadership applied to the COVID-19 pandemic relates to emotional exhaustion, and to examine its mechanisms (i.e., perceived severity) along with its boundary condition (i.e., safety culture). METHOD: A time lag study was conducted to collect data from 229 employees working in the service industry in Morocco. Data were analyzed through the Partial Least Squares Structural Equation Modeling (PLS-SEM) technique using SmartPLS 4. RESULTS: The results demonstrate that safety leadership is negatively related to emotional

exhaustion. Additionally, they suggest that the relationship between COVID-19 safety leadership and perceived severity depends on the level of the moderating variable (i.e., safety culture). Specifically, the relationship is positive when safety culture is low, but is negative when safety culture is high. PRACTICAL APPLICATIONS: The results of this study are important as they extend our knowledge of the nature of safety leadership and emotional exhaustion, and offer managers practical implications that can help to optimize safety leadership practices

Lari M. A longitudinal study on the impact of occupational health and safety practices on employee productivity. Safety Science. 2024; 170:106374.
https://doi.org/10.1016/j.ssci.2023.106374

Salonen L, Hartikainen E, Solovieva S, Viikari-Juntura E, and Leinonen T. Contribution of compositional changes in the workforce to sickness absence trends in Finland. SSM - Population Health. 2023; 24:101525.
https://doi.org/10.1016/j.ssmph.2023.101525   [open access]

Abstract: In this study, we assessed whether the long-term decrease in sickness absences in Finland is explained by observed and unobserved compositional changes in the workforce. Utilizing register-based panel data on Finnish wage earners aged 30-62, we examined the annual onset of compensated sickness absence (granted after 10 weekdays) in the period 2005-2016. We applied random effects models adjusting for changes in the observed sociodemographic and occupational characteristics of the study population. We also applied fixed effects models, with corrections of the estimates for cohort ageing, to additionally account for the unobserved time-invariant characteristics of the study population over the years. Of the observed characteristics, increasing educational level partly explained the decreasing trend in sickness absences, and the further contribution of the occupational class was weak. Additionally, accounting for unobserved individual characteristics further explained the decreasing trend in sickness absences among those aged 30-47 years and led to a reverse increasing trend among those aged 48-62 years irrespective of sex and employment sector. Particularly for those over 47 years old, the decrease in sickness absences appeared to be more strongly influenced by compositional changes in characteristics that are established before fully entering the labour market - such as educational level as well as unmeasured individual characteristics that remain unchanged after childhood and early adulthood - than in the work environment or other factors contributing at working age. Sickness absence trends fluctuated during economic cycles, which did not appear to be explained by immediate changes in the observed or unobserved characteristics. Different mechanisms are likely to explain long-term sickness absence trends and trends around economic cycles. Attempts to improve work ability and labour market inclusion in long-term should rely more on increasing educational levels among the workforce and on interventions carried out early during the life course

Saxby K, Dickinson H, Petrie D, Kavanagh A, and Aitken Z. The impact of employment on mental healthcare use among people with disability: distinguishing between part- and full-time employment. Scandinavian Journal of Work, Environment & Health. 2023; 49(8):598-609.

https://doi.org/10.5271/sjweh.4123   [open access]

Abstract: Objective: Employment can improve mental health among people with disability (PWD), however, little is known about how different levels of workforce participation influence mental healthcare use. The aim of this study was to estimate the extent to which different levels of working hours are associated with changes in mental healthcare use among PWD. Methods: Data on working hours and healthcare use among working age PWD who were receiving government benefits (N=260 825) was obtained from Australian Census-linked administrative records between 2011 and 2019. Individual fixed effects panel models were used to estimate the impact of increased working hours on mental healthcare (services and prescriptions). Heterogeneity analyses by job security and key sociodemographic characteristics were conducted. Results: Compared to not working, we found that working 1-14, 15-29, and =30 hours per week was respectively associated with a 3.3%, 18.0%, and 9.9% reduction in the use of mental healthcare prescriptions as well as a 6.8%, 18.4%, and 22.3% reduction in the use of mental healthcare services by PWD. The effects were larger for PWD in more secure work and those living in rural and disadvantaged areas. Conclusions: Working more hours was associated with reduced mental healthcare use among PWD. Policy interventions should consider the broader benefits of enabling part-time and secure work placements for PWD, particularly for those living in rural and disadvantaged regions.

Sun K, Lan T, Goh YM, Safiena S, Huang YH, Lytle B, et al. An interpretable clustering approach to safety climate analysis: examining driver group distinctions. Accident Analysis and Prevention. 2023; 196:107420.

https://doi.org/10.1016/j.aap.2023.107420

Abstract: The transportation industry, particularly the trucking sector, is prone to workplace accidents and fatalities. Accidents involving large trucks accounted for a considerable percentage of overall traffic fatalities. Recognizing the crucial role of safety climate in accident prevention, researchers have sought to understand its factors and measure its impact within organizations. While existing data-driven safety climate studies have made remarkable progress, clustering employees based on their safety climate perception is innovative and has not been extensively utilized in research. Identifying clusters of drivers based on their safety climate perception allows the organization to profile its workforce and devise more impactful interventions. The lack of utilizing the clustering approach could be due to difficulties interpreting or explaining the factors influencing employees' cluster membership. Moreover, existing safety-related studies did not compare multiple clustering algorithms, resulting in potential bias. To address these problems, this study introduces an interpretable clustering approach for safety climate analysis. This study compares five algorithms for clustering truck drivers based on their safety climate perceptions. It also

proposes a novel method for quantitatively evaluating partial dependence plots (QPDP). Then, to better interpret the clustering results, this study introduces different interpretable machine learning measures (Shapley additive explanations, permutation feature importance, and QPDP). The Python code used in this study is available at https://github.com/NUS-DBE/truck-driver-safety-climate. This study explains the clusters based on the importance of different safety climate factors. Drawing on data collected from more than 7,000 American truck drivers, this study significantly contributes to the scientific literature. It highlights the critical role of supervisory care promotion in distinguishing various driver groups. Moreover, it showcases the advantages of employing machine learning techniques, such as cluster analysis, to enrich the scientific knowledge in this field. Future studies could involve experimental methods to assess strategies for enhancing supervisory care promotion, as well as integrating deep learning clustering techniques with safety climate evaluation

Wong JJ, Hogg-Johnson S, De Groote W, Cwirlej-Sozanka A, Garin O, Ferrer M, et al. **Minimal important difference of the 12-item World Health Organization Disability Assessment Schedule (WHODAS) 2.0 in persons with chronic low back pain. Chiropractic & Manual Therapies. 2023; 31(1):49.**
https://doi.org/10.1186/s12998-023-00521-0   [open access]

Abstract: Background: The World Health Organization Disability Assessment Schedule 2.0 12-item survey (WHODAS-12) is a questionnaire developed by the WHO to measure functioning across health conditions, cultures, and settings. WHODAS-12 consists of a subset of the 36 items of WHODAS-2.0 36-item questionnaire. Little is known about the minimal important difference (MID) of WHODAS-12 in persons with chronic low back pain (LBP), which would be useful to determine whether rehabilitation improves functioning to an extent that is meaningful for people experiencing the condition. Our objective was to estimate an anchor-based MID for WHODAS-12 questionnaire in persons with chronic LBP. Methods: We analyzed data from two cohort studies (identified in our previous systematic review) conducted in Europe that measured functioning using the WHODAS-36 in adults with chronic LBP. Eligible participants were adults with chronic LBP with scores on another measure as an anchor to indicate participants with small but important changes in functioning over time [Short-form-36 Physical Functioning (SF36-PF) or Oswestry Disability Index (ODI)] at baseline and follow-up (study 1: 3-months post-treatment; study 2: 1-month post-discharge from hospital). WHODAS-12 scores were constructed as sums of the 12 items (scored 0-4), with possible scores ranging from 0 to 48. We calculated the mean WHODAS-12 score in participants who achieved a small but meaningful improvement on SF36-PF or ODI at follow-up. A meaningful improvement was an MID of 4-16 on ODI or 5-16 on SF36-PF. Results: Of 70 eligible participants in study 1 (mean age = 54.1 years, SD = 14.7; 69% female), 18 achieved a small meaningful improvement based on SF-36 PF. Corresponding mean WHODAS-12 change score was - 3.22/48 (95% CI -4.79 to -1.64). Of 89 eligible participants in study 2 (mean age = 65.5 years, SD = 11.5; 61% female), 50 achieved a small meaningful improvement based on ODI. Corresponding mean WHODAS-12 change score was - 5.99/48 (95% CI - 7.20 to -4.79).

Conclusions: Using an anchor-based approach, the MID of WHODAS-12 is estimated at -3.22 (95% CI -4.79 to -1.64) or -5.99 (95% CI - 7.20 to -4.79) in adults with chronic LBP. These MID values inform the utility of WHODAS-12 in measuring functioning to determine whether rehabilitation or other health services achieve a minimal difference that is meaningful to patients with chronic LBP.

Young P, Chow V, Haslam C, and Barker J. A qualitative study exploring white-collar employee/manager experiences of mental health and well-being initiatives in corporate environments. Journal of Occupational & Environmental Medicine. 2023; 65(12):e734-e743. https://doi.org/10.1097/JOM.0000000000002969

Abstract: OBJECTIVE: The aim of the study is to explore white-collar corporate employee/manager experiences of current employer-led mental health and well-being initiatives. METHODS: Twenty-five participants took part in semistructured interviews yielding over 19 hours of data. Thematic analysis of the interview transcripts was undertaken. Participants worked for organizations including investment banks, insurers, asset managers, consultants, public relations, marketing, and legal firms. RESULTS: Many participants were skeptical of the effectiveness of current company-led mental health and well-being initiatives against a backdrop of high job demands and unsupportive cultures. A commonly expressed view was that organizations were paying lip service to the issue. Participants communicated that more leadership role modeling on mental health and well-being, supportive job designs, and accessible skills-focused psychological support would be beneficial. CONCLUSIONS: Corporate white-collar employees/managers welcome mental health and well-being initiatives but are skeptical about their current effectiveness

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