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

**\*Gupta A, Johnson S, Barraclough M, Su J, Bingham K, Knight AM, Diaz Martinez JP, Kakvan M, Tartaglia MC, Ruttan L, Marzouk S, Wither J, Choi M, Bonilla D, Appenzeller S, Beaton D, et al. Outcome clusters and their stability over 1 year in patients with SLE: self-reported and performance-based cognitive function, disease activity, mood and health-related quality of life. *Lupus Science & Medicine*. 2024; 11(2):e001006.**

<https://doi.org/10.1136/lupus-2023-001006> [open access]

Abstract: OBJECTIVE: To determine if self-reported fatigue, anxiety, depression, cognitive difficulties, health-related quality of life, disease activity scores and neuropsychological battery (NB) cluster into distinct groups in patients with SLE based on symptom intensity and if they change at 1-year follow-up. METHODS: This is a retrospective analysis of consecutive consenting patients, followed at a single centre. Patients completed a comprehensive NB, the Beck Anxiety Inventory, Beck Depression Inventory, Fatigue Severity Scale, Short-Form Health Survey Physical Component Summary and Mental Component Summary scores and the Perceived Deficits Questionnaire. Disease activity was assessed by Systemic Lupus Erythematosus Disease Activity Index 2000. Ward's method was used for clustering and principal component analysis was used to visualise the number of clusters. Stability at 1 year was assessed with kappa statistic. RESULTS: Among 142 patients, three clusters were found: cluster 1 had mild symptom intensity, cluster 2 had moderate symptom intensity and cluster 3 had severe symptom intensity. At 1-year follow-up, 49% of patients remained in their baseline cluster. The mild cluster had the highest stability (77% of patients stayed in the same cluster), followed by the severe cluster (51%), and moderate cluster had the lowest stability (3%). A minority of patients from mild cluster moved to severe cluster (19%). In severe cluster, a larger number moved to moderate cluster (40%) and fewer to mild cluster (9%). CONCLUSION: Three distinct clusters of symptom intensity were documented in patients with SLE in association with cognitive function. There was a

lower tendency for patients in the mild and severe clusters to move but not moderate cluster over the course of a year. This may demonstrate an opportunity for intervention to have moderate cluster patients move to mild cluster instead of moving to severe cluster. Further studies are necessary to assess factors that affect movement into moderate cluster

**Cagno E, Accordini D, Neri A, Negri E, and Macchi M. Digital solutions for workplace safety: an empirical study on their adoption in Italian metalworking SMEs. *Safety Science*. 2024; 177:106598. <https://doi.org/10.1016/j.ssci.2024.106598> [open access]**

Abstract: Occupational safety is a critical aspect of the manufacturing sector, especially for small and medium-sized enterprises, which often face a safety divide compared to large companies due to significant differences in resources and awareness. Digital solutions can provide interesting support for dealing with specific hazardous situations and improving safety performance. However, there is a digital divide based on company size when it comes to the adoption of innovative digital solutions by small and medium-sized enterprises. This digital divide could widen the safety divide. To bridge these divides, the present research, through an extensive survey conducted among employers of Italian metalworking small and medium enterprises, explores various digital solutions and their potential to tackle hazardous situations in the workplace; it also addresses barriers and drivers influencing the adoption of the solutions and evaluates the results against different contextual factors characterizing the studied enterprises. Key barriers adopting digital solutions include the lack of perceived benefits, privacy concerns, implementation difficulties, and cost. On the other hand, the clarity and trustworthiness of the data collected and the ease of use of a digital solution can support the adoption. The study offers academic and managerial insights and contributes to the debate on the transition to Industry 5.0.

**Chalkou K, Hamza T, Benkert P, Kuhle J, Zecca C, Simoneau G, et al. Combining randomized and non-randomized data to predict heterogeneous effects of competing treatments. *Research Synthesis Methods*. 2024; 15(4):641-656. <https://doi.org/10.1002/jrsm.1717> [open access]**

Abstract: Some patients benefit from a treatment while others may do so less or do not benefit at all. We have previously developed a two-stage network meta-regression prediction model that synthesized randomized trials and evaluates how treatment effects vary across patient characteristics. In this article, we extended this model to combine different sources of types in different formats: aggregate data (AD) and individual participant data (IPD) from randomized and non-randomized evidence. In the first stage, a prognostic model is developed to predict the baseline risk of the outcome using a large cohort study. In the second stage, we recalibrated this prognostic model to improve our predictions for patients enrolled in randomized trials. In the third stage, we used the baseline risk as effect modifier in a network meta-regression model combining AD, IPD randomized clinical trial to estimate heterogeneous treatment effects. We illustrated the approach in the re-analysis of a network of studies comparing three drugs for relapsing-remitting multiple sclerosis. Several patient characteristics influence the baseline risk of relapse, which in turn modifies the effect of the drugs. The proposed model makes personalized predictions for health outcomes under several treatment options and encompasses all relevant randomized and non-randomized evidence

**Dollard MF, Loh M, Becher H, Nesar D, Richter S, Zadow A, et al. PSC as an organisational level determinant of working time lost and expenditure following workplace injuries and illnesses. *Safety Science*. 2024; 177:106602.**

<https://doi.org/10.1016/j.ssci.2024.106602> [open access]

**Abstract:** Objectives Finding an association between organisational factors and working time loss following workplace injury and illness (hereafter injury) could rightfully shift the focus in injury management strategies from the individual to the organisation. We investigate whether working time loss and expenditure following compensable injury can be predicted by knowing about organisational characteristics, particularly the Psychosocial Safety Climate (PSC) - the organisation's climate for worker psychological health. Methods Our prospective multisource study linked 'objective' reports of working conditions assessed in an independent Australian Workplace Barometer (AWB) sample (random population interviews of 1067 workers) to future workers compensation claims data held by a government safety regulator, by aggregating both data sets to the organisational (employer) level. We selected compensation data prior to big policy changes to a short tail scheme. We selected claims with working time loss due to injury or illness =1 day yielding 100 organisations and 12,624 claims. Results Results support organisational PSC as a leading indicator of future time loss and expenditure, and its effect was mediated through skill discretion, job satisfaction, and rewards. Decision authority, supervisory support, and bullying were also related to time loss but not as strongly as PSC. In very low PSC organisations, days lost were 160 % higher than for those in high PSC organisations (177 vs 68 days). Likewise, expenditure for the injury or illness (e.g., health expenses, wages) was 104 % higher in very low PSC vs high PSC organisations (AUD \$67 260 vs \$32 939). Conclusion PSC is a modifiable social determinant of injured workers working time loss and expenditure. Practically, it is essential to target PSC for safety improvement — beyond injury prevention PSC is important for return to work and to prevent the shift of the burden of organisational problems to the individual and public health.

**Gartlehner G, Kahwati L, Hilscher R, Thomas I, Kugley S, Crotty K, et al. Data extraction for evidence synthesis using a large language model: a proof-of-concept study. *Research Synthesis Methods*. 2024; 15(4):576-589.**

<https://doi.org/10.1002/jrsm.1710>

**Abstract:** Data extraction is a crucial, yet labor-intensive and error-prone part of evidence synthesis. To date, efforts to harness machine learning for enhancing efficiency of the data extraction process have fallen short of achieving sufficient accuracy and usability. With the release of large language models (LLMs), new possibilities have emerged to increase efficiency and accuracy of data extraction for evidence synthesis. The objective of this proof-of-concept study was to assess the performance of an LLM (Claude 2) in extracting data elements from published studies, compared with human data extraction as employed in systematic reviews. Our analysis utilized a convenience sample of 10 English-language, open-access publications of randomized controlled trials included in a single systematic review. We selected 16 distinct types of data, posing varying degrees of difficulty (160 data elements across 10 studies). We used the browser version of Claude 2 to upload the portable document format of each publication and then prompted the model for each data element. Across 160 data elements, Claude 2 demonstrated an overall accuracy of 96.3% with a high test-retest reliability (replication 1: 96.9%; replication 2: 95.0% accuracy). Overall, Claude 2 made 6 errors on 160 data items. The most common errors (n = 4) were missed data items. Importantly, Claude 2's ease of use was high; it required no technical expertise or labeled training data for effective operation (i.e.,

zero-shot learning). Based on findings of our proof-of-concept study, leveraging LLMs has the potential to substantially enhance the efficiency and accuracy of data extraction for evidence syntheses.

**Gunnarsson AB, Jansson JA, and Eklund M. Is there any job for me? Qualitative exploration of support needs among young Swedish adults with psychosis envisioning productive activities. *Work*. 2024; 78(3):783-795.**

<https://doi.org/10.3233/WOR-230311>

Abstract: BACKGROUND: Unemployment is high not only among people with mental illness, but also among young adults in general. The combination of having a severe mental illness and being young entails a particularly problematic situation for young people with psychosis. This study aimed to understand how this group envision their future possibilities for entering the labour market or engaging in other productive activities. OBJECTIVE: To explore how young adults with psychosis perceive their possibilities, wishes and support needs for gaining employment or engaging in other productive activities. METHODS: A descriptive design with qualitative individual in-depth interviews was used. Eighteen young adults with psychosis, aged 18-30 years, were interviewed. Data was analysed with qualitative content analysis. RESULTS: Four categories based on the experiences of the participants as being vital for having work or other productive activities were generated: "Wishing for a role in the community", "Being my own coach", "Needing personal support" and "Having a supportive workplace". Each of them included sub-categories. CONCLUSION: The young adults with psychosis were a long way from having paid work, but they desired to have a worker role in the community. They are a heterogeneous group, which entails that it is important that professionals and employers have a person-centered and holistic approach, listening to the individuals themselves

**Hallowell MR, Erkal EDO, Sherratt F, MacLean B, and Davis M. Safety performance measurement in environmental, social & governance frameworks. *Professional Safety*. 2024; 69(7):24-32.**

<https://onepetro.org/PS/article-abstract/546892/Safety-Performance-Measurement-in-Environmental?redirectedFrom=fulltext>

**Iwanaga K, Chan F, Bezyak J, Wu JR, Lee D, Rumrill P, et al. Fortune 500 companies and employment of people with disabilities: the intermediary role of disability inclusion policies and practices. *Journal of Vocational Rehabilitation*. 2024; 61(1):17-24.**

<https://doi.org/10.3233/JVR-240026>

**Kent KB, Zhang Y, Roemer EC, Davis MF, Safeer R, Mojica A, et al. The psychosocial, organizational, and environmental stressors experienced by food service workers in a hospital setting during the COVID-19 pandemic. *Journal of Occupational & Environmental Medicine*. 2024; 66(7):556-563.**

<https://doi.org/10.1097/JOM.0000000000003108>

Abstract: To identify stressors faced by hospital food service workers amid the COVID-19 pandemic and effective interventions mitigating these stressors. Methods: In this cross-sectional study, we conducted surveys ( n = 305) and interviews ( n = 9) in the summer and fall of 2022 with employees in hospital settings to determine the psychosocial, organizational, and environmental stressors they faced during the COVID-19 pandemic and interventions that improved health and well-being. Findings: The main stressors reported were fear of infection, increased work demands and schedule unpredictability, and financial insecurity. Employee well-being was bolstered by regular, clear,

bidirectional communication; a sense of community and purpose; benefits like paid sick leave and health insurance coverage; and organizational policies that included masking and vaccine requirements demonstrating commitment to protecting worker health. Conclusion: Organizations can play a critical role in guarding the health, well-being, and resilience of frontline workers

**Kikunaga K, Nakata A, Tondokoro T, and Dollard M. Poor psychosocial safety climate increases teleworker vulnerability to suicidal ideation. *Journal of Occupational & Environmental Medicine*. 2024; 66(7):e306-e311.**

<https://doi.org/10.1097/JOM.0000000000003122>

Abstract: OBJECTIVE: Suicide is the leading cause of death among the working-age population in Japan. Unlike task-level occupational factors, the relation between suicidal ideation and psychosocial safety climate (PSC), a crucial organization-level factor to protect workers' psychological health, is understudied, especially among teleworkers. METHODS: A cross-sectional web-based survey was used to select 1988 participants. A series of multivariable logistic regression analyses with the interaction term of PSC and teleworking arrangements was performed. RESULTS: Poor PSC was associated with a higher risk of having suicidal ideation (adjusted odds ratio = 1.57,  $P = 0.008$ ), and its relation was pronounced among teleworkers (adjusted odds ratio for the interaction term = 1.96,  $P = 0.035$ ), even after adjusting for task-level occupational factors. CONCLUSIONS: This empirical study highlights the heightened risk of suicidal ideation by poor PSC, especially among teleworkers

**Leschke J and Scheele L. Predictability and transparency of working conditions for food delivery platform workers across selected EU countries. *Social Policy & Administration*. 2024; 58(4):638-657.**

<https://doi.org/10.1111/spol.13038> [open access]

Abstract: While prior research has demonstrated the poor and unpredictable working conditions and ambiguous working arrangements characteristic of platform-based food delivery, we lack research on the question of how well these workers are informed about essential aspects of their work, including protection of their rights, working time and schedules, and earnings. Comprehensive and transparent information on working conditions at an early stage is indispensable if workers are to be able to make informed decisions on taking up work and, where relevant, investing in equipment and exercising rights linked to a specific job. Drawing on the multi-dimensional job quality literature, this article focuses on digital labour platforms in the food delivery sector across four countries: Denmark, Germany, the Netherlands and Spain. We exploit firm-level variations, including with regard to the types of work arrangements used and the application—or not—of collective agreements. We draw on information provided to riders during the application process prior to the start of employment, including via websites and FAQs, as well as scrutiny of contracts, service agreements and collective bargaining agreements, where relevant. This information is complemented with interviews with trade union representatives. Our findings point to the relationship between a firm's choice of employment status and form of contract, on one hand, and the predictability and transparency of information provided to workers, on the other. Differences and similarities in such information seem to be more strongly bound to firm-level decisions than to the welfare and industrial relations regimes in which the platform companies operate.

**Markelj N, Kovac M, Leskosek B, and Jurak G. Occupational health disorders among physical education teachers compared to classroom and subject specialist teachers. *Frontiers in Public Health*. 2024; 12:1390424.**

<https://doi.org/10.3389/fpubh.2024.1390424> [open access]

Abstract: During the course of their work, teachers may be subjected to conditions that cause different health problems. This study examines occupational health disorders in a representative sample of 858 teachers (528 female; age  $44.0 \pm 9.67$  years) divided into three groups of teachers with specific occupational requirements: specialist physical education teachers (specialist PETs), classroom teachers, and specialist teachers. The number of health disorders in the last 12 months was recorded using the Chronic Health Disorders Questionnaire. The differences between the different types of teachers, controlled for sex and age, were analyzed using binary logistic regression. The results showed that 89% of teachers experienced colds as the most frequently reported health problem, followed by 58% for lower back problems, 57% for headaches, 51% for hoarseness, and 43% for neck problems. A binary logistic regression showed that specialist PETs were the group with the highest health risk. They were about twice as likely to have musculoskeletal or hearing disorders than the other two groups of teachers. They were also significantly more likely to suffer from hoarseness. Understanding these different health challenges is critical to developing targeted interventions and robust support systems. These interventions should include initiatives aimed at raising awareness of health risk factors, implementing injury interventions and vocal cord hygiene programs, making ergonomic adjustments, and promoting awareness of self-care (both mental and physical). Given that the teaching profession is currently struggling with an aging workforce and a shortage of teachers, addressing these challenges is critical to the continued well-being of the teaching professionals.

**Ojo SO, Chater AM, Hewson DJ, and Bailey DP. Workplace productivity, health and wellbeing: findings from a cluster randomised controlled trial of a workplace intervention to reduce sitting in office workers. *Journal of Occupational & Environmental Medicine*. 2024; 66(6):487-494.**

<https://doi.org/10.1097/JOM.0000000000003091>

Abstract: Objective: The aim of the study was to evaluate the feasibility and potential effects of a workplace intervention to reduce and break up sitting. Methods: Office workers were randomized in clusters to intervention (n = 22) or control (n = 22). The intervention included a height-adjustable workstation, education, computer prompt software, and line manager support. Outcomes included device-measured workplace sitting and ecological momentary assessed workplace productivity. Recruitment, retention, and data completion rates were assessed. Results: Recruitment (N = 44), retention (91%), and workplace sitting measurement rates demonstrated study feasibility. At 8 weeks, workplace sitting was 11% lower (95% CI: -20.71, -1.30) in the intervention group compared with control participants. Intervention participants were also more engaged, motivated, and productive while sitting (P = 0.016). Conclusions: It was feasible to implement and evaluate this office workplace intervention, with potential benefits on workplace sitting and ecological momentary assessed productivity.

**Orhan Pees S, van Oostrom S, Lettinga H, Schaafsma F, and Proper K. Effects of interventions implemented by occupational health professionals to prevent work-related stress complaints: a systematic review. *Occupational & Environmental Medicine*. 2024; 81(6):321-328.**

<https://doi.org/10.1136/oemed-2024-109454> [open access]

**Abstract:** Work-related stress complaints are a growing societal problem. Occupational health professionals often play a key role in its prevention. However, studies providing an overview of preventive interventions and their effectiveness are lacking. Therefore, the aim of this systematic review was to summarise the evidence on the effectiveness of interventions delivered by occupational health professionals to prevent work-related stress complaints. A systematic search in PubMed, Embase, PsycInfo and Medline was performed in May 2023 based on PICO (population, intervention, control and outcomes) elements. Inclusion criteria were: peer-reviewed papers with a randomised controlled trial design, quasi-experimental design and pre-post evaluations with a control group; working populations not on sick leave; interventions delivered by occupational health professionals; and stress outcomes. Data were extracted using a predefined extraction form, risk of bias was assessed using the Cochrane risk of bias tool for randomised trials (RoB-2) and Risk of Bias in non-randomised Studies-of Interventions tool, and a narrative analysis was performed to summarise data. Nine studies were included in this review and encompassed a diverse range of populations, interventions and professionals involved, outcome measures, and effects observed. Five studies found either mixed effects on stress outcomes, short-term positive effects, or positive effects in a subgroup of participants demonstrating high adherence to the intervention. As the results show mixed findings, a high risk of bias, and a limited number of studies was available, more research is needed to the effectiveness of the interventions and the factors underlying this

**Poddar A and Chhajer R. Detection and disclosure of workplace mental health challenges: an exploratory study from India. BMC Public Health. 2024; 24(1):1874.**

<https://doi.org/10.1186/s12889-024-19422-9> [open access]

**Abstract:** Workplace mental health challenges have emerged as a significant concern post-pandemic. Despite this, the pervasive stigma surrounding mental illness leads to the concealment of symptoms and reluctance to seek professional help among employees. This study aims to explore the perception of different stakeholders towards the 'Detection and disclosure' of workplace mental health challenges in the Indian context. Fifteen semi-structured interviews were conducted with human resource professionals, counselors, and employees who had previously experienced mental health challenge(s). Thematic analysis was done to identify recurring themes and sub-themes. Three critical pathways were identified: minimizing the inhibitory factors, including lack of awareness, denial, low self-efficacy, stigma, and underestimating organizational capability; maximizing the encouraging factors, including psychological safety, perceived social support, and communicating success stories; and implementing supportive organizational practices, including generating awareness and literacy, build the organizational capability, strengthen the role of managers, leadership advocacy, policies, and processes. By fostering a culture of support and prioritizing employee well-being, organizations in India can create healthier and more resilient work environments, benefiting both individuals and the larger society

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