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**\*Ervin J, LaMontagne A, Shahidi F, Taouk Y, Smith P, and King T. Precarious, non-standard and informal employment: a glossary. *Journal of Epidemiology & Community Health*. 2025; [epub ahead of print].**

<https://doi.org/10.1136/jech-2024-223428>

Abstract: Precarity in employment is an increasingly concerning global phenomenon. Yet, despite its rising prevalence and the significant impact it has on many people's lives and health, definitions of precarious employment are varied, and different terms are often used interchangeably. Differences between high-income and low-income and middle-income countries, as well as diverse cross-national labour market structures, further complicate the scholarship. The purpose of this glossary is to provide a point of reference in this complex landscape. Our aim is to synthesise and define key terms pertaining to precarious, non-standard and informal employment in order to guide ongoing application and understanding in this space. In addition, this glossary takes a preliminary step in defining some key and emerging constructs integral or related to understanding precarity in employment in the rapidly growing gig economy

**Ali F, Tan AS, and Wang SJ. Can machine learning help accelerate article screening for systematic reviews? Yes, when article separability in embedding space is high. *Research Synthesis Methods*. 2025; 16(1):194-210.**

<https://doi.org/10.1017/rsm.2024.16> [open access]

Abstract: Systematic reviews play important roles but manual efforts can be time-consuming given a growing literature. There is a need to use and evaluate automated strategies to accelerate systematic reviews. Here, we comprehensively tested machine learning (ML) models from classical and deep learning model families. We also assessed the performance of prompt engineering via few-shot

learning of GPT-3.5 and GPT-4 large language models (LLMs). We further attempted to understand when ML models can help automate screening. These ML models were applied to actual datasets of systematic reviews in education. Results showed that the performance of classical and deep ML models varied widely across datasets, ranging from 1.2 to 75.6% of work saved at 95% recall. LLM prompt engineering produced similarly wide performance variation. We searched for various indicators of whether and how ML screening can help. We discovered that the separability of clusters of relevant versus irrelevant articles in high-dimensional embedding space can strongly predict whether ML screening can help (overall  $R = 0.81$ ). This simple and generalizable heuristic applied well across datasets and different ML model families. In conclusion, ML screening performance varies tremendously, but researchers and software developers can consider using our cluster separability heuristic in various ways in an ML-assisted screening pipeline

**Blais RK, Vannini MBN, and Grimm KJ. Higher gender role stress and depressive severity increase suicide risk among male military service members and veterans. *Journal of Affective Disorders*. 2025; 378:220-225.**

<https://doi.org/10.1016/j.jad.2025.02.048>

Abstract: Suicide risk is a top clinical and research priority in male military populations, with interpersonal strain identified as a key risk factor. Masculine gender role stress, which is stress induced by perceptions that one is failing to meet masculine gender ideals of stoicism, physical ability and strength, and power, may be an interpersonal strain risk factor. This stress may be particularly notable in this population given the high prescription of these beliefs within military culture. Stress derived from perceived failure to meet these ideals could increase negative affect or depressive symptoms, thereby increasing risk for suicide death. The current study examined the association of higher gender role stress with suicide risk and depression in 508 male service members and veterans. Participants completed self-report measures of gender role stress, suicide risk, depression, exposure to military sexual trauma (MST), and a demographic inventory. Factor analysis confirmed the latent structure of gender role stress. Suicide risk was regressed on depression severity, gender role stress, and covariates of MST exposure, being discharged from service, and non-minority race. An indirect effect of depression was specified. The regression accounted for 36 % of the variance. Higher gender role stress was associated with higher depression severity, and higher depression severity, in turn, was associated with higher suicide risk. Limitations include the use of cross-sectional data to assess potential mediator effects. Efforts to reduce suicide risk may consider distress tolerance for perceiving norm violations. Results are drawn from cross-sectional data so findings should be considered cautiously.

**Bosma E, Grigore D, Abma FI, Proper KI, and Loef B. Evidence-based interventions to prevent sick leave: a scoping review of reviews. *BMC Public Health*. 2025; 25(1):751.**

<https://doi.org/10.1186/s12889-025-21911-4> [open access]

Abstract: BACKGROUND: Despite the large body of research on interventions aimed at preventing sick leave, the evidence is scattered and a comprehensive overview is lacking. Therefore, this scoping review of reviews aims to provide an overview of evidence-based interventions to prevent sick leave. METHODS: Embase and PsycInfo were systematically searched for reviews published between January 2000-January 2024. A review was included when at least one of the included original intervention studies fulfilled three criteria: (1) target group was active workers not on sick leave, (2) sick leave was

studied as outcome, and (3) the intervention was evaluated using a controlled design. Results were descriptively summarized and grouped based on the cause of sick leave and type of intervention they focused on. Furthermore, the effectiveness in preventing sick leave was reported. RESULTS: Twenty-eight reviews were included. Eight reviews focused on preventing sick leave due to physical health problems, ten on mental health problems, and ten on all-cause sick leave. Overall, the reviews identified a lack of effective interventions to prevent sick leave. However, multi-component interventions consisting of both individual and environmental components aimed at workers' lifestyle and aimed at mental health were promising to prevent sick leave in the general working population (e.g. workplace mental health promotion intervention). Furthermore, certain specific interventions targeting workers at risk were effective. Examples are cognitive behavioral therapy programs for workers with anxiety and depression, and consultation with occupational medical staff for workers at high risk for sick leave. Lastly, exercise programs were most effective in preventing sick leave due to physical health problems (e.g. exercise for low back pain prevention). CONCLUSIONS: This scoping review identified reviews on sick leave prevention across a broad scope of health problems, types of interventions, and target groups. Although a few effective interventions for preventing sick leave were identified, the included reviews indicate a limited availability of effective interventions. Therefore, more randomized controlled trials with long-term follow-up that include sick leave as outcome are needed. To develop more effective interventions, further research is needed on better integrating the workplace environment, and on understanding barriers and facilitators to successful implementation

**Van Deynse H, Cools W, De Deken VJ, Depreitere B, Hubloue I, Tisseghem E, et al. One-year employment outcome prediction after traumatic brain injury: a CENTER-TBI study. *Disability and Health Journal*. 2025; 18(2):101716.**

<https://doi.org/10.1016/j.dhjo.2024.101716> [open access]

Abstract: Background: Traumatic brain injury (TBI) can come with long term consequences for functional outcome that can complicate return to work. Objectives: This study aims to make accurate patient-specific predictions on one-year return to work after TBI using machine learning algorithms. Within this process, specific research questions were defined: 1 How can we make accurate predictions on employment outcome, and does this require follow-up data beyond hospitalization? 2 Which predictors are required to make accurate predictions? 3 Are predictions accurate enough for use in clinical practice? Methods: This study used the core CENTER-TBI observational cohort dataset, collected across 18 European countries between 2014 and 2017. Hospitalized patients with sufficient follow-up data were selected for the current analysis (N = 586). Data regarding hospital stay and follow-up until three months post-injury were used to predict return to work after one year. Three distinct algorithms were used to predict employment outcomes: elastic net logistic regression, random forest and gradient boosting. Finally, a reduced model and corresponding ROC-curve was created. Results: Full models without follow-up achieved an area under the curve (AUC) of about 81 %, which increased up to 88 % with follow-up data. A reduced model with five predictors achieved similar results with an AUC of 90 %. Conclusion: The addition of three-month follow-up data causes a notable increase in model performance. The reduced model - containing Glasgow Outcome Scale Extended, pre-injury job class, pre-injury employment status, length of stay and age - matched the predictive performance of the full models. Accurate predictions on post-TBI vocational outcomes

contribute to realistic prognosis and goal setting, targeting the right interventions to the right patients.

**Froyland K, Bull H, Skarpaas LS, Berget G, Spjelkavik O, and Lystad JU. Work inclusion of marginalised groups in a troubled city district: how can active labour market policies improve? *Social Policy & Administration*. 2025; 59(3):588-601.**

<https://doi.org/10.1111/spol.13058> [open access]

Abstract: Abstract Active labour market policies (ALMP) have faced challenges in integrating marginalised groups into the workforce. This study explores perceptions among managers and frontline workers on enhancing work inclusion for neurodiverse citizens, marginalised youth, and individuals suffering from mental health or substance use disorders in a troubled city district. An examination of dialogue conferences and group interviews uncovers problems with current practises, attitudes, and service organisation. The proposed local solutions primarily include improved coordination of support and services, as well as enhanced competence within these services. Our results indicate that co-creation at the system, organisation, and individual levels, coupled with expanded knowledge translation, can mobilise local actors to create new or adopt existing knowledge-based strategies. Therefore, local co-creation presents a potential for developing local inclusion strategies

**Hong QN, Li J, Kersale M, Dieterlen E, Mares A, Ahmadian Sangkar Z, et al. Work disability and musculoskeletal disorders among teleworkers: a scoping review. *Journal of Occupational Rehabilitation*. 2025; 35(1):17-29.**

<https://doi.org/10.1007/s10926-024-10184-0>

Abstract: Purpose: This project aimed to examine the existing evidence on work disability or musculoskeletal disorders (MSDs) among teleworkers. Method: A scoping review was conducted in eight bibliographic databases (MEDLINE, CINAHL, Embase, PsycINFO, ABI/Inform Global, EBM Reviews, Web of Science, Dissertations & Theses Global) from inception to June 2022. Results: Out of 9192 records identified, a total of 79 selected articles representing 77 studies were retained. Most studies were published after 2019, aligning with the COVID-19 pandemic's telework surge. Among the included papers, 51 addressed MSDs among teleworkers, 17 were on work disability, and 11 addressed both concepts. The studies were predominantly cross-sectional. Some trends are emerging, although study results are contradictory. Several papers reported increased musculoskeletal discomfort among teleworkers. Factors associated with MSDs among teleworkers include poor workstation setup, extended workdays, sedentary lifestyle, excessive devices use, and psychological factors. Regarding work disability, studies found that telework is associated with reduced absenteeism but increased presenteeism, with employees more likely to work while unwell from home than when on-site. Mixed results were found regarding teleworkers' work ability and functioning. Conclusion: This paper provides an overview of the literature on work disability and MSDs among teleworkers. It identifies literature gaps, underlining the need for ergonomic improvements, long-term impact studies, a better conceptualization of presenteeism in the context of telework, and tailored interventions to enhance the telework experience.

**Lewis C, Jackson JA, Stjernbrandt A, Andersson G, Mukka S, Wahlstrom J, et al. Occupational risk factors for thumb carpometacarpal joint osteoarthritis: a register-based study of construction workers. *Occupational and Environmental Medicine*. 2025; 82(1):14-20.**

<https://doi.org/10.1136/oemed-2024-109949> [open access]

**Abstract:** Objectives: The study investigated the association between occupational biomechanical risk factors and the occurrence of thumb carpometacarpal joint osteoarthritis (CMC1 OA) in construction workers. Methods: Male construction workers (n=237 525), participating in a Swedish occupational surveillance programme between 1971 and 1993, were followed between 1997 and 2019. CMC1 OA diagnoses were identified through linkage with national medical registries. Job title, smoking status, height, weight and age were collected from the surveillance programme. A job exposure matrix (JEM) was developed with exposure estimates on biomechanical risk factors for each occupational group. Relative risk (RR) of CMC1 OA diagnosis was calculated using a Poisson regression model. Results: There was an increased risk of CMC1 OA for all biomechanical risk factors (RR range 1.3-1.5). Exposure-response patterns were seen for repetitive wrist flexion and extension (low: RR 1.30 (95% CI 1.07 to 1.59), moderate: 1.32 (95% CI 1.07 to 1.62), high: 1.45 (95% CI 1.19 to 1.75)), wrist extension (low: 1.31 (95% CI 1.09 to 1.59), moderate: 1.41 (95% CI 1.17 to 1.70) and heavy lifting (low: 1.13 (95% CI 0.92 to 1.38), moderate: 1.45 (95% CI 1.18 to 1.77), high: 1.50 (95% CI 1.24 to 1.82)). Electricians (1.29 (95% CI 1.03 to 1.89)), concrete workers (1.31 (95% CI 1.02 to 1.67)), plumbers (1.37 (95% CI 1.07 to 1.76)), sheet-metal workers (1.58 (95% CI 1.18 to 2.10)), wood workers (1.66 (95% CI 1.36 to 2.03)), repairers (1.75 (95% CI 1.06 to 2.90)) and glass workers (2.21 (95% CI 1.42 to 3.44)) had an increased risk of CMC1 OA compared with the reference group. Conclusion: Wrist movements and hand loading were associated with CMC1 OA.

**Meyer L, Goedhals-Gerber LL, and Bod A. A systematic review of incentive schemes and their implications for truck driver safety performance. *Journal of Safety Research*. 2025; 92:166-180.**

<https://doi.org/10.1016/j.jsr.2024.11.023> [open access]

**Abstract:** INTRODUCTION: This systematic review investigates the effects of monetary and non-monetary incentive schemes on the safety performance of truck drivers, a critical concern within the road freight industry. METHOD: The review analyzes 18 studies and dissects the impact of compensation levels, compensation methods, and non-monetary benefits on drivers' safety behaviors. RESULTS: The findings show that, in general, higher levels of compensation, both through selection and incentive effects, enhance safety performance by attracting more skilled drivers and incentivizing adherence to safety protocols. However, the structure of these compensations, particularly piece-rate wages, and payment for non-driving hours, reveals a double-edged sword; while incentivizing productivity, they inadvertently promote unsafe driving behaviors such as excessive speeding and insufficient rest due to economic pressures. Conversely, non-monetary incentives, though under-researched, show potential for improving safety outcomes by enhancing job satisfaction and work environment quality. PRACTICAL APPLICATIONS: This review highlights the need for future research on safety incentives to evaluate the full extent of the intersection between incentives, safety culture, and working conditions. It advocates for holistic compensation strategies that foster a safety culture in the trucking industry, marking a new direction for improving driver behavior

**Mishra SR, Tan AC, Waller K, Lindley RI, and Webster AC. Conceptualizing, operationalizing, and utilizing equity, diversity, and inclusion in clinical trials: a scoping review. *Journal of Clinical Epidemiology*. 2025; 179:111649.**

<https://doi.org/10.1016/j.jclinepi.2024.111649>

Abstract: OBJECTIVES: Equity, diversity, and inclusion (EDI) are social constructs which when used in clinical trials, or clinical research broadly help generate the highest quality evidence for interventions in the populations most likely to benefit. However, the incorporation of these constructs is unclear and inconsistent. This scoping review sought to understand how EDI is applied in clinical trials with broader application across clinical research. METHODS: We reviewed literature from PubMed and Google Scholar, selecting studies 1) published from 2000 to 2023, 2) literature which described concepts, tools, metrics, or frameworks, and 3) provided information on conceptualization, operationalization (measuring) or utilization (analyzing). Additionally, internet searches were conducted to identify websites of research partners such as government institutions, funders, regulators and publishers across the research lifecycle. Websites retrieved were included for our review of EDI consideration (either concepts or statements) outside but impacting upon the published literature. RESULTS: We reviewed 2385 titles and abstracts and included 75 (3%) in analyses. From gray literature searches of 269 identified key research partners, additional 49 records were included. Studies conceptualized EDI as interconnected rather than distinct constructs. These concepts were often reinforcing, such as efforts to enhance diversity which also promote equity and foster inclusion. Regarding operationalization, 12 frameworks, 20 tools/metrics were identified for EDI assessment across the research lifecycle. These metrics were primarily used for reporting EDI data, and utilization across research lifecycle remains limited. Among research partners, a third of publishers (6 of 20) had any EDI considerations; followed by 2 of 19 trial registries, 12 of 44 research funders, 7 of 60 journals, and none of ethics committee and data repositories reported statements on EDI. CONCLUSION: This review highlights that a range of EDI relevant tools, frameworks and metrics, each with their unique strengths and limitations. We found a wider adoption of EDI considerations by research partners is still lacking. Future research could explore the impact of different EDI criteria on trial outcomes and the generalizability of trial results

**Mullins-Jaime C, Le AB, and Smith TD. The impact of safety leadership on safety behaviors of aircraft rescue and firefighting personnel during the COVID-19 pandemic. *International Journal of Occupational Safety and Ergonomics*. 2025; 31(1):157-166.**

<https://doi.org/10.1080/10803548.2024.2414577>

**Premji S, Neis B, MacEachen E, and Shor G. The struggle for sustainable return to work among injured workers in situations of vulnerability: policy, practice and the Canadian context. *New Solutions*. 2025; 35(1):6-8.**

<https://doi.org/10.1177/10482911251317582>

Abstract: Editor's Note: About a year ago the organizers of the conference entitled Workers' Health and Return-to-Work in a Changing World of Work approached NEW SOLUTIONS about doing a special issue to publish research presented at the conference. We were happy to agree because of the alignment of our goals and values, specifically the use of community-engaged research to mobilize knowledge in the service of justice for workers. Now we are very happy to present this issue which is the result of our collaboration. We believe that NEW SOLUTIONS readers, especially those engaged

with precarious and other vulnerable workers or with workers' compensation and/or return to work will find a lot of value in this issue.-Darius Sivin

**Priolo G, Vignoli M, and Nielsen K. Risk perception and safety behaviors in high-risk workers: a systematic literature review. *Safety Science*. 2025; 186:106811.**

<https://doi.org/10.1016/j.ssci.2025.106811> [open access]

Abstract: The pervasive issue of occupational safety poses a compelling challenge within the global workforce causing a staggering amount of yearly injuries and fatalities worldwide. The relationship between risk perception and behaviors is of particular interest across various fields, but a comprehensive understanding of this association in the occupational sector is lacking. This systematic review examines the literature on the relationship between risk perception and safety behaviors among front-line workers in high-risk occupations for physical injuries. Using the PRISMA method, 89 peer-reviewed papers from the last two decades were synthesized. The findings revealed a common oversight in recognizing the multidimensional nature of risk perception as only seven out of 89 papers considered both its deliberative (i.e., perceived probability and severity of incurring a hazard's negative consequences) and affective (i.e., emotional reactions associated with the hazard) dimensions. Despite this, a majority of studies found a significant positive association between risk perception and safety behaviors, although 40% reported mixed or null effects. Individual factors (e.g., attitudes) and organizational factors (e.g., safety climate) were explored as potential mediators with mixed outcomes, while group and leadership factors were largely neglected. This review provides guidelines for more comprehensive future assessments of risk perception in the workplace. Enhancing the understanding of both deliberative and affective dimensions of risk perception is essential for developing effective training programs to improve safety behaviors.

**Shoman Y, Ranjbar S, Strippoli MF, von Kanel R, Preisig M, and Guseva Canu I. Longitudinal association of exposure to work-related stress with major depressive disorder and the role of occupational burnout in this association in the general population. *Social Psychiatry and Psychiatric Epidemiology*. 2025; 60(3):593-606.**

<https://doi.org/10.1007/s00127-024-02735-w> [open access]

Abstract: Purpose: To prospectively assess (1) the associations of Effort-Reward Imbalance (ERI), its individual components, and over-commitment with (a) the onset of a Major Depressive Episode (MDE) during a 3.6-year follow-up in a population-based cohort in participants with no current Major Depressive Disorder (MDD) in the beginning of the follow-up (n = 959), (b) incidence of MDD in the subsample of participants exempt from lifetime MDD (n = 490), and (c) the onset of a new MDE (i.e. recurrence) in the subsample of participants with remitted but no current MDD (n = 485), and (2) potential effect modification of burnout on these associations. Methods: DSM-IV Axis-I disorders were elicited using the semi-structured Diagnostic Instrument for Genetic Studies at each investigation. The ERI Questionnaire was used to measure ERI and overcommitment. Burnout was measured with the Maslach Burnout Inventory General Survey. Serially adjusted logistic regression models were used. The effect of burnout dimensions on these associations was assessed by testing interactions between the ERI and burnout dimensions. Results: (1) ERI was prospectively associated with the onset of MDE, even after adjustment for burnout [OR (95CI) = 1.22 (1.003-1.49)]. (2) The association between ERI and MDD incidence became non-significant after adjusting for burnout. (3) ERI was not associated with recurrence of pre-existing MDD. (4) burnout did not interact with ERI. Conclusions: Our results

support a longitudinal association between ERI and the risk of onset of MDE in the community. Burnout did not modify this effect, but it may partially account for the association between ERI and MDD incidence.

**Sun Y, Bochmann F, Eckert W, Ernst B, Freitag C, Kaulbars U, et al. Quantitative assessment of work-related hand-arm vibration exposure among workers in the construction, underground coal mining, wood working, and metal working industry: the German hand-arm vibration study. *Safety and Health at Work*. 2025; 16(1):97-104.**

<https://doi.org/10.1016/j.shaw.2025.01.001> [open access]

**Abstract:** Background: Standardized exposure assessments were conducted to quantify the historical occupational exposure to hand-arm vibration of workers in the German construction, underground coal mining, woodworking, and metalworking industries. Methods: A two-step approach was used to assess historical vibration exposure. In the first step, individual work histories were reconstructed by standardized personal interviews. The interview focused on the identification of relevant power tools used throughout the working life. In the second step, an equipment-exposure-matrix was constructed by industrial hygiene measurements. By linking the power tools in the work history to the equipment-exposure-matrix, individual daily, and long-term vibration exposures can be quantified. Results and conclusions: A total of 423 power tools were identified for 5,115 exposure segments over a period of 50 years. 97.2% of the vibration values were based on industrial hygiene measurements. The total vibration value (ahv) of the power tools used varied between 0.8 m/s<sup>2</sup> and 65.2 m/s<sup>2</sup> with a median value of 14.2 m/s<sup>2</sup>. The median value of cumulative vibration exposure is Dhv = 121,971 (range: 23-3,374,640) m<sup>2</sup>/s<sup>4</sup>-day, corresponding to a daily vibration exposure of ahv(8) = 7 m/s<sup>2</sup> for 2489 working days (11.3 years). This study provides a detailed description of hand-arm vibration exposure among workers in the related industries studied. Our analyses indicate that the quantification of daily vibration exposure is often uncertain and should be interpreted with caution. In contrast, cumulative vibration exposure is a more reliable exposure parameter for describing general working conditions and for guiding the prevention and compensation of vibration-related health problems.

**Xu H, Zhang Z, Yang X, Yang Q, and Chen T. Effects of extended working lives on depressive symptoms, physical, and cognitive health in middle and later life: evidence from China. *Social Science & Medicine*. 2025; 369:117833.**

<https://doi.org/10.1016/j.socscimed.2025.117833>

**Abstract:** INTRODUCTION: Many countries are extending working lives to counteract the shrinking labor force caused by population aging. However, the health implications of this approach for middle-aged and older adults remain unclear, particularly in low- and middle-income countries. METHODS: Data were drawn from the 2011-2020 China Health and Retirement Longitudinal Study to analyze the effect of labor force participation on multidimensional health, with a focus on activities of daily living disability, depressive symptoms, and cognitive impairment. A longitudinal g-formula was applied to address the endogeneity associated with long-term employment and simulate the life course of a synthetic cohort aged 45-80 years. The impact of extending working lives to age 63 for men and age 58 for women on health outcomes was estimated. RESULTS: Labor force participation was negatively associated with the onset of activities of daily living disability but positively associated with the onset of depressive symptoms and cognitive impairment among middle-aged and older adults. Extending working life slowed the progression of activities of daily living disability but increased the risk of

depressive symptoms and cognitive impairment, especially in women. These effects persisted beyond working years and into postretirement. Higher education levels mitigated the negative impact of extended working lives on cognitive function. **CONCLUSIONS:** While extending working lives may benefit physical functioning, it poses risks to depressive symptoms and cognitive health, particularly for women. National policies promoting longer working lives should incorporate targeted preventive measures to protect the psychological and cognitive health of middle-aged and older adults

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