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

***Jetha A, Liao Q, Smith P, Vu V, Biswas A, Smith B, Vahid Shahidi F. Large language model exposure and precarious occupations: unpacking relationships in the Canadian labor force. *Scandinavian Journal of Work, Environment & Health*. 2026; [epub ahead of print].**

<https://doi.org/10.5271/sjweh.4312> [open access]

Abstract: OBJECTIVE: The adoption of digital technologies has historically impacted the most precarious occupations and contributed to widening labor market inequities. Large language models (LLM) may reshape this relationship. This study examines the association between occupational exposure to LLM and occupational precarity. METHODS: Using Canada's Labour Force Survey, occupational exposure to LLM and four dimensions of precarity (contractual instability, earnings inadequacy, schedule unpredictability, working-time mismatch) were examined. A multidimensional index was developed to summarize an occupation's overall exposure to precarity. Four multivariate linear regression models with cluster-robust standard errors estimated the associations between LLM exposure and each dimension of precarity. A fifth multivariate model examined the relationship between LLM exposure and the multidimensional precarity index. Utilizing model coefficients, mean estimates of occupational LLM exposure were produced. RESULTS: Using the multidimensional precarity index, our analysis showed that occupations characterized by low exposure to precarity had a significantly higher mean LLM exposure [mean 0.386, 95% confidence interval (CI) 0.356-0.417] compared to occupations with medium (mean 0.258, 95% CI 0.221-0.295), high (mean 0.260, 95% CI 0.194-0.328) or very high precarity (mean 0.205, 95% CI 0.136-0.275). Apart from earning adequacy, LLM exposure was also lower among occupations using each separate dimension of precarity. CONCLUSION: Occupations most likely to be exposed to LLM are those where precariousness is

lowest. These occupations have previously been sheltered from technological change. There is a need of examine the impacts of LLM on workers in job where the technology is prominent

Auge E and Sirven N. Improving healthcare utilization in retired self-employed workers: evidence from an experiment in France. *Health Economics*. 2026; 35(7):1073-1087.

<https://doi.org/10.1002/hec.70101>

Abstract: This study examines the impact of a program designed to address the non-take-up of social benefits on healthcare utilization among targeted at-risk formerly self-employed workers in France. We test two main hypotheses: first, that sending a self-assessment questionnaire to the treated group can increase healthcare use; second, that personalized assistance from a social worker can enhance this effect. Utilizing a quasi-experimental framework (2014-2016) and synthetic difference-in-differences models to address selective entry into the various treatments, our results reveal that proactive information outreach alone increased healthcare utilization by 0.6%, while the combined approach with personalized assistance amplified this effect to 2%. In all configurations, access to services and healthcare consumption improved, while care pathways shifted, potentially toward preventive and early-stage treatments. Our findings support the use of multiple uptake strategies, such as targeting, proactive outreach, and tailored integrated benefit packages, in overcoming barriers to healthcare

Baptista S, Cumpston M, Hill K, Millard T, Synnot A, Tunnicliffe DJ, et al. Methods for living guidelines: learnings from developing and disseminating implementable living guidelines in the Australian context. *Journal of Clinical Epidemiology*. 2026; 194:112231.

<https://doi.org/10.1016/j.jclinepi.2026.112231> [open access]

Abstract: BACKGROUND: Living clinical guidelines provide decision-makers with up-to-date, reliable guidance to inform clinical and policy decisions. As the production of living guidelines increases internationally, it is important that they are effectively disseminated and implemented. However, there is limited guidance about how to achieve this goal. This commentary synthesizes practical experiences from guideline developers within the Australian Living Evidence Collaboration, structured around five phases of a typical living guideline lifecycle: scoping, development, dissemination, implementation, and evaluation. DISCUSSION: Living guideline production, dissemination, and implementation require strategies to ensure ongoing relevance, transparency, and sustained stakeholder engagement. Suggestions for effective scoping and development of living guidelines and disseminating and implementing them include the following: (1) developing continually relevant guidelines, (2) transparency and sustained engagement to aid guideline implementability, (3) setting expectations about communication of updates and continually refining dissemination approaches, (4) using data to improve implementation strategies, and (5) using multifaceted evaluation approaches to refine and improve future iterations. Challenges specific to living guidelines include sustaining stakeholder engagement over time, maintaining transparency in dissemination without information overload, designing implementation strategies that are responsive to evolving guidelines and changes to practice and policy, and developing effective evaluation strategies to demonstrate the evolving impact of clinical guidelines. Strategies for effective development, dissemination, and implementation of living guidelines build on principles that apply to conventional guidelines. Continued efforts to sustain stakeholder engagement, ensure transparency of updates, and refine implementation strategies are likely to optimize access to and adoption of living guidelines

Bouden S, Affes W, Rouached L, Dhia SB, Saidane O, Mahmoud I, et al. Impact of an ergonomic training program on musculoskeletal disorders among paramedical staff: a comparative study. Archives of Environmental & Occupational Health. 2026; 81(5-6):105-112.

<https://doi.org/10.1080/19338244.2026.2654390>

Abstract: Musculoskeletal disorders (MSDs) are a major occupational health concern among paramedical staff, leading to pain, reduced performance, and absenteeism. This prospective interventional comparative study included all 80 paramedical staff members at the center who met the inclusion criteria, making the study population exhaustive. Participants were assigned to an intervention group (n = 40) receiving a three-session ergonomic training program or a control group (n = 40) receiving usual practice. Primary outcomes were MSD prevalence and absenteeism; the secondary outcome was quality of life (SF-36). Assessments were conducted at baseline (T0) and 6 months (T6). After 6 months, the intervention group reported a significant reduction in MSD prevalence in the cervical spine (from 55% to 30%, p = 0.01), shoulders (55% to 35%, p = 0.03), hands (40% to 20%, p = 0.008), and fingers (35% to 20%, p = 0.03) compared to baseline and to the control group. Absenteeism days decreased significantly in the intervention group (from 14 ± 7 to 8 ± 4 days, p = 0.03). No significant change was observed in overall SF-36 scores. The ergonomic training program was associated with reductions in MSD prevalence and absenteeism among paramedical staff.

Cho E, Chen TY, and Shen W. Bouncing back, holding steady, or wiser for wear? Uncovering and predicting trajectories of work-eldercare conflict and enrichment during the COVID-19 pandemic. Journal of Occupational Health Psychology. 2026; 31(3):224-243.

<https://doi.org/10.1037/ocp0000431>

Abstract: Accumulating longitudinal evidence suggests considerable stability in employees' work-family experiences over extended periods. However, this apparent stability may mask meaningful changes that earlier research could not detect, as prior studies often lacked designs suited to capturing shocks that alter the work-family interface and relied on long measurement intervals that can miss the adaptation process. To elucidate changes in employees' work-family interface and the resources that enable adaptation, we examine the work-eldercare interface among working informal caregivers of older adults in Singapore (N = 193) during the COVID-19 pandemic using a three-wave, "shortitudinal" design (prepandemic, during lockdown, postlockdown). Growth curve modeling revealed differential trajectories across work-eldercare constructs; work-to-eldercare conflict continued to worsen over time, eldercare-to-work conflict exhibited a partial rebound pattern, work-to-eldercare enrichment was maintained over time, and eldercare-to-work enrichment showed an improvement pattern. We also uncover important variations in how (i.e., as a stable reservoir or a dynamic supply) and for whom support at work (family-supportive supervisor behaviors [FSSBs]) and family (work-supportive family [WSF]) facilitated adaptation. Beyond between-person FSSB, within-person increases in FSSB predicted favorable trajectories of all four work-eldercare experiences. Within-person WSF did not influence trajectories beyond between-person WSF. Trait resilience enhanced the benefits of between-person FSSB and WSF on initial eldercare-to-work enrichment and work-to-eldercare enrichment, respectively, whereas within-person FSSB and WSF related to the eldercare-to-work conflict trajectory only among those lower on trait resilience. (PsycInfo Database Record (c) 2026 APA, all rights reserved)

Han S, Park H, Kim JK, and Emich KJ. What now? Defining capricious supervision and examining its impact on employee strain. *Human Relations*. 2026; 79(7):880-911.

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Ref ID: 55563

<https://doi.org/10.1177/00187267251379398>

Jaspers SO, Rosenfeldt Jensen AS, Dybdal Andersen E, Munk Andersen M, Craven H, and Madsen IEH. Process evaluation of a multilevel intervention targeting emotional demands in a hospital. *International Journal of Workplace Health Management*. 2026; 19(3):341-358.

<https://doi.org/10.1108/IJWHM-04-2025-0086> [open access]

Abstract: Multilevel interventions may prevent the negative consequences of emotional demands. However, a known barrier to implementing multilevel interventions is high workload, an increasing problem in the healthcare sector due to staff shortages and an aging population. This study investigates key factors for implementing a multilevel intervention targeting emotional demands at an entire hospital with staff shortages. We conducted a process evaluation drawing on concepts from realist evaluation. We conducted individual semi-structured interviews before and after the intervention (39 in total) with managers, employees, the board of management, and intervention consultants. We also observed intervention activities, collected attendance registrations for all planned intervention activities, and analyzed data using thematic analysis. In the context of staff instability, overcrowding and staff groups with low power distances we found that top-management support and a strong connection to patient safety could support a high degree of implementation. We found that the intervention activities led to participants experiencing improvements in social support, knowledge, action possibilities and prevention practices. Further quantitative analyses are needed to establish the effects of the intervention on more distal outcomes. The study identified key factors for successful implementation of a multilevel intervention in hospitals allowing for implementation in a resource-scarce environment. This knowledge is key for future efforts to prevent and manage emotional demands in healthcare

Khalil H, Johns-Hayden A, and Kynoch K. Guidance to including gray literature in systematic reviews: recommendations from an epidemiological study. *Journal of Clinical Epidemiology*. 2026; 194:112222.

<https://doi.org/10.1016/j.jclinepi.2026.112222> [open access]

Abstract: BACKGROUND AND OBJECTIVES: Gray literature studies are materials produced outside traditional academic or commercial publishing such as theses, conference proceedings, technical reports, and government documents. Gray literature is often underrepresented in systematic reviews due to limited accessibility and lack of standardized search methodologies. Despite its potential to reduce publication bias and broaden evidence bases, there is no universally accepted guidance for identifying or appraising gray literature. This study aimed to inform methodological guidance for incorporating gray literature into evidence synthesis. METHODS: We conducted a descriptive cross-sectional analysis of 100 systematic reviews published between January 2022 and June 2025 in high-impact journals across public health, education, health services, and social care. Reviews were identified via PubMed. Two independent reviewers used a piloted data extraction form to collect information on gray literature identification, extraction, appraisal, and synthesis. Descriptive statistics were used for categorical variables, and thematic content analysis was employed to explore reporting

practices. Findings informed the development of a structured, step-by-step guidance and checklist for gray literature identification, appraisal, extraction, and reporting. RESULTS: Systematic reviews primarily originated from medical and health sciences disciplines. The most common gray literature search strategies were hand searching (58%), use of organizational or government websites (42%), and Google Scholar (39%). While 89% of reviews applied formal inclusion/exclusion criteria to gray literature, only 19% extracted gray literature separately from peer-reviewed sources. The influence of gray literature on review conclusions varied substantially. CONCLUSION: Gray literature searching in systematic reviews remains highly variable and often lacks transparency. There is an urgent need for standardized guidance, greater integration of automation tools, and improved researcher training in accessing less visible sources. Without these improvements, gray literature searching will remain inconsistent and resource-intensive, with uncertain impact on review quality

Lee EJ, Park J, Meyer J, and Bozek D. Exploring gender disparities in vocational rehabilitation: a focus on women with traumatic brain injury. Archives of Physical Medicine & Rehabilitation. 2026; 107(6):1249-1257.

<https://doi.org/10.1016/j.apmr.2026.02.010>

Abstract: OBJECTIVE: To examine the relationships between demographic characteristics, service patterns, and competitive integrated employment (CIE) outcomes among women with traumatic brain injury (TBI) within public vocational rehabilitation (VR) and to explore whether these relationships differ by sex, comparing outcomes between women and men with TBI. SETTING: National Rehabilitation Services Administration data for fiscal year 2022. PARTICIPANTS: A total of 1221 women and 2268 men who have TBI as a cause of primary disability and who received VR services after their individualized plan for employment (IPE). DESIGN: Observational cohort study. MAIN OUTCOME MEASURES: Age, race, ethnicity, education, primary disability, public support at application, employment status at IPE, long-term unemployment status, length of services, 13 VR services, and CIE. RESULTS: For both women and men with TBI, receipt of Supplemental Security Income or Social Security Disability Insurance at the time of IPE was negatively associated with CIE, and previous work experiences were positively associated with achieving CIE. Regarding VR services, job placement assistance, short-term and long-term job support, and maintenance services were significantly related to obtaining CIE outcomes for both groups. However, receiving VR counseling and guidance was significantly related to CIE for women with TBI only, whereas receiving rehabilitation technology services was significantly related to CIE for men with TBI only. CONCLUSIONS: The findings of this study are expected to have valuable implications for service providers and policymakers, helping them understand the unique needs of women with TBI and develop individualized support and services for successful employment

Liu Y, Zhang W, Wang D, Guo R, Li W, He M, et al. The relationship between occupational stress and anxiety/depressive symptoms among employees: the moderating role of occupational health literacy. International Journal of Stress Management. 2026; 33(2):125-136.

<https://doi.org/10.1037/str0000388>

Abstract: This study aimed to examine the relationship between occupational stress and anxiety/depressive symptoms among employees and evaluate the potential moderating role of occupational health literacy in this relationship. The results suggested that occupational stress increased the risk of anxiety/depressive symptoms. The association of occupational stress with

anxiety/depressive symptoms was mitigated with higher levels of occupational health literacy. This study is the first to demonstrate the protective moderating effect of occupational health literacy on the association between occupational stress and anxiety/depressive symptoms among employees, providing valuable reference for future research on the prevention of anxiety/depressive symptoms related to occupational stress. (PsycInfo Database Record (c) 2026 APA, all rights reserved)

McFalls M, Ryan A, Virnig BA, Kim H, Alexander BH, and Ramirez MR. Effects of job lock and work arrangements on the incidence of occupational injuries to older workers in the health and retirement study, 2010-2022. American Journal of Preventive Medicine. 2026; 70(6):108290.

<https://doi.org/10.1016/j.amepre.2026.108290> [open access]

Abstract: Introduction: Job lock-when older workers cannot retire owing to financial or health insurance needs-is potentially an occupational safety issue. This study explored the longitudinal effect of job lock on work-related injuries to older workers, hypothesizing that job lock increases their injury rates. It then examined how this relationship varies across work arrangements. Methods: Analysis using 2010-2022 Health and Retirement Study data for workers aged 55-64 years and ≥65 years compared work exposures in each wave with injuries reported in the next wave. Repeated-measures negative binomial regression estimated longitudinal effects of job lock (financial, health insurance, or both) on work-related injuries, exploring effect modification by work arrangements (full time, part time, partly retired, self-employed). Analysis was conducted in 2025. Results: Workers aged 55-64 years overall had 51.8 work-related injuries per 1,000 person-years, compared with 44.3 work-related injuries per 1,000 person-years for workers aged ≥65 years. Among those aged 55-64 years, these rates were 48% higher with job lock for financial reasons (incidence rate ratio=1.48 [95% CI=1.04, 2.13]) and similarly for health insurance reasons. Potentially stronger effects were observed for workers in full time (incidence rate ratio=1.57 [95% CI=1.15, 2.16]) and possibly part-time roles (incidence rate ratio=1.72 [95% CI=0.86, 3.46]). After age 65 years, these data suggest that workers had a 29% higher injury rate from financial job lock (incidence rate ratio=1.29 [95% CI=0.66, 2.51]). Conclusions: Job lock was associated with higher work-related injury rates, particularly for those in full- or part-time roles before age 65 years. For self-employed, partly retired, or workers aged >65 years, job lock presented less clear injury risk, possibly from differences in job tasks or selection into safer roles. Further research should address mechanisms of job lock to elevate injury risks. Improving access to retirement resources earlier in workers' careers may help to address work-related injuries and economic challenges of aging.

Moreno-Moreno AJ, Garcia-Iglesias JJ, Castano-Seiquer A, Ribas-Perez D, Fagundo-Rivera J, Ruger-Navarrete A, et al. Applications of artificial intelligence in the detection and prevention of assaults against healthcare staff: a systematic review. Safety Science. 2026; 201:107243.

<https://doi.org/10.1016/j.ssci.2026.107243> [open access]

Abstract: Background The rising incidence of physical, verbal, and psychological assaults on healthcare workers has become a critical occupational and public health concern. Such incidents negatively impact staff well-being, contribute to burnout, and compromise the overall quality of patient care. Objectives To explore how artificial intelligence (AI) techniques, including machine learning, deep learning, and natural language processing, can be applied in healthcare settings to detect, prevent, or mitigate workplace assaults against healthcare staff. Additionally, it sought to identify the most effective technical and ethical strategies for implementing AI-based interventions. Methods A

systematic review was performed following the PRISMA 2020 guidelines. Searches were conducted between July and August 2025 in electronic databases (PubMed, Scopus, Web of Science, CINAHL, IEEE Xplorer, and Google Scholar) and AI-assisted bibliographic tools (Perplexity, SciSpace, and Elicit). Studies were screened and assessed for methodological quality using the Joanna Briggs Institute critical appraisal tools. Results Seventeen studies met the inclusion criteria. Evidence indicates that AI can play a substantial role in enhancing staff safety. Approaches include smart sensors for real-time detection of aggressive behaviors, deep learning models analyzing clinical notes to predict violent incidents, advanced natural language processing systems (BERT, GPT, RAG-ECE) for identifying threatening language, and interpretable machine learning algorithms (LightGBM-SHAP-ALE) for pinpointing key risk factors. Conclusions Predicting and preventing violence in healthcare is a complex challenge requiring multidisciplinary solutions. AI offers promising tools for early detection, accurate prediction, and effective intervention. However, implementation must consider technical limitations, algorithmic bias, privacy concerns, and the necessity of human oversight

Nielsen S, Karlsen IL, Bak ML, Abildgaard JS, Rugulies R, and Sorensen JK. Monthly changes in well-being among Danish employees from 2018 to 2022. Was there an influence of the COVID-19 pandemic? *Scandinavian Journal of Public Health*. 2026; 54(4):331-339.

<https://doi.org/10.1177/14034948251352659> [open access]

Abstract: BACKGROUND AND AIMS: The COVID-19 pandemic affected life for a large proportion of the global population. In this study, we examined changes in well-being among employees in Denmark before, during and after the COVID-19 pandemic. METHODS: We used secondary survey data collected by a private company that had developed and provided a smartphone app to monitor employees' well-being using the WHO-5 questionnaire. We included 6758 employees from 77 workplaces, yielding 111,705 observations of well-being scores. We investigated time trends in well-being by comparing well-being scores in the years before (2018 and 2019), during (2020 and 2021) and after (2022) the COVID-19 pandemic. We further compared well-being scores during the months of three distinct COVID-19 waves with the corresponding months before the COVID-19 pandemic. RESULTS: We observed a clear seasonal variation, with higher well-being scores during the summer months (July and August) in each year, regardless of the COVID-19 situation. In both men and women, annual well-being scores were lowest during the COVID-19 years (68.6, and 67.3, respectively) compared with annual well-being scores before (68.9 and 69.3) and after (70.1 and 68.7) the COVID-19 pandemic. During three distinct COVID-19 waves in Denmark, women, but not men, showed statistically significant lower well-being scores compared with the corresponding months before the COVID-19 pandemic (all $p < 0.01$). CONCLUSIONS: The study results suggest that the COVID-19 pandemic was associated with a slight decrease in employees' well-being that was more pronounced among women than among men. Independent of the COVID-19 situation, well-being scores showed clear seasonal variation

Rytter HM, Attaubi S, Hansen LS, and Borch MW. "It feels like a loss of one's own identity": work identity in persons suffering persisting post-concussion symptoms: a qualitative study. *Disability and Rehabilitation*. 2026; 48(12):3699-3714.

<https://doi.org/10.1080/09638288.2025.2578994> [open access]

Abstract: Purpose: To examine the impact of persisting post-concussion symptoms (PPCS) on work identity, and to explore how work identity relates to the acceptance and coping mechanisms in

individuals experiencing PPCS. Methods: Twenty-three in-depth semi-structured interviews with persons suffering from PPCS for > 6 months, who attempted to return to work within the last 6 months. The data were analyzed using thematic analysis combined with hermeneutical phenomenological approach. Results: We identified one global theme "Me and my work identity". Participants expressed a profound connection between work and self-understanding, leading to impact on personal identity when unable to perform at work. The global theme was unfolded in four themes: 1. Confronting a changed self: Participants described a discrepancy between their pre- and post-injury self-perception, leading to a sense of loss and lower self-worth. 2. Negotiating new realities: Some struggled to accept changes in capabilities and feared being perceived as inadequate. 3. Living with emotional turbulence: Coping with PPCS was characterized by emotional fluctuations, including frustration, sadness, guilt, and anxiety. 4. Navigating between worlds: Participants employed various coping strategies to manage symptoms and navigate challenges. Conclusion: The results highlight the profound impact of PPCS on individuals' work identity and emotional well-being during work resumption.

Sterud T and Osthus S. Emotional demands at work measured via a job exposure matrix and sickness absence from common mental disorders: a population-based study of sex differences. *Social Science & Medicine*. 2026; 399:119231.

<https://doi.org/10.1016/j.socscimed.2026.119231> [open access]

Abstract: Emotional demands in relational work are increasingly recognized as risk factors for common mental disorders (CMDs), yet evidence on the sex-specific population burden for long-term sickness absence (LTSA) with CMD diagnoses remains limited. We conducted a nationwide cohort study of 1.84 million employed individuals in Norway aged 17-74, excluding those with CMD-related LTSA in 2017. Exposure to emotional demands in 2018 was assigned using an occupation-based job exposure matrix (JEM) we developed for this study from nationally representative survey data (n = 40,700). CMD-related LTSA (>16 days) was ascertained from administrative registers with follow-up from January 1 to December 31, 2019. Cox proportional hazards models estimated hazard ratios (HRs), population attributable fractions (PAFs), and population attributable cases (PACs), stratified by sex, and adjusted for age, education level, immigration background, tenure, working hours, job demands and job control. Higher emotional demands were associated with CMD-related LTSA in an exposure-response pattern for both sexes. Among women, adjusted HRs increased from 1.24 (Q2) to 1.77 (Q4), with a PAF of 29.7% corresponding to 10,757 cases. Among men, adjusted HRs increased from 1.20 (Q2) to 2.61 (Q4), yielding a PAF of 23.3% corresponding to 4116 cases. Women accumulated more person-years in higher emotional-demand quartiles than men (64% vs 33%), and differential exposure accounted for 23.4% (95% CI: 15.8-34.2) of women's excess risk. Occupations characterized by high emotional demands are associated with increased risk of CMD-related LTSA, with women bearing a greater population burden due to higher exposure levels and baseline risk.

Yamak B and Yildiz M. Occupational burden in the line of duty: focus on firefighter musculoskeletal injuries. *Work*. 2026; 84(2):302-311.

<https://doi.org/10.1177/10519815261434529> [open access]

Abstract: Background Firefighters are frequently exposed to high physical demands, making them especially vulnerable to musculoskeletal injuries. Understanding the scientific landscape surrounding this issue is vital for guiding preventive strategies and improving occupational health outcomes.

Objective This study aims to examine the scholarly evolution of research on musculoskeletal injuries among firefighters. It identifies dominant research clusters, high-impact authors, collaboration patterns, and thematic concentrations through a bibliometric analysis. **Methods** A bibliometric analysis was conducted using 152 peer-reviewed publications indexed in the web of science core collection between 1975 and September 2025. Vosviewer software was utilized to create visualizations of co-authorship, co-citation, keyword co-occurrence, and bibliographic coupling networks. A minimum occurrence threshold of five was set for keyword inclusion. Data were evaluated based on frequency, link strength, and temporal trends. **Results** A significant increase in scholarly output was observed after 2010, with a peak in 2023 in both publication count and citation rates. Frequently occurring keywords included "firefighters", "musculoskeletal injury", "occupational health", and "injury prevention". density visualizations revealed core themes centered on work-related injury risks, rehabilitation protocols, and tactical preparedness. **Conclusions** The research landscape on firefighter musculoskeletal injuries has expanded considerably in both scope and academic impact. The field shows increasing interdisciplinary integration, notably between occupational health, rehabilitation science, and emergency response research. These findings highlight the importance of sustained, intervention-based research to reduce injury rates and support long-term workforce sustainability.

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