



Research article

A scientometric analysis of three decades of research on workplace psychosocial hazards: Implications for policy and practice

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ABSTRACT

Introduction: The Workplace Psychosocial Hazards (WPH) agenda has gained policy currency in the context of the United Nations' 17 Sustainable Development Goals (SDGs). For instance, SDG#8 explicitly aims to protect labor rights and promote safe and secure working environments for all workers under the umbrella term of decent work. More importantly, WPH has become a significant priority of workplace health and safety management (WHSM) practices because of the high cost associated with workers' well-being and reduced productivity and performance. Nevertheless, a comprehensive analysis of WPH-related literature remains scant. **Method:** This article responds to this gap and analyses scholarly research outputs between 1993 and 2022 available in the Scopus database ($n = 521$) with two specific objectives: (a) to identify key research trends, key focus areas, collaboration networks, and prominent research institutions/countries and (b) generate insights into informing workplace safety and health management (WHSM) practices and future research. **Results:** The analysis revealed that the research topics with the most emphasis were occupational health, mental health and stress. In contrast, topics such as policy assessment, sustainable development, and shift work received the least attention. **Practical Applications:** Given that the scientometrics analysis has the potential to inform the WPH agenda, this article contributes to the discussions on three thematic implications of the analysis in the context of future research directions: (a) policy initiatives, (b) WHSM practices, and (c) research partnerships.

1. Introduction

According to the Australian Government (2024), workplace health and safety management (WHSM) “includes a set of policies, procedures and plans that systematically manage health and safety at work and can help minimize the risk of injury and illness from workplace operations” (para 1). The need to address and minimize workplace psychological hazards (WPH) has been increasingly recognized in the context of WHSM. However, the notion of WPH can imply many things for many people. The Australian Commission for Occupational Safety and Health, *Psychosocial Hazards in the Workplace* (2022) characterizes WPH as being “related to the psychological and social conditions of the workplace rather than just the physical conditions including but not limited to stress, fatigue, bullying, violence, aggression, harassment, and burnout, which can be harmful to the health of workers and compromise their well-being” (p. 2). Workplace-related psychological and social challenges are priorities for WHSM because of the high cost associated with workers' well-being, absenteeism, and reduced productivity and

performance (International Labour Organisation (ILO), 2017). For example, according to the European Union Information Agency for Occupational Safety and Health (EU-OSHA) (2023), nearly 50% of European workers consider stress part and parcel of working, contributing to half of all lost working days. The Australian Bureau of Statistics (ABS) reported that over half a million people in Australia had work-related injuries or illnesses (ABS, 2018). It is evident that WPH is insidious and costly for organizations in human and financial terms (Quinlan, 2023). The WPH agenda has, therefore, been at the forefront of WHSM practices for over two decades. For instance, the European Framework for Psychosocial Risk Management at the Workplace (PRIMA-EF) was developed as a supporting structure to promote government policies and workplace practices at Europe's national and enterprise levels (United Nations (UN), 2022). The World Health Organisation's (WHO) *Comprehensive Mental Health Action Plan 2013 – 2030* identifies the global priorities related to WHSM in terms of outlining strategies for promoting mental well-being in the workplace and improving evidence by fostering research capacity and international collaboration with

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relevant stakeholders (WHO, 2013, p. 3). ILO's (2019) Violence and Harassment Convention (i.e. Convention No. 190) has specifically identified the need to address “violence and harassment and associated psychosocial risks in the management of occupational safety and health” (p. 8) as a global priority. The WPH agenda has also found its way within the United Nation's (UN) 2030 Agenda and its 17 Sustainable Development Goals (SDGs) (ILO, 2022a). For example, SDG#8 explicitly aims to “promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all” (UN, 2022, para 1) with a specific target (8.8) of “protecting labour rights and promoting safe and secure working environments for all workers” (para 8).

Despite the burgeoning interest in WPH, government policies often do not differentiate between psychosocial and physical hazards. Mainly because the causes and effects associated with psychosocial hazards are often dynamic, invisible, and non-linear. Consequently, one of the main challenges for organizations is not only complying with national regulatory requirements, but also reducing physical and psychosocial challenges and their adverse impacts on individual, organizational, and societal outcomes (Forastieri, 2016; Potter et al., 2019) through the adoption of best practice WSHM. This article conducts a scientometric analysis – quantitative visualization of evaluation of trends and patterns within scholarly literature – of the WPH literature to generate insights that are “substantive, unbiased, and concrete” (Haghani, 2023, p. 12) in nature.

This article is divided into five parts. The first section sets the scene and describes the scientometrics approach. Subsequently, the article presents data collection and analysis and discusses implications before concluding with concluding remarks.

2. Scientometrics and The WPH

Scientometrics and bibliometrics are techniques in which research outputs are the subject of analysis. Scientometrics, a subset of bibliometrics, is often focused on appraising scholarly outputs in quantitative as well as qualitative terms. Both techniques help overcome limitations of a traditional systematic literature review, such as resource-intensiveness of the manual process and comprehensiveness of the literature analyzed (Haghani, 2023). The main distinction between the two is that while bibliometrics concerns the evaluative and descriptive approaches, scientometrics concerns data visualization. According to Mahmood and Dhakal (2022a), scientometrics can untangle critical elements that push knowledge creation and innovation, such as research institutions, researchers, research networks, and research clusters. Scientometrics can process a large amount of bibliometric data through mapping and graphical representations of outputs, freeing researchers from resource constraints associated with manual systematic reviews (Hood & Wilson, 2001). Consequently, the analysis allows scholars to grasp a macro view of the research topic of interest, such as global trends and priorities, and simultaneously retain the prominent attributes of the research themes at the micro level, such as most-cited researchers and research outputs (Dhakal, 2023).

Several studies have deployed bibliometrics/scientometrics techniques to examine various aspects of WPH. For example: (a) Wang et al. (2020) examined current progress in research as well as growing trends in the management of occupational well-being; (b) Fusco et al. (2020) utilized bibliometrics techniques to explore research and assessment in mental health; (c) Bautista-Bernal et al. (2021) explored the topic of occupational health with a lens of social responsibility; (d) Rashmi and Kataria (2022) carried out bibliometrics analysis of the work-life balance literature; (e) Aboagye et al. (2021) examined the research outputs performance and the work environment of academics in universities; (f) Akintunde et al. (2022) investigated the ramifications of the pandemic on mental well-being of workers; and (g) Otitolaiye and Abd Aziz (2023) carried out a bibliometric analysis of studies on safety management system. However, a comprehensive longitudinal analysis of WPH literature remains scant. This article responds to this research gap and

examines three decades of research on WPH with two specific objectives:

1. To identify key research trends, key focus areas, collaboration networks, and prominent research institutions/countries.
2. To generate insights into informing workplace safety and health management (WSHM) practices and future research.

3. Data collection and analysis

This study adopts a three-staged process (Dhakal et al., 2022a; Mahmood & Dhakal, 2022b) to conduct scientometrics analysis: (a) software selection, (b) database selection, and (c) network analysis and visualization. First, the capabilities of researchers, cost, and user-friendliness led to the selection of three software applications: Microsoft Excel, Gephi, and VOSviewer. Microsoft Excel aids scientometrics by sorting data to create tables and diagrams. On the one hand, scientometric linkages and research networks can be captured in VOSviewer, a free software application (Hilal et al., 2019). On the other hand, another free software application, Gephi, enables measurable analysis from data networks (Hasan et al., 2021). These software applications made the visualization of eminent publication outlets, keyword co-occurrence mapping, and research collaboration networks possible.

Next, Scopus was selected as the database source for document searches and abstract extractions. Studies by Hallinger and Kovačević (2019) and Mongeon and Paul-Hus (2016) suggest that the Scopus database provides more extensive coverage of sources than alternative databases such as the Web of Science for disciplines outside medical and the physical sciences. The search string “workplace” AND “psychosocial” AND “hazards” was used for document search. This search yielded 554 journal articles for the period between 1993 and 2022. Since complete bibliometric data are often unavailable for non-journal articles (Churrua et al., 2019), books, book chapters and conference proceedings were excluded from the analysis. Focusing on journal articles enhances the clarity of analysis and interpretation and minimizes data noise (Hosseini et al., 2018). After screening outputs for language, duplicity, and non-journal outputs, 521 research outputs in English were selected for the analysis.

Third, two-staged mapping and visualization were conducted. Drawing on Dhakal and Mahmood (2022a; 2022b), the initial phase involved constructing network maps through keywords co-authorship analysis and co-occurrence analysis as well as creating graphs and tables of publication trends, top fields of research and top research outlets, as presented in the next section. The latter phase consisted of constructing maps to extract relevant evidence from the network and generating: “conceptual, intellectual, or social evolution of the research field, discovering patterns, trends, seasonality, and outliers” (Cobo et al., 2011, p. 1383).

4. Results

Fig. 1 indicates that research outputs have steadily grown, particularly over the last decade. A total of 310 outputs (60%) were published in the immediate past decade, that is, between 2013 and 2022. The database featured considerably more journal articles in 2020 ($n = 46$). Although the authors tried to explore the cause of this spike, a definitive reason could not be established. Overall, the number of citations for articles surpassed 1,000 in 2015 and 2,000 in 2022. Articles with more citations have probably been available in a database like Scopus for extended periods. In terms of specific outputs, Kristensen et al.'s (2005) article titled “The Copenhagen Psychosocial Questionnaire – A Tool for the Assessment and Improvement of the Psychosocial Work Environment” was the most cited ($n = 939$), followed by Kivimäki et al.'s (2012) article titled “Job strain as a risk factor for coronary heart disease: A collaborative meta-analysis of individual participant data” ($n = 675$).

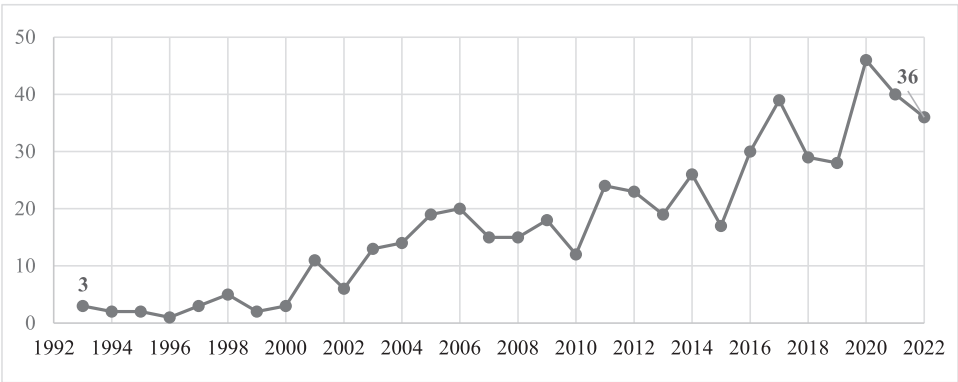


Fig. 1. Trend on WPH-related research outputs (1993 – 2022).

4.1. Top outlets

The top 10 contributing outlets ($n \geq 10$) in a Scopus database are listed in Table 1. The *Scandinavian Journal of Work Environment and Health* published the most number of articles ($n = 25$), followed by *Safety Science* ($n = 24$). The revelation of these outlets as the top ones to publish WPH-related studies is hardly surprising. For example, Scandinavian countries like Sweden have highlighted psychosocial workplace risks since the late 1970 s (Anonymous, 2019). The aim of a multidisciplinary journal, *Safety Science*, is to focus on research on the well-being of people at work (Anonymous, 2024). Since the quality of journals is also increasingly significant in evaluating the quality of outputs (Roldan-Valadez et al., 2019), two widely used metrics, Impact Factor and CiteScore of top outlets, were gathered from the homepage of individual journals and Scopus database. Identifying top outlets and their metrics is helpful for potential researchers active in the WPH space to select appropriate journals for publishing their scholarly work.

4.2. WPH-related outputs by discipline

Research outputs contained in the Scopus database were distributed across 22 disciplines. However, since some journals are multidisciplinary in nature, a single article can be assigned to various discipline categories in the database, potentially distorting the actual contribution. Hence, a criterion ($n \geq 10$) was adopted to capture the prominent disciplines (in percentage). Fig. 2 shows that a total of eight disciplines met the criteria, ranging from medicine to arts and humanities. Medicine and social sciences were the top two disciplines, accounting for 60% ($n = 356$) and 12% ($n = 75$) of the output volume, respectively.

Table 1
Top outlets for the WPH-related research.

Journals with at least 10 WPH-related articles	Count	Impact Factor*	CiteScore Index**
Scandinavian Journal of Work Environment and Health	25	6.3	7.8
Safety Science	24	6.1	12.4
International Journal of Environmental Research and Public Health	21	n/a	5.4
International Archives of Occupational and Environmental Health	19	3.0	5.1
Occupational and Environmental Medicine	15	4.9	7.6
Occupational Medicine	13	5.1	5.3
Journal of Occupational and Environmental Medicine	13	3.2	3.4
American Journal of Industrial Medicine	13	3.5	5.0
BMC Public Health	12	4.5	6.1

*Based on journal homepage; ** Based on Scopus database.

4.3. Collaboration networks (co-authorship Analysis)

The analysis focused on unravelling top scholars, leading institutions, and prominent nations on WPH-related research. Scholarly communications and productivity are improved by the presence of well-networked and collaborative groups of scholars in a particular field of study, increasing access to funding, expertise, and specialized knowledge (Ding, 2011). In addition, collaborative research outputs tend to be published in high-impact outlets with higher citations (Glänzel & Schubert, 2004). Co-authorship analysis allows the visualization of the scientific collaboration network. To spot the prominent authors in the area of WPH, the unit of analysis and counting method was set in VOSviewer as Co-authorship and Fractional Counting, respectively. The minimum number of outputs per author was set at five (Mahmood & Dhakal, 2022a). A total of 33 authors out of 1,717 identified authors meet the criteria. The co-authorship network was then submitted to Gephi to generate an authority score (Cherven, 2015).

Fig. 3 shows the extensive network map where a higher authority score is represented through the colors with larger nodes. Based on the authority score, the top five authors are Westerlund H. (Stockholm University, Sweden), Rugulies R. (University of Copenhagen, Denmark), Madsen I.E.H. (National Research Centre for the Working Environment, Denmark), Vahtera J. (Finnish Institute of Occupational Health, Finland), and Lund T. (National Research Centre for the Working Environment, Denmark). As noted earlier, researchers affiliated with Scandinavian institutions are represented heavily within these networks. Three prominent collaboration networks (Fig. 3) were led by Westerlund H., Rugulies R., and Lund T.

For the co-authorship analysis in VOSviewer, the counting methods were set as organization and fractional counting (Mahmood & Dhakal, 2022). The minimum number of organizational outputs was set as two. A total of 40 organizations out of 1431 met the criteria. The VOSviewer map was then transferred to Gephi to utilize the Hyperlinked Induced Topic Search (HITS) algorithm. HITS enables the analysis to generate a HUB score for each node – the darker the shade, the higher the HUB scores, indicating the prominence of institutions engaged in WPH-related studies.

The institution with the highest hub score is the University of Copenhagen (Denmark), followed by the Finnish Institute of Occupational Health (Finland), the Ghent University (Belgium), and the Federal Institute for Occupational Safety and Health (Germany). Fig. 4 reveals the strong presence of other European universities and institutions. In Australia, the University of South Australia, La Trobe University, and Deakin University are the top institutions for research on WPH. Amet University (India), National Taiwan University Hospital (Taiwan), Gift University (Pakistan), National Textile University (Pakistan), The University of Tokyo (Japan), Kitasato University School of Medicine (Japan), National Cheng Kung University (Taiwan), National Taiwan University (Taiwan), and Institute of Occupational Safety and Health

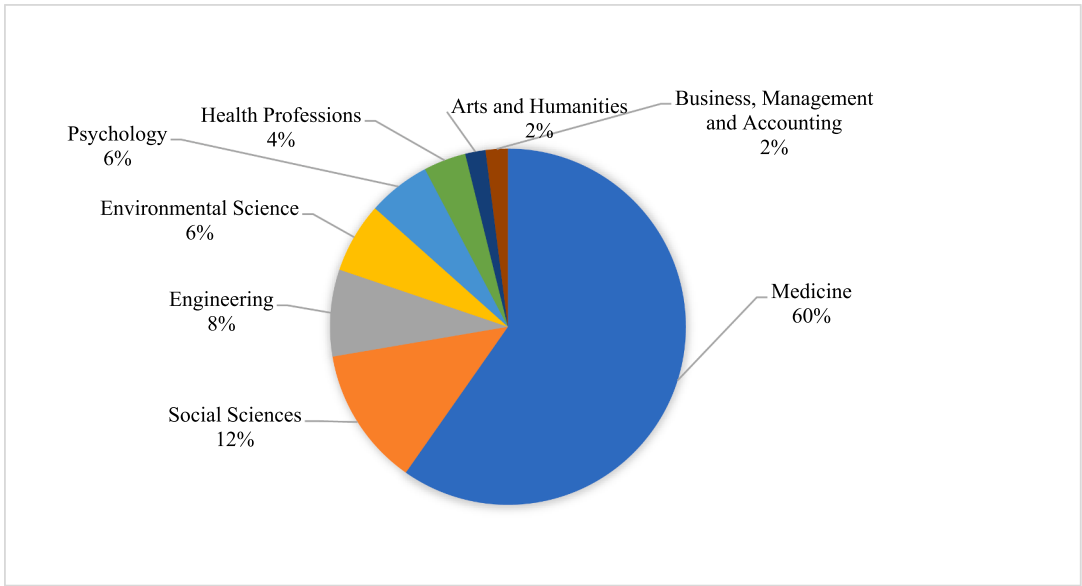


Fig. 2. Percentage of disciplines with at least 10 WPH-related research outputs.

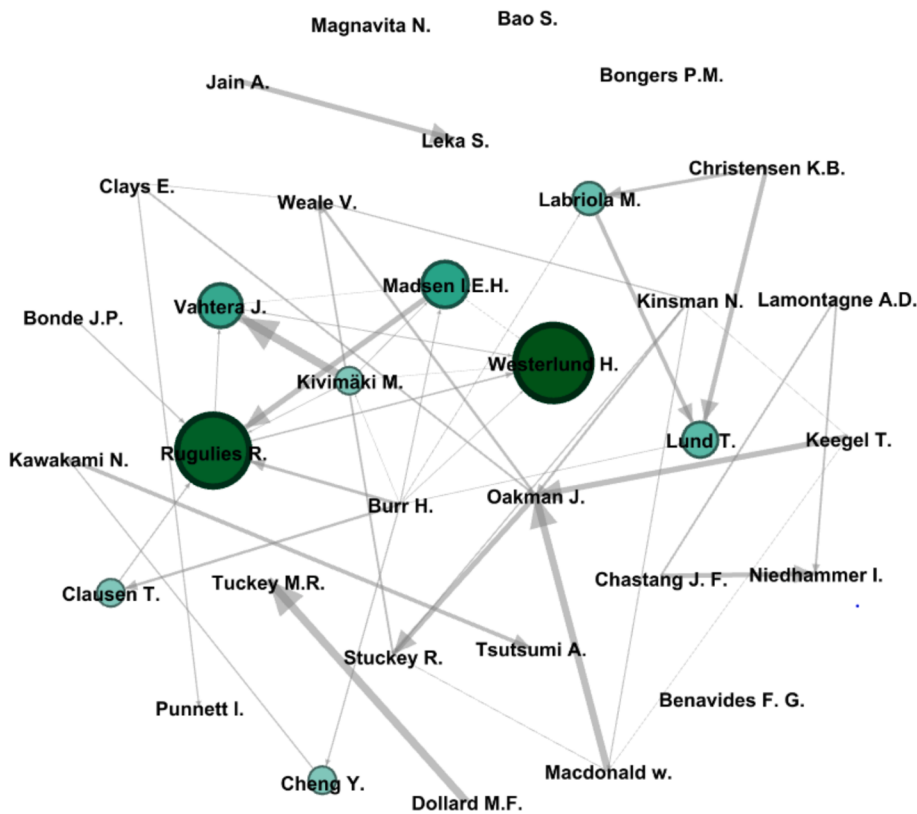


Fig. 3. A scientific collaboration network of leading authors.

(Taiwan) are prominent research institutions in the Asia Pacific Region. In the UK, University College London and the University of Nottingham are the top two universities in the research on WPH. The University of Wisconsin-Milwaukee, University of Washington, and Harvard School of Public Health are prominent research institutions in the United States for research in relevant research areas.

The findings of a co-authorship analysis based on countries provide insights into the patterns of scientific collaboration and knowledge production across different regions. For example, the analysis may

reveal that some countries are more likely to collaborate while others are more isolated or disconnected from the global scientific community. The analysis has the potential to uncover the strengths and weaknesses of scholars in different countries and how the community of scholars interacts with each other. To probe this aspect, the counting method was set as Fractional Counting, with the organization being the unit of analysis (Mahmood & Dhakal, 2022b). A minimum number of research articles and citations specific to a country was set as five. Twenty five organizations out of 80 countries meet the criteria. A visual map was

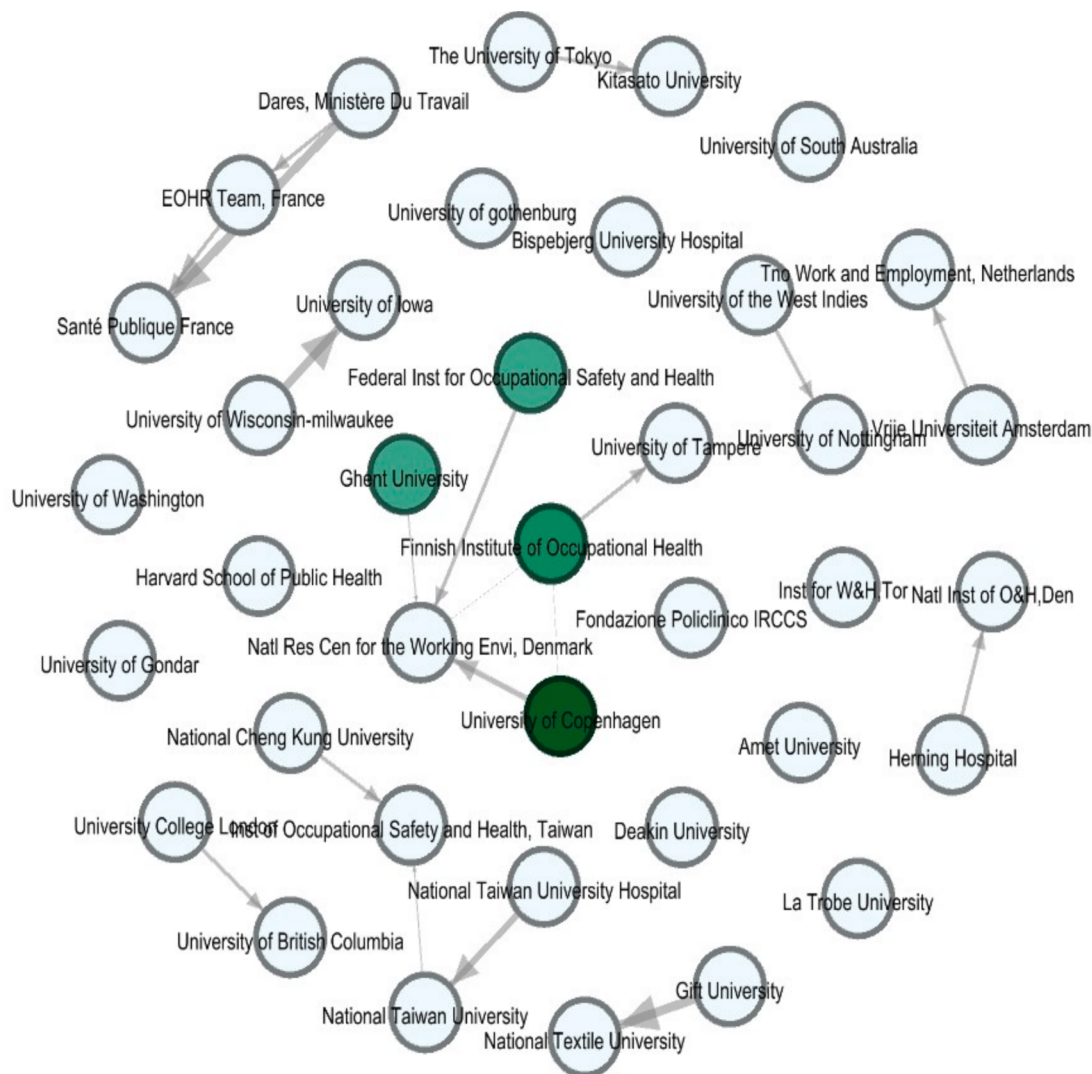


Fig. 4. Prominent institutions researching engaged in WPH-related studies.

created in the co-authorship network and then submitted to Gephi to generate a weighted degree score; larger nodes with darker shades indicate higher weighted degree scores (i.e., the larger number of strong ties to additional nodes in the network).

WPH is an evolving field of research, and researchers from several developed countries are contributing to this field. However, some countries are more prominent in this research than others. Australia has a strong tradition of research on psychosocial risks in the workplace, with strong links with strong links with UK, France, Malaysia, New Zealand, Sweden, and Finland (Fig. 5). Another significant scientific partnership relationship is visible between the UK and Finland and between the United States and Scandinavian countries (Sweden, Finland, and Denmark). However, there is a paucity of WPH-related research in the developing and emerging economies of Africa, South America, and South Asia. For example, South Africa is the only African country with published research outputs in this area, collaborating with the United States, Belgium, and Denmark. Conversely, researchers from countries like Poland and Turkey seem to operate independently, with no international collaboration groups.

4.4. Research focus (Co-occurrence analysis)

VOSviewer was utilized to map a co-occurrence network based on author keywords to uncover the main WPH-related research topics. A

well-networked keyword mapping might help comprehend the linkages, patterns, and structure of scholarly research and knowledge across a specific period (van Eck, 2019). In order to undertake the co-occurrence analysis, the unit of analysis and counting methods were set as author keywords and fractional counting, respectively (Mahmood & Dhakal, 2022a). The minimum number of occurrences of a keyword was set as two. 282 keywords out of 1,331 keywords meet the threshold. Country names such as Australia, Taiwan, Finland, Malaysia, Japan, Canada, Denmark, New Zealand, South Africa, Italy, Turkey, India, and France are omitted. After omitting the generic names, there were 269 keywords with 7 clusters connected via 1,469 links (Fig. 6). The map generated in VOSviewer was also transferred to Gephi to estimate the degree of centrality for each node. Table 2 shows the leading research topics (top 10) with degree centrality values of 35 or above, indicating prominent research topics. Subsequently, Table 3 shows research topics that received the least emphasis with degree centrality values of two or less. If two areas were equivalent, the one with the higher betweenness centrality rating was considered more important.

The research areas with the highest degree of centrality included occupational health, stress, and mental health, amongst others (Table 2). Given that the relationship between WPH and occupational health is complex and multi-faceted in nature, the overwhelming emphasis is hardly surprising. As Chirico et al. (2019) point out, WPH can significantly impact an individual's occupational health and well-

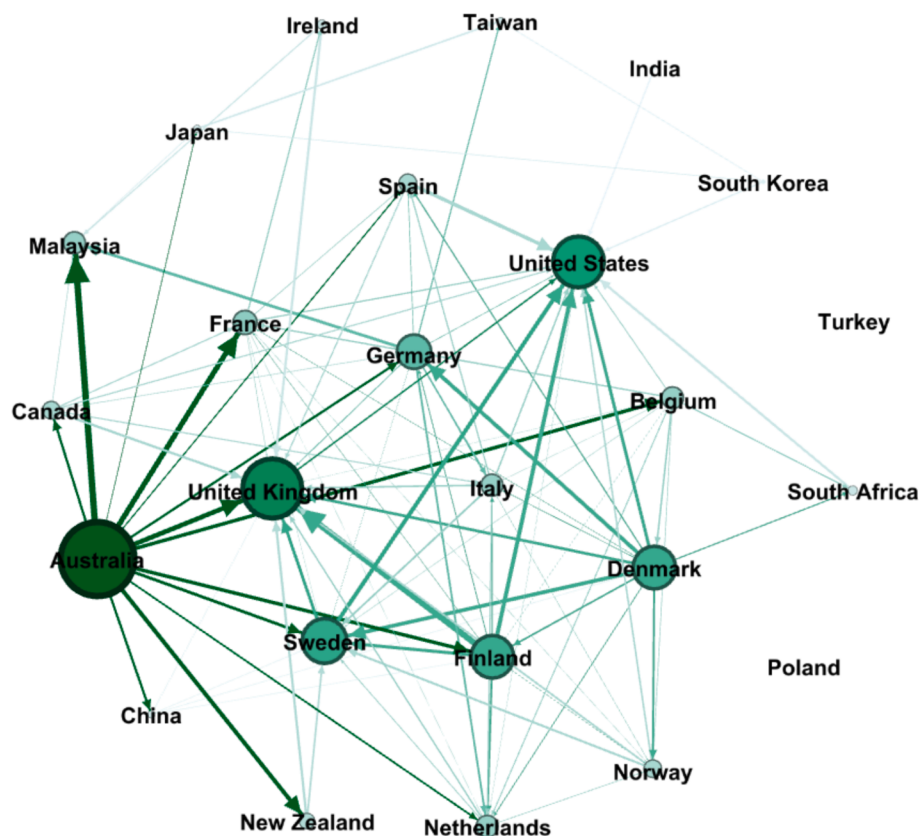


Fig. 5. Prominent countries in the area of WPH-related research.

being, including stress, burnout, anxiety, and depression. For instance, [Edward et al. \(2014\)](#) found that aggression towards nurses in workplace violence can adversely impact mental well-being. In addition, WPH is also linked with an elevated risk of depressive symptoms or major depressive episodes ([Bonde, 2008](#)). A poor workplace environment can also contribute to developing psychosocial hazards ([Sousa-Ribeiro et al., 2022](#); [Berthelsen et al., 2021](#); [Pan et al., 2020](#)). For example, workplace stress and job strain can result from a heavy workload, long hours, and role ambiguity ([Prakash et al., 2017](#)). In particular, prolonged stress can result in burnout and contribute to physical issues, including musculoskeletal disorders and cardiovascular disease ([Fishta & Backe, 2015](#)). In turn, burnout can lead to further stress and adversely impact mental well-being as well as decreased job satisfaction and productivity ([Madsen et al., 2015](#)). Accurate assessment of psychosocial hazards is often a guiding principle of WSHM practices. It involves thoroughly examining various factors encompassing the work's psychological and socio-cultural dimensions. For example, job demands, control, and support are three critical aspects of any workplace that require comprehensive evaluation because of their implications on employees' physical and mental well-being ([Bao et al., 2020](#)).

Although a significant number of studies has focused on understanding the physical and biomechanical aspects of workplace-related hazards, such as musculoskeletal problems, a notable gap exists in comprehensively capturing the psychosocial dimensions of these issues, such as the musculoskeletal discomfort, the Job Content Questionnaire (JCQ), policy assessment, and sustainable development ([Table 3](#)). According to [Neupane et al. \(2016\)](#), psychosocial factors, including job stress, the social context of work, and interpersonal dynamics, play a more profound role in developing and exacerbating physical problems such as musculoskeletal discomfort and injuries than are often acknowledged. For example, [Oakman et al. \(2022\)](#) reported that preventing musculoskeletal disorders necessitates identifying physical and psychosocial hazards. [Chirico et al. \(2019\)](#) reported that most OECD

countries had developed regulations on mental health and/or psychological hazards (p. 2470). WPH-related initiatives have occasionally relied on the Job Content Questionnaire (JCQ) to assess job strain, combining psychological demands and workplace control ([Mokarami et al., 2016](#)). However, the utility of JCQ in gauging various aspects of WPH (e.g., psychological stress and social support of the work environment; [Choi et al., 2009](#)), cannot be denied; the analysis reveals limited literature on JCQ in the context of WPH.

According to [Viljoen \(2021\)](#), workplace stress resulting from psychosocial factors can compromise an individual's resilience, increasing their vulnerability to physical discomfort caused by environmental factors in the building and thereby negatively impacting workers' mental and physical health and productivity. In addition, there were limited studies on participatory ergonomics programs. For instance, [Rasmussen et al. \(2017\)](#) investigated participatory ergonomics programs involving aged care workers. Their findings revealed that physical ergonomics was the most commonly identified risk factor (69%), followed by organizational practices (24%) and psychosocial risk factors (7%). More importantly, the study focused on structural intervention (i.e., program development), rather than outcomes (i.e., reduction of WPH).

The fact that themes such as policy assessment, sustainable development and shift work have received the least attention globally is noteworthy. First, [Lippel \(2011\)](#) contend the need for evidence-based policies and practices to protect the mental well-being of employees and provide socio-economic support when workers end up being disabled with WPH. For example, despite the development of regulatory frameworks across OECD countries, such as Australia's WHS regulations ([Potter et al., 2019](#)), there is a significant gap in progress towards the minimization and/or mitigation of WPH on a global scale. One way to address this shortcoming would be to improve policy development and enforcement at the governmental level and compliance at the organizational level, ensuring that regulations translate effectively into WSHM practices. For instance, scholarly research and policy best practices

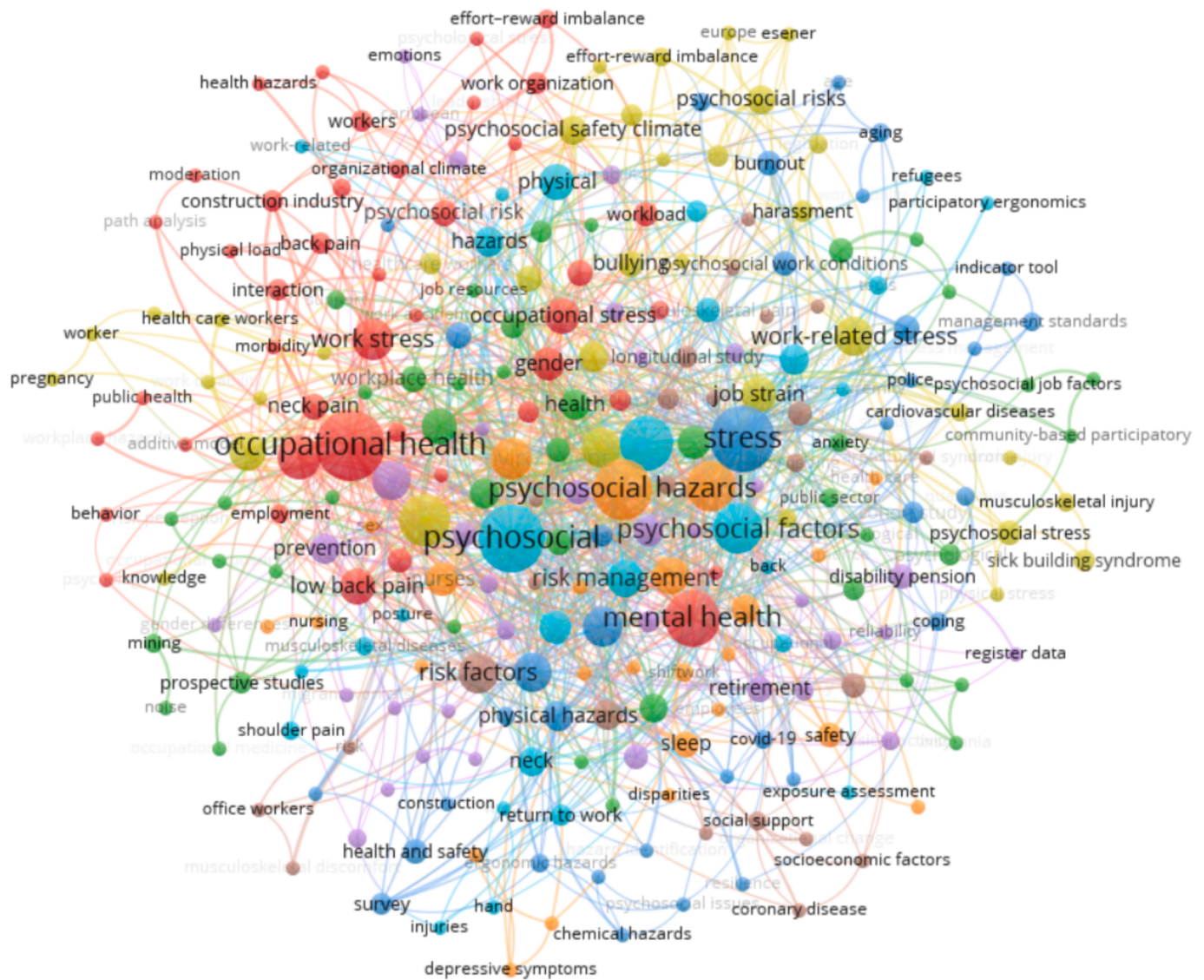


Fig. 6. Co-occurrence network analysis map of main research topics.

Table 2
Top ten WPH-related research topics.

<i>Research Topics</i>	<i>Degree centrality</i>	<i>Betweenness centrality</i>
Occupational health	72	2792.62
Psychosocial	70	1928.84
Stress	61	606.74
Mental health	56	1550.56
Workplace	53	613.48
Psychosocial work environment	48	947.64
Psychosocial hazards	47	1122.53
Musculoskeletal disorders	38	619.09
Epidemiology	37	375.75
Job strain	35	823.83

(Bowen & Zwi, 2005) can be used as an evidence-based approach to not only update existing regulations to enhance enforcement mechanisms but also support organizations with detailed guidance on psychosocial risk assessments.

Second, given that the UN 2030 agenda was adopted in 2015, the lack of literature on the nexus between WPH and sustainable development is surprising. In the only paper within the database, [Sen et al. \(2021\)](#) focus on the nexus between occupational safety and SDGs and

Table 3
WPH-related research topics with the least focus.

<i>Research topics</i>	<i>Degree centrality</i>	<i>Betweenness centrality</i>
musculoskeletal discomfort	2	0
musculoskeletal injuries	2	0
job content questionnaire	2	0
psychosocial working environment	2	0
sick building syndrome (SBS)	2	0
total worker health	2	0
participatory ergonomics	1	0
policy assessment	1	0
sustainable development	1	0
shift work	1	0

argue that governments need to consider links between psychosocial aspects of occupation-specific hazards and SDGs. Nonetheless, this finding aligns with the slow uptake of the 2019 Violence and Harassment Convention, which came into force in 2021 and has been ratified only by 42 countries as of June 2024 (ILO, 2024). Third, shift work (i.e., outside of 7 am to 7 pm), is often correlated with burnout as well as increased workplace accidents (Tüchsen et al., 2008) and depression (Lee et al., 2017), posing a significant challenge for WHSM-related

policies and practices (Reinganum & Thomas, 2023). WPH-related studies in the context of policy assessment and sustainable development have the potential to serve as evidence needed to inform policy initiatives at the national level and WSHM practices at the organizational level.

5. Discussions

The findings reported above indicate that the WPH is a significant concern for individuals, organizations, and governments and has considerable human and social costs. In the broader context of the post-pandemic work environment, the ILO (2022a) stated that: “work arrangements and conditions have changed, bringing new psychosocial challenges for the health and well-being of workers – whether in the frontline, in essential services, working from home, or having lost their businesses and jobs” (p. 6). For example, understanding the specific demands and control mechanisms in high-stress professions like healthcare or emergency services can lead to implementing stress-reduction WSHM practices, adequate staffing levels, and support mechanisms. Although the WPH agenda is equally significant, both in developed and developing economies, as demonstrated by the 2030 agenda and SDGs (Dhakal & Burgess, 2021), the findings show that WPH-related scholarly research outputs have been primarily produced in developed countries, and scholarly attention to policies and practices could have been stronger. For instance, national-level policies that are informed by and support global priorities (WHO, 2013; ILO, 2019; UN, 2022) can guide WSHM practices at an organizational level and have the potential to advance the WPH agenda, particularly in the global south. In this context, three thematic implications are discussed in the context of future research directions: (a) policy initiatives at the country level, (b) WSHM practices at the organizational level, and (c) research partnerships between developed and developing economies.

5.1. Policy initiatives at the country level

Scholars examining various facets of the WPH have linked workplace-related challenges to adverse societal outcomes (Leka et al., 2011; Potter et al., 2019), which warrants policy attention. For instance, Safe Work Australia (SWA) – an Australian Government statutory agency established in 2009 under the Safe Work Australia Act 2008 with an overarching responsibility to improve work health and safety (WHS) across the country – has developed the model WHS laws to be implemented across the country (SWA, 2021). The laws include: “(a) model WHS Act (2020), (b) model WHS Regulations (2022), and (c) model Codes of Practice (2022). Under the model WHS laws, a person conducting a business or undertaking must manage the risk of psychosocial hazards in the workplace” (SWA, 2022, para 2).

More importantly, two significant policy developments in Australia have the potential to serve as a vanguard policy best practice in the global context. First, the recently amended Model Work Health and Safety Regulations (Australian Parliamentary Counsel’s Committee, 2024) makes a clear distinction between psychosocial hazards/risks and physical ones. Second, the Review of the Model Work Health and Safety Laws (Boland, 2018) with a primary objective of “maintaining and strengthening the national harmonization of laws relating to WHS and to facilitate a consistent national approach to WHS in this jurisdiction” (p. 86) has led to the harmonization of WHS policies across all but one jurisdiction as of September 2024 (DEWR, 2024). In contrast, in an online article published by the US Center for Disease Control and Prevention (CDC), Schulte et al. (2024) highlight the urgent need for developing a national regulatory or consensus standard to address WPH.

In the specific global context of decent work (SDG#8) and the Violence and Harassment Convention (Article#9), addressing WPH from a global/national policy-level standpoint is crucial because a robust regulatory backbone is essential in safeguarding physical and psychosocial health (Leka et al., 2008). Janetzke and Ertel (2017)

contend that “although efforts have been made to specify the concept and the process of WPH, there are ambiguities around policy development and implementation” (p. 300). Future studies should consider these shortcomings to advance the WPH agenda. By conducting more detailed and context-specific investigations, researchers can identify the unique challenges and stressors in different industries and countries (Schiöler et al., 2015) – which, in turn – allows for the development of national strategies for mitigating psychosocial hazards (Waldenström & Härenstam, 2008).

5.2. WSHM practices

Notwithstanding the connection between increasing WPH and the “corrosion of legislative protections for workers and ... the growing dominance of neoliberalism in policy discourse” (Quinlan, 2023, p. 5), evidence-based WSHM practices are necessary. Although the WPH agenda has gained currency across most OECD countries, there is an urgent need for WSHM practices to address WPH by encompassing a comprehensive spectrum of workplace environments that contribute to poor psychosocial outcomes (Leka et al., 2015). Moreover, WSHM practices cannot simply rely on incremental adjustments to reduce physical risk factors (Neupane et al., 2016; Oakman et al., 2016). There is a need for organizations to develop internal WSHM policies and procedures to not only ensure compliance with the respective country’s WPH-related regulatory frameworks, but also foster best practices for a positive work environment. For instance, the ability of government regulators to publicly expose poor organizational behavior was found to improve compliance and decrease occupational hazards (Johnson, 2020).

WPH studies have the potential to inform the development of WSHM practices that address both the physical and psychological aspects of employee well-being and productivity (Bailey and Dollard, 2014). For instance, Van Rooyen and McCormack (2013) highlight the need for evidence-based interventions based on knowledge of whether or not management and staff incorporate both physical and psychological risks in the workplace. Since the primary motivation of WSHM practice is to improve workers’ well-being (LaMontagne et al., 2014), the need for more WPH-related studies to inform WSHM practices cannot be underestimated. For example, James et al. (2021) study of the Australian mining sector found that workers reported significantly greater levels of psychological suffering than average Australians and called for a broader WSHM response at the industry level. While the JCQ has proven valuable in specific industries and job types, as mentioned earlier, substantial research is lacking in assessing its appropriateness in diverse occupations (Edimansyah et al., 2007). Investigating JCQ’s reliability and validity across a broader spectrum of professions (such as healthcare, service, and technology sectors), can yield insights into its limitations and areas for improvements in WSHM practices. For example, future WPH research potentially needs to consider the development of supplementary items or modules specifically designed to capture emerging workplace stressors (such as those associated with remote work, digital technologies, and changing labor market dynamics).

5.3. Research partnerships

The OECD countries, such as Australia, Denmark, Sweden, the UK, and the United States, stand out as the key knowledge-producing countries on WPH. Although the increasing attention to WPH-related research outputs across developed economies is encouraging, the above analysis highlights the divide between developed/western and developing/non-western economies. For instance, in an editorial of the journal *Industrial Health*, Idris et al. (2023) stated that: “inadequate attention has been given to psychosocial risk factors at work in Asia. Both academic reporting and policymakers are guilty of neglecting this issue” (p. 237). Kortum and Leka (2014) argued that: “developing countries are not spared from the health, economic, and societal impact of psychosocial risks

and work-related stress” (p. 7). While sporadic but laudable efforts to examine WPH in developing countries have emerged (Dollard et al., 2014; Kortum & Leka, 2014), the attention remains negligible. Similarly, China, Japan, and Taiwan are the front runners in producing research outputs among countries in the Asia Pacific region. However, joint results from countries within the region and the joint initiatives between institutions in developed and developing economies at a regional level remain weak. Although, the WPH-related scholarly research outputs produced due to north–south research collaborations may be either inaccessible or have not found their way into the English databases. Since cross-cultural collaborations can potentially strengthen the research domain and policy outcomes (Bleck et al., 2018), research partnerships between developed and developing economies need attention from WPH-related scholars.

5.4. Limitations

There are limitations to the analysis presented above. The COVID-19 pandemic and the associated focus on workplace safety and employee well-being (Dhakal et al., 2021; ILO, 2020) meant that emerging post-pandemic scholarly outputs on WPH were predominately not part of the analysis. In addition, shortcomings associated with dataset limitation related to journals available in Scopus, the exclusion of non-English articles, and the omission of grey literature cannot be overlooked. If WHSM practices are to be evidence-based and incorporate basic principles of risk management to identify, mitigate, or minimize WPH-related risks at the individual and or organizational level, the potential of grey literature review (Clarke, 2019) to inform organizational practices and procedures cannot be overlooked. Future research in this area can examine best practices in the grey literature and also evaluate the impact of government regulations on WHSM.

6. Conclusion

This article analyzed 521 WPH-related scholarly outputs published in the last three decades that are available in the Scopus database. Since the contention of this analysis is that the utility of rigorous scientometrics analysis cannot be underestimated (Béland, 2016), the main contribution of this article is highlighting the utility of scientometric analysis of the WPH literature for exploring various aspects of contemporary research trends, informing policies and practices, and guiding future research directions. Although the WPH agenda needs to focus on the nature of the workplaces and workers themselves (Quinlan, 2023), the above analysis demonstrates two clear trends. First, the past three decades have witnessed a substantial increase in WPH-related scholarly outputs. Second, it is clear that the multidisciplinary nature of WPH literature remains somewhat fragmented. Although the top three influential research areas were occupational health, psychosocial, and stress, contemporary research topics, such as policy assessment, sustainable development, and shift work, had received hardly any attention. The fact that research on policy assessment of WPH was found to be scarce is not necessarily unique, as similar patterns exist in other multidisciplinary research (Virani et al., 2020). The findings also demonstrate that developed economies, particularly research institutions in Scandinavian nations, stand out as central actors in producing and collaborating in WPH-related studies. The fact that the state of work, workplaces, and working conditions in many parts of Asia remain a matter of concern, such as high rates of work-related deaths and depression (ILO, 2021), strengthening collaborative opportunities between European and Asian institutions is a worthy proposition in the context of advancing research on WPH. Given that the literature reviews and meta-analyses provide crucial evidence for public policy reforms and innovation, the utility of the WPH-related scientometrics analysis to inform WHSM practices and future research direction cannot be underestimated.

CRedit authorship contribution statement

Both authors equally contributed to every aspects of the paper on a 50/50 basis.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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