

BURNOUT AND JOB PERFORMANCE: A SCIENTOMETRIC ANALYSIS

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Abstract: *Employees across sectors experience burnout, which is emotional, physical, and mental weariness from extended stress. This scientometric study investigates the evolving scholarly discourse on the relationship between burnout and job performance. Drawing data from Scopus and Web of Science (WoS), and employing ScientoPy and VOSviewer, the analysis identifies key publication trends, productive institutions, influential journals, and emerging research themes. Results highlight a marked increase in publications since 2002, with peaks during the COVID-19 pandemic, reflecting growing concern over workplace stress and its implications. Prominent contributions stem from the University of Tokyo, the University of Melbourne, and key journals such as the International Journal of Environmental Research and Public Health. The analysis reveals burnout as a critical factor negatively affecting job performance, especially in healthcare settings, and underscores the relevance of coping strategies and mental health interventions. By mapping the intellectual landscape, this study offers valuable insights into the evolving relationship between burnout and job performance. These insights help inform future interdisciplinary research and support the development of evidence-based organisational strategies to improve employee well-being and productivity.*

Keywords: *Burnout, Job Performance, Emotional Exhaustion*

Introduction

Burnout, characterised by emotional, physical, and mental exhaustion due to prolonged stress, significantly affects employees across different sectors. Key dimensions of burnout encompass emotional exhaustion, depersonalisation, and reduced personal accomplishment (Dall'Ora et al., 2020). Research indicates that occupational burnout is associated with various factors such as demographics, work-related conditions, health status, and lifestyle choices (Jing et al., 2023). Line managers are crucial in detecting early signs of burnout among employees and taking preventive actions to mitigate its progression (Claeys et al., 2023). Additionally, healthcare workers, particularly in high-stress environments like the healthcare sector, are at a heightened risk of experiencing burnout, stress, and bullying, with nurses and paramedics being particularly vulnerable (Rypicz et al., 2023). Furthermore, burnout among healthcare workers, including those in lower-wage positions, is linked to changes in prescribed psychotropic medication and an increased likelihood of medication misuse, highlighting the importance of addressing burnout in this population (Hoopsick & Las, 2023). Studies on physicians emphasise the association between burnout and mental health issues like depression, anxiety, and suicidality, underscoring the need for interventions to prevent and manage burnout effectively (Ryan et al., 2023).

Meanwhile, job performance metrics play a crucial role in evaluating various aspects of workplace productivity, including quality, quantity, and contextual behaviours such as teamwork and communication (Bernales-Turpo et al., 2022). While traditional metrics focus on individual traits and states (Nunes et al., 2022), recent studies have explored novel approaches to assess job performance. For instance, research has shown a significant correlation between sleep behaviour, measured through online app interactions, and job performance in salespeople and athletes (Park et al., 2021). Additionally, researchers have proposed using competency tests based on case scenarios to track and enhance skills among neuro-oncology fellowship trainees, particularly in chemotherapy prescribing (Peters et al., 2022). However, the reliance on metrics, driven by competition, can perpetuate inequalities and epistemic injustices in research practices (Ma, 2022). Therefore, a comprehensive evaluation of job performance should consider a combination of traditional metrics and innovative approaches to effectively capture the multidimensional nature of performance.

Understanding the intricate relationship between burnout and job performance is paramount for enhancing employee well-being and organisational efficiency (Prentice & Thaichon, 2019). Research indicates that proactive burnout prevention measures can help prevent burnout, but high initial levels of burnout may hinder engagement in these behaviours over time (Otto et al., 2021). Furthermore, specific coping styles, including task-oriented and adaptive coping, serve as protective factors against burnout, whereas avoidance-oriented and maladaptive coping styles indicate burnout (Rossi et al., 2023). Additionally, job burnout has been associated with various somatic diseases, highlighting its detrimental impact on overall health and well-being (von Känel et al., 2020). By comprehensively understanding these dynamics, organisations can implement targeted interventions to mitigate burnout, enhance job performance, and promote a healthier work environment.

High-stress professions, including healthcare and education, have historically been associated with burnout, which is characterised by emotional exhaustion, depersonalisation, and diminished personal accomplishment (Dall'Ora et al., 2020). Studies have shown that burnout is prevalent among healthcare professionals, especially during pandemics like COVID-19, leading to increased work disengagement and emotional exhaustion (El Dabbah & Elhadi,

2023). Radzi et al. (2024) have identified age, educational background, work position, health status, lifestyle choices, and social networks as significant contributors to occupational exhaustion. The COVID-19 pandemic has exacerbated fatigue among physicians, with higher levels of emotional exhaustion being associated with home-related life changes. At the same time, specific demographics like first-generation immigrants have been shown to be protective factors (Otuonye et al., 2022). Clinical faculty members experiencing shift work during the pandemic have reported high levels of burnout and occupational fatigue, emphasising the need for interventions to support these professionals (Gilavand, 2022).

Research indicates a significant impact of burnout on job performance, aligning with theoretical frameworks like the Conservation of Resources (COR) theory and self-regulation theories (Lemonaki et al., 2021). Studies have consistently demonstrated a negative relationship between burnout and job performance metrics, particularly in healthcare settings during the COVID-19 pandemic (Corbeanu et al., 2023). Factors such as coping styles, work-related stressors, and social networks have been identified as influential in understanding and predicting burnout levels among employees, emphasising the importance of addressing burnout to maintain optimal job performance and overall well-being (Jing et al., 2023; Rossi et al., 2023). The findings underscore the need for interventions and support systems to mitigate burnout's detrimental effects on employees' cognitive and emotional resources, ultimately enhancing job performance outcomes.

This study aims to conduct a scientometric analysis to investigate the evolution of research on the relationship between exhaustion and job performance and publication patterns. Conducting such an analysis is essential for thoroughly understanding this domain. Moreover, it highlights influential publications, deepens scholarly insight, encourages academic collaboration, and offers direction for future research to further knowledge in this area while supporting environmental consciousness.

The following research questions are essential for improving the current comprehension of extant studies on the relationship between job performance and burnout:

1. What are the prevailing trends and patterns regarding the volume and characteristics of publications examining the link between burnout and job performance?
2. Which publication sources have demonstrated the highest productivity in disseminating research on this relationship?
3. What key research themes and subject areas have emerged within the scholarly discourse on burnout and job performance?
4. Which academic works have exerted the most significant influence on knowledge development in this field?
5. Which research institutions have significantly contributed to studying the relationship between burnout and job performance?

Methodology

A combination of scientometric techniques was employed to achieve this objective, including mapping analysis via VOSviewer and trend analysis using ScientoPy. Relevant data were extracted from the Scopus and Web of Science (WoS) databases, focusing specifically on publications addressing the relationship between burnout and job performance. The datasets were constructed using a robust set of keywords, as detailed in **Table 1**, and searches were conducted across the title, abstract, and keyword fields without imposing any time constraints. This data collection process was carried out on 18 July 2024.

Scopus and WoS were chosen due to their recognition as the premier bibliographic databases in academic and research environments, particularly for scientometric analysis (Abdullah & Sofyan, 2023). Both platforms are highly regarded for their comprehensive accessibility, sophisticated analytical capabilities, rich metadata, data reliability, and extensive coverage (Hafiar et al., 2024). The records that were retrieved were meticulously vetted to guarantee that they were in accordance with the study's inclusion criteria, with a specific emphasis on the relationship between job performance and burnout. Additionally, expert validation was implemented to verify the quality and relevance of the chosen publications.

For analytical and visualisation purposes, this study utilised both ScientoPy and VOSviewer. ScientoPy serves as a bibliometric analysis tool that facilitates the examination of critical components such as core research themes, prominent authors, contributing nations, and key publications (Abdullah & Sofyan, 2023). As a freely available, open-source software developed in Python, ScientoPy has gained widespread adoption within academic circles for scientometric research. A notable feature of the software is its robust pre-processing function, which helps to reduce potential bias in individual records (Ruiz-Rosero et al., 2019). This pre-processing stage enhances the overall precision, organisation, and interpretability of results derived from large-scale Scopus and Web of Science (WoS) datasets.

In parallel, VOSviewer was utilised to generate a co-occurrence map based on authors' keywords related to the relationship between burnout and job performance. This tool is vital in visually identifying core research themes, knowledge clusters, and intellectual structures within the field. The co-occurrence mapping offers valuable insights into the significant topics and scholarly conversations that have shaped global research on burnout and job performance (Abdullah, 2022b).

Table 1: Search Protocol for Data Retrieval

Database	Search Strategy	Records
Web of Science (WoS)	("Burnout" OR "Overwork" OR "Stress") AND ("job performance" OR "Work performance" OR "Job effectiveness")	1204
Scopus	("Burnout" OR "Overwork" OR "Stress") AND ("job performance" OR "Work performance" OR "Job effectiveness")	4944

Data Cleaning and Preparation

In order to eliminate redundant records and consolidate pertinent data, the datasets utilised in this investigation were subjected to a pre-processing phase utilising ScientoPy. As illustrated in **Figure 1**, the initial data collection yielded 6,148 unrefined entries retrieved from Scopus and Web of Science (WoS). An automatic document-type filtering process excluded about 501 articles (8.10%). Following this, 5,647 papers were retained; however, further screening revealed 746 duplicate records within the Scopus database, representing 13.20% of the dataset. After removing these duplicates, a final count of 4,901 publications was considered eligible for inclusion in the present analysis. Among these, 1,181 articles (24.10%) were sourced from WoS, while the remaining 3,720 articles (75.90%) originated from Scopus, including datasets comprising more than 100 entries, which enabled a robust and meaningful scientometric analysis.

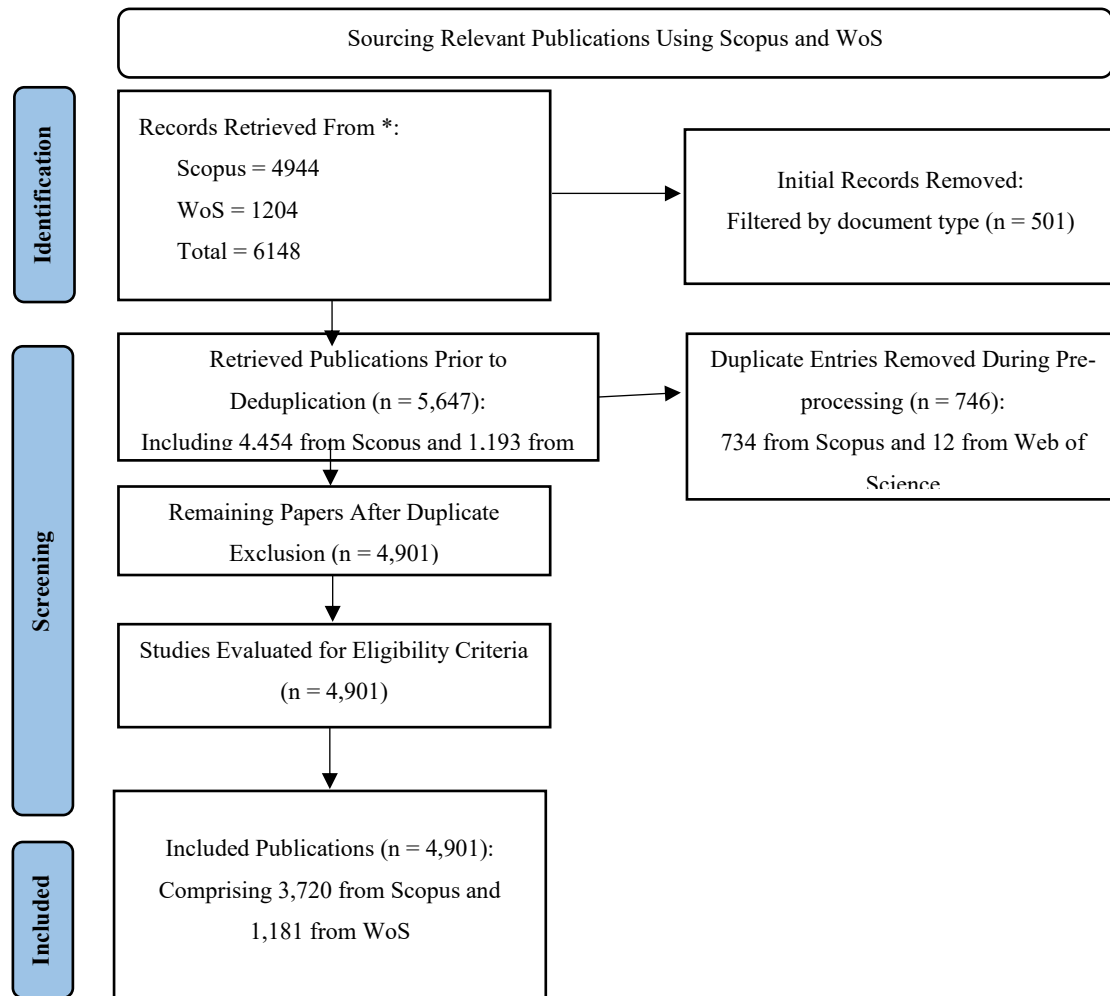


Figure 1: Flow Chart of Obtaining Datasets

Results

The findings of this investigation successfully respond to the research questions presented in the methodology section. Additionally, the results are substantiated by graphical visualisations generated using ScientoPy and VOSviewer.

Trends and Patterns in Scholarly Publications

Figure 2 depicts significant trends and patterns in the research publication on the relationship between burnout and job performance. A notable increase in publications over the years indicates a growing academic interest in this subject. The initial phase (1992-2000) demonstrates relatively low publication numbers, with a gradual increase commencing around 2000. This trend accelerates significantly in Scopus from 2002 to 2005, suggesting a surge in research activity or funding. Both databases exhibit exponential growth from 2010 to 2024, with Scopus exhibiting a more pronounced increase. The peak in approximately 2020 highlights a substantial rise in research output, potentially attributable to heightened awareness of mental health concerns in the workplace. A slight decline in WoS publications around 2023 is worth noting, which may indicate a temporary shift in research focus or alterations in indexing criteria. The consistently higher number of publications in Scopus than WoS suggests that Scopus may encompass a broader range of research outputs. These trends highlight the significance of addressing research gaps, such as disparities in database coverage, and emphasise the necessity

for future interdisciplinary research, open-access initiatives, and international collaborations further to investigate the intricate dynamics between burnout and job performance.

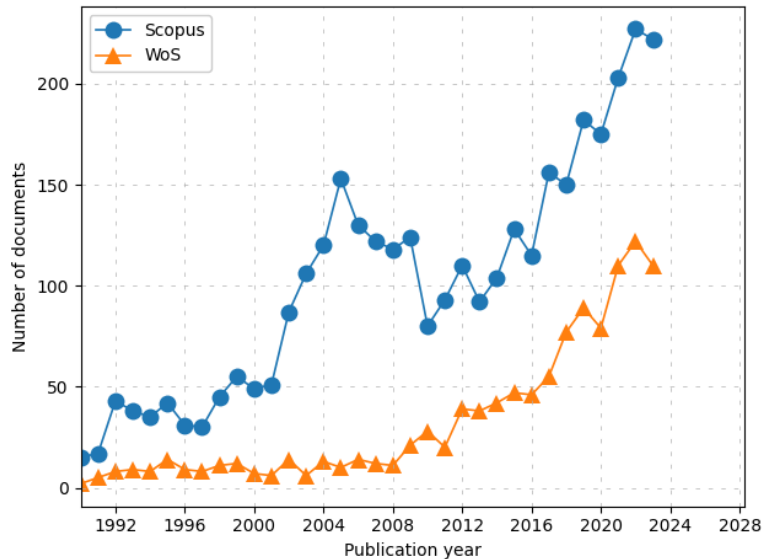


Figure 2: Growth Trajectory of Scholarly Publications

Figure 3 depicts the trends and patterns in publishing research on the correlation between burnout and job performance, classified by institutions. The "University of Tokyo, Japan" leads with the highest number of documents, where 23% of its publications were produced between 2022 and 2023, indicating recent involvement in this research area. Notably, "University of Michigan, United States" and "Vrije Universiteit Amsterdam, Netherlands" have not shown any recent publications, suggesting a lack of recent contributions in the past two years. In contrast, "Karolinska Institute, Sweden," "Finnish Institute of Occupational Health, Finland," and "Keio University, Japan" have demonstrated significant recent activity, with 33%, 25%, and 38% of their documents published in the last two years, respectively. This pattern highlights an active and growing interest in this field among these institutions. Furthermore, "University of Sydney, Australia" and "University of Melbourne, Australia" have also made notable recent contributions, with 18% and 38% of their publications occurring between 2022 and 2023, respectively. These trends emphasise specific academic institutions' changing focus and dedication to exploring the intersection between burnout and job performance, with a noticeable rise in recent scholarly activity from several key universities.

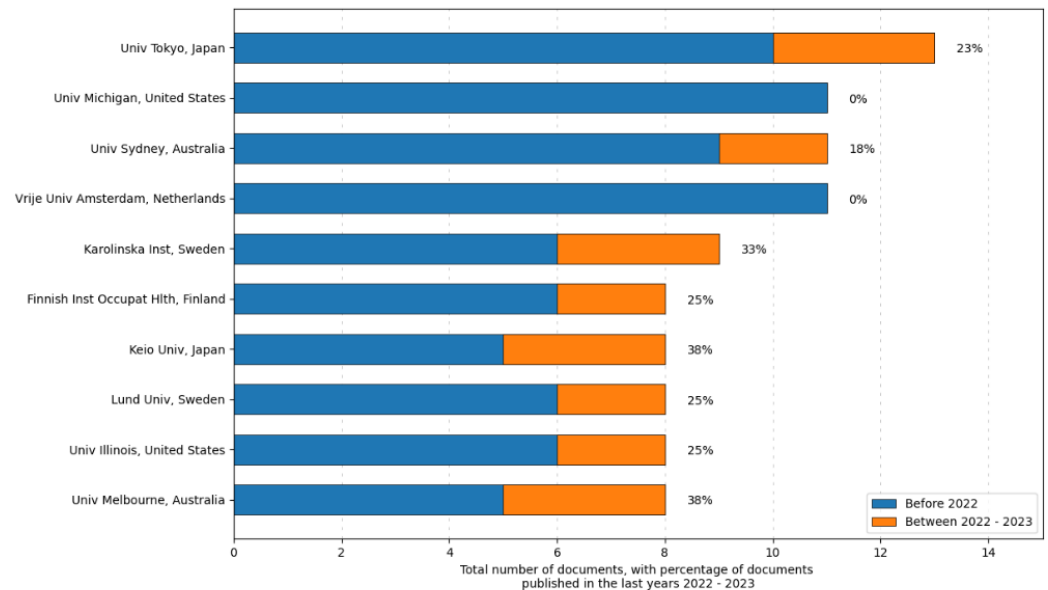


Figure 3: Institutional Contribution Trends

Source Titles

Figure 4 presents the source titles of publications related to the association between burnout and job performance. The source title that stands out is the "International Journal of Environmental Research and Public Health," which has the highest number of publications. Notably, 41% of its contributions were made between 2022 and 2023, indicating a recent surge in interest within this journal. Another journal with significant activity is "Frontiers in Psychology," with 42% of its publications occurring in the last two years, reflecting a growing focus on the topic. "PLoS ONE" and "Journal of Occupational and Environmental Medicine" follow, contributing 25% and 12% of their publications within the same recent period. In contrast, journals like "Journal of Occupational Health Psychology" and "Ergonomics" have shown minimal recent activity, suggesting a more stable and less dynamic interest over time. This analysis underscores the influential roles of specific journals in disseminating current research on burnout and job performance, particularly emphasising the substantial contributions of the "International Journal of Environmental Research and Public Health" and "Frontiers in Psychology."

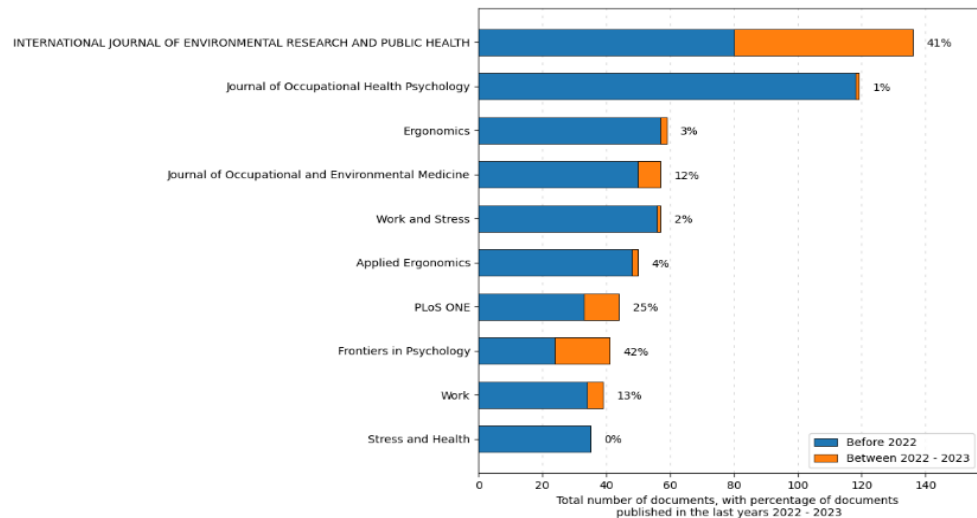


Figure 4: Leading Source Titles in the Field

Emerging Themes in Burnout and Job Performance Research

Figure 5 showcases emerging topics and themes in research on the correlation between burnout and job performance. It depicts the distribution of documents published before 2022 and between 2022 and 2023 across different keywords. The significant surge in publications concerning "COVID-19" (59%) underscores the profound impact of the pandemic on workplace dynamics, stress levels, and burnout. There has also been a notable increase in research on "work performance" and "job performance," with 30% and 26% of recent publications focusing on these areas, respectively. This indicates a heightened interest in comprehending the overall impact of burnout on job efficacy. The term "burnout" has experienced a considerable rise (21%), suggesting a growing focus on its direct consequences.

Furthermore, "mental health" (29%) and "nurses" (34%) are prominent themes, indicating a sector-specific research focus, particularly within the healthcare industry, where burnout is gravely affecting frontline workers. The continued emphasis on "stress" (15%) and "job stress" (13%) further highlights the significance of addressing stressors within the workplace. These trends reveal that current research is increasingly geared towards understanding and mitigating the effects of recent global challenges, such as the pandemic, on mental health and job performance. There is a particular emphasis on developing effective interventions to enhance workplace well-being and productivity.

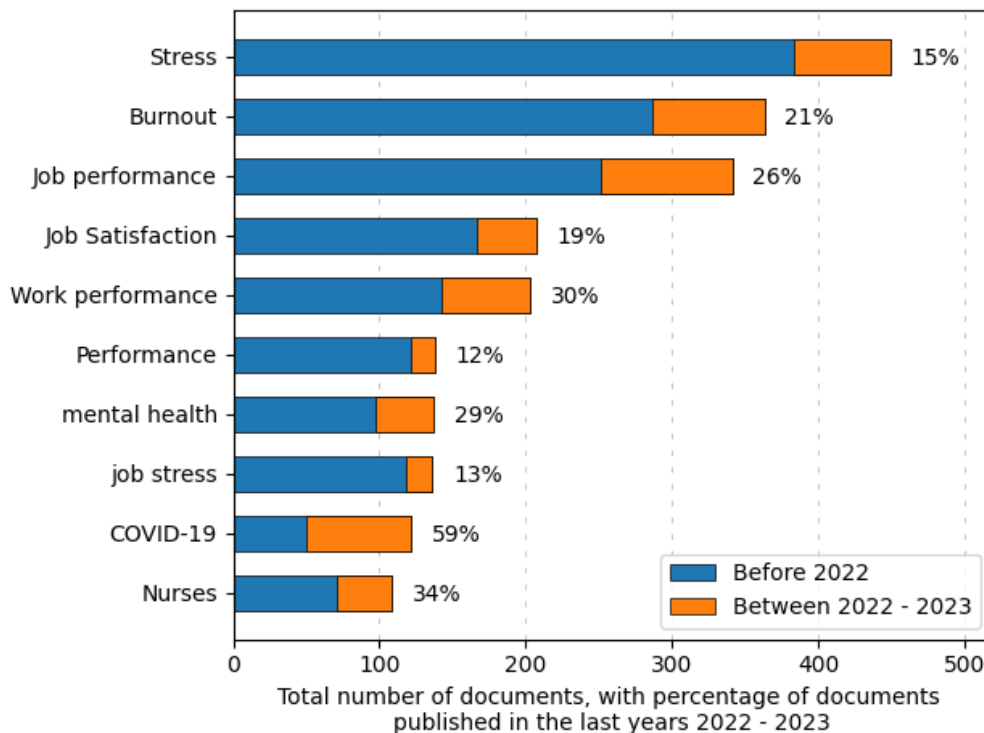


Figure 5: Trends in Emerging Research Themes

The overlay visualisation map (see **Figure 6**), created using VOSviewer, provides a comprehensive overview of the current state of research on the relationship between burnout and job performance. The map showcases the co-occurrence of keywords and their connections over time, which allows for identifying emerging topics and themes. Crucial themes such as "stress," "job performance," "burnout," and "mental health" are prominently interconnected, indicating their significant roles in this particular research domain. The visualisation demonstrates that recent research, denoted by colours closer to red, has increasingly focused on areas such as "COVID-19," "work performance," "nurses," "mental health," "job demands," "emotional exhaustion," and "work engagement." These areas reflect the contemporary challenges and health concerns in today's workplaces.

In addition to the aforementioned topics, terms like "work-family conflict," "occupational stress," "emotional intelligence," "mindfulness," and "resilience" also feature prominently in the visualisation. This suggests a growing interest in holistic and preventive approaches to managing burnout. By exploring these interlinked factors, researchers aim to develop comprehensive strategies that enhance job performance and employee well-being. The dense network of connections between these terms emphasises the multidisciplinary nature of research in this field. Insights from various disciplines such as psychology, healthcare, organisational behaviour, and human resource management contribute to a holistic understanding of burnout and its impact on job performance. Consequently, future research is likely to continue exploring these interrelationships and further developing strategies that address these interconnected factors, ultimately enhancing job performance and employee well-being.



Based on Table 2, highly cited publications, the most influential academic works on the relationship between burnout and job performance are identified through their citation counts. The study by Aiken et al. (2002) leads this field, titled "Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction," with 3,635 citations. This study highlights the critical impact of nurse staffing on burnout and job outcomes. Bakker et al. have made multiple influential works, including "Job demands-resources theory: Taking stock and looking forward" (2017) with 2,752 citations and "Job resources buffer the impact of job demands on burnout" (2005) with 1,463 citations. These works provide foundational frameworks for understanding the balance of job demands and resources. Maslach et al.'s (2016) work, titled "Understanding the burnout experience: Recent research and its implications for psychiatry," with 1,618 citations, offers profound insights into the burnout phenomenon and its broader implications. Other significant contributions include the review by West et al. (2018) on "Physician burnout: contributors, consequences and solutions" with 1,361 citations, underscoring the issue in healthcare, and Shanafelt's (2017) strategies for promoting engagement and reducing burnout with 1,060 citations. These works are pivotal in shaping the discourse around burnout and job performance, providing critical insights, theoretical models, and practical strategies for addressing burnout in various professional settings.

No.	Source	Title	Citation count	Document type
1.	(Breivik et al., 2006)	“Survey of chronic pain in Europe: Prevalence, impact on daily life, and treatment”	3952	Articles
2.	Aikenet al., 2002)	“Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction”	3635	Articles

No.	Source	Title	Citation count	Document type
3.	(Bakker et al., 2017)	“Job demands-resources theory: Taking stock and looking forward”	2752	Articles
4.	(Crant et al., 2000)	“Proactive behavior in organisations”	1653	Articles
5.	(Maslach et al., 2016)	“Understanding the burnout experience: Recent research and its implications for psychiatry”	1618	Articles
6.	(Bakker et al., 2005)	“Job resources buffer the impact of job demands on burnout”	1463	Articles
7.	(Bakker et al., 2008)	“Work engagement: An emerging concept in occupational health psychology”	1397	Articles
8.	(West et al., 2018)	“Physician burnout: contributors, consequences and solutions”	1361	Review
9.	(Baumeister et al., 2003)	“Does High Self-Esteem Cause Better Performance, Interpersonal Success, Happiness, or Healthier Lifestyles?”	1171	Articles
10.	(Wallace, 2009)	“Physician wellness: a missing quality indicator”	1147	Review
11.	(Zuberbier, 2018)	“The EAACI/GA α LEN/EDF/WAO guideline for the definition, classification, diagnosis and management of urticaria”	1100	Article
10.	(Shanafelt, 2017)	“Executive Leadership and Physician Well-being: Nine Organisational Strategies to Promote Engagement and Reduce Burnout”	1060	Review

Productive Institutions

Figure 7 showcases the institutions that have been most productive in researching the relationship between burnout and job performance. It presents the total number of documents published before 2022 and between 2022 and 2023. The University of Tokyo in Japan is a significant contributor, with 23% of its publications occurring in the past two years, indicating its active involvement in this research area. Similarly, Keio University in Japan and the University of Melbourne in Australia published 38% of their works between 2022 and 2023, highlighting their increasing contributions. The Karolinska Institute in Sweden (33%) and the Finnish Institute of Occupational Health (25%) also demonstrate noteworthy recent productivity, highlighting their influential roles. In contrast, institutions such as the University of Michigan and Vrije Universiteit Amsterdam have not published new works on this topic in the past two years, suggesting either a shift in research focus or different project timelines. This data emphasises the importance of these leading institutions in advancing our understanding of burnout and job performance, with a clear trend towards recent, impactful research driven by contemporary workplace challenges and mental health considerations.

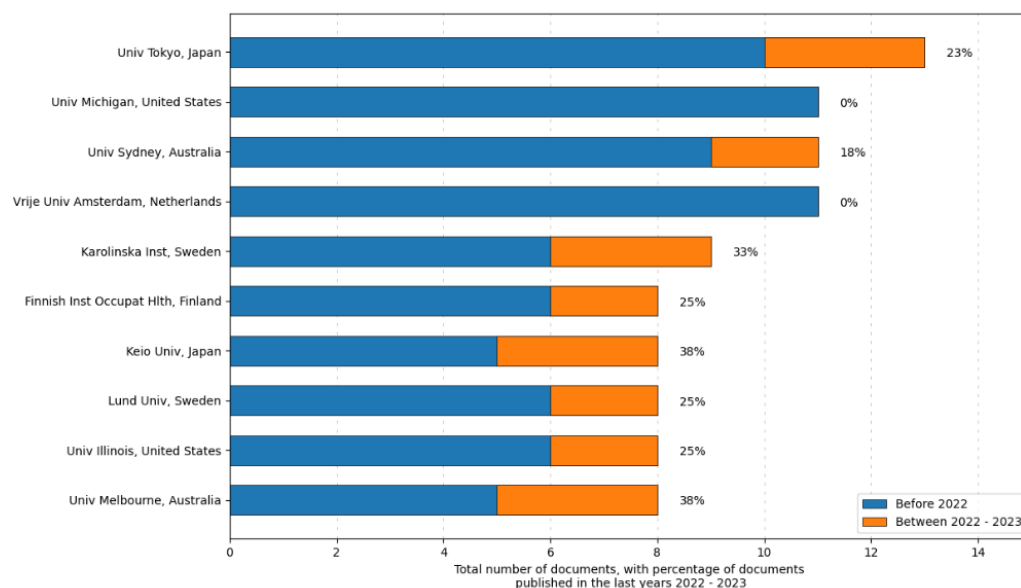


Figure 7: Top-Contributing Institutions in the Field

Discussion

Since 2002, there has been a significant increase in publications on burnout and job performance, reflecting a growing academic interest in workplace mental health and its impact on job performance. This surge spans various sectors, including healthcare, sports, academia, and community services. In healthcare, research on clinical nurses has shown that burnout interventions, particularly face-to-face mindfulness group interventions, can significantly alleviate burnout symptoms such as emotional exhaustion and depersonalisation. However, they are less effective in improving low personal accomplishment (Lee & Cha, 2023). The COVID-19 pandemic has further exacerbated burnout among healthcare workers, especially those involved in harm reduction and substance use disorder treatment. These workers face underfunding, resource shortages, and chaotic work environments, underscoring the necessity for models that fully encompass their unique experiences to ensure their well-being and the sustainability of their critical roles (Blais et al., 2023).

Studies on athletes have demonstrated that burnout is associated with increased adverse mental health outcomes, like depression and anxiety and decreased positive outcomes such as satisfaction and quality of life. However, evidence for physical health outcomes remains mixed (Glandorf et al., 2023). In the academic sector, administrative staff's job burnout has been linked to emotional job demands and a lack of job autonomy. Emotion regulation strategies, such as reappraisal, are crucial in mitigating these effects (Alam & Hassan, 2023). Additionally, excessive job demands among Polish academic teachers lead to occupational burnout and chronic fatigue, with stress-coping strategies and rest providing limited moderation (Springer et al., 2023). Among physicians, burnout is consistently associated with psychological morbidities such as depression, anxiety, and suicidality, highlighting the need for longitudinal research and targeted intervention strategies (Ryan et al., 2023).

The COVID-19 pandemic has catalysed a surge in research focusing on its impact on workplace dynamics and stress levels, with keywords like "COVID-19," "work performance," and "job performance" becoming increasingly prevalent in academic publications. For instance, a 30-

day diary study among 410 employees revealed that burnout exacerbates negative affect and reduces work engagement, particularly in response to acute stressors like learning about a COVID-19 diagnosis of a close friend or family member (Barroso Tapia, 2023). The Job Demands-Resources (JD-R) model further elucidates the burnout-job performance relationship by distinguishing between challenge and hindrance stressors. Hindrance stressors are more likely to lead to depression through increased exhaustion and disengagement from work (Baka et al., 2023). For example, operating room nurses face job-related traumatic events, such as sudden patient death and co-worker bullying, significantly increasing burnout, which in turn affects job performance and mental health (Bao, 2023).

Adequate workplace support, including managerial and interpersonal relationships, is essential for mitigating adverse effects on mental health and work performance. The overall shift in workplace practices and the challenges posed by the pandemic have been extensively documented, emphasising the need for adaptive strategies and future research directions to address these evolving dynamics (Rahmani & Zeng, 2023). Leading institutions such as the University of Tokyo, Keio University, and the University of Melbourne are at the forefront of exploring how burnout impacts various aspects of job performance and employee well-being. These studies underscore the critical need for continued research and intervention development to address burnout and its profound impact on job performance across various professional domains. For instance, a study on Peruvian healthcare workers found that burnout negatively predicts job performance, mediated by work engagement, which is positively influenced by professional self-efficacy and life satisfaction (Bernales-Turpo et al., 2022).

These findings highlight the multifaceted nature of burnout and its profound impact on job performance. The growing body of research emphasises the importance of supportive management, improved working conditions, and strategies to boost employee engagement and well-being. Addressing burnout requires a comprehensive approach that includes targeted interventions and continuous research to adapt to the evolving workplace dynamics and ensure the psychological well-being of employees across various sectors.

Conclusion

The relationship between burnout and job performance has been increasingly studied, with a notable rise in publications since 2002, particularly in journals like the International Journal of Environmental Research and Public Health and Frontiers in Psychology. Leading institutions such as the University of Tokyo and the University of Melbourne have significantly contributed to this growing body of research. The COVID-19 pandemic has intensified the focus on workplace dynamics, stress levels, and burnout, revealing that burnout adversely affects job performance across various sectors, including healthcare and academia. Highly cited works by Aiken et al. and Bakker et al. provide foundational insights into how job demands and resources impact burnout and performance. Recent research underscores the importance of addressing burnout through comprehensive strategies that enhance employee well-being and productivity, emphasising the interconnectedness of stress, mental health, and job performance.

Contribution and Novelty

This study offers valuable insights into how burnout relates to job performance by taking a closer look at the patterns and trends in published research over the last thirty years. Drawing on data from Scopus and Web of Science (WoS), it captures an inclusive picture of how this topic has been studied globally. Using tools like ScientoPy and VOSviewer, the analysis highlights emerging areas of interest, including the impact of COVID-19, mental health

concerns, and the challenges faced by frontline workers such as nurses. These findings help clarify where the research community is currently focused and where future studies might go. What sets this study apart is its effort to combine different fields from psychology and organisational behaviour to healthcare, to provide a complete understanding of the issue.

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