ORIGINAL ARTICLE

SCIENTOMETRIC ANALYSIS OF MENTAL HEALTH RESEARCH TRENDS AMONG UNIVERSITY LECTURERS

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ABSTRACT

This research delves into the dynamic landscape surrounding mental health issues among university lecturers, analyzing published articles from 2003 to 2022. The dataset encompasses 1,247 studies sourced from the Social Science Citation Index (SSCI) and Science Citation Index Expanded (SCIE) journals, acquired through a meticulous search of the Web of Science database. The investigation highlights "Nurse Education Today" as the most prolific journal, with McAllister M. emerging as the leading contributor within this field of study. Additionally, esteemed institutions such as Monash University and the University of London exhibit substantial publication outputs in this research domain. The novelty of this study lies in its employment of a scientometric approach to scrutinize mental health trends among university lecturers. By utilizing silhouette scores, the study identifies 13 distinct topic clusters, revealing robust interconnections across thematic areas. Additionally, the examination of recent keywords highlights a significant surge in research activity, particularly focusing on "teachers," indicating a concentrated upsurge in scholarly investigations over the past three years. This scientometric methodology offers a comprehensive understanding of the evolving research landscape and facilitates insights into diversified research pursuits and continuous cross-disciplinary integration within this domain.

Keywords: *Document citation analysis; mental health; network analysis; research trends; scientometric analysis; university lecturers*

INTRODUCTION

Working conditions significantly impact the well-being and performance of university lecturers. These conditions encompass various aspects such as workload, job security, classroom resources, administrative support, and access to professional development opportunities. Inadequate working conditions can lead to heightened stress, burnout, and diminished job satisfaction among lecturers, ultimately affecting their mental health. Lecturers are often tasked with juggling numerous responsibilities, including teaching, research, administrative duties, and academic advising. This demanding workload, particularly when combined with limited resources and support, can exacerbate the mental health challenges faced by these educators.

The mental health of university lecturers is a critical concern that should not be underestimated. The academic profession often involves navigating pressures related to research productivity, student evaluations, and career advancement, all of which can be stressors that contribute to mental health issues. The stigma surrounding mental health concerns in academia can further compound these challenges, as lecturers may be hesitant to seek help or openly discuss their struggles. Consequently, fostering a supportive and empathetic work environment is crucial for addressing the mental health needs of university lecturers. The mental health of university lecturers is inextricably linked to the potential for excellence within an academic institution. The well-being of lecturers impacts the quality of teaching and research, the institution's reputation, and ultimately, the success of its students. Recognizing and addressing the mental health needs of lecturers is not only a moral imperative but also a strategic imperative for universities aspiring to achieve and maintain a high level of academic excellence.

Previous investigations into the well-being of university lecturers have been conducted across various research domains, as exemplified by the works of Brewstera et al. (2022), Gulliver et al. (2018), Kataoka et al. (2014), Malik and Björkqvist (2018), Shen and Slater (2021), and Urbina-Garcia (2020). Nonetheless, a noticeable gap exists in the literature in the form of a comprehensive global statistical analysis, particularly within the realm of scientometric studies concerning the mental health of university lecturers. It is essential to emphasize this dearth of an all-encompassing worldwide statistical analysis concerning scientometric-based inquiries into the mental health trends of university lecturers. Scientometric analysis, as a method characterized by visualized statistical approaches for scrutinizing published literature, serves as a prominent means of identifying prevalent trends and potential research gaps

within a given scholarly database. Notably, this analytical approach encompasses a spectrum of software tools, including but not limited to CiteSpace, VOSviewer, ScientoPia, and HistCite.
The utilization of scientometric analysis offers readers the unique opportunity to delve into the historical trajectories of research endeavors and gain insights into potential future directions that research trends may traverse. In the context of this research endeavor, the following foundational inquiries guide our investigative efforts:

1. To what extent has scientometric analysis been employed in the exploration of mental health-related trends among university lecturers in the global academic landscape?
2. What are the prevailing publications, prominent keywords, and patterns that emerge from the existing body of scientometric studies within this specific domain?
3. Are there underexplored areas within the existing body of scientometric literature pertaining to the mental health of university lecturers?
4. What implications can be derived from the outcomes of scientometric analyses in terms of advancing the overall well-being and scholarship of university lecturers, and by extension, the broader higher education community?

This study aims to utilize scientometric analysis to identify trends and patterns in mental health research among university lecturers, ultimately contributing to a better understanding of the mental health challenges faced by this population. The prevalence of mental health issues among university lecturers is a growing concern, influenced by various factors such as workload, job security, and access to support services. Despite the existing literature on this topic, there is a noticeable gap in comprehensive global statistical analysis, particularly within the realm of scientometric studies concerning the mental health of university lecturers.

The mental health of university lecturers is a critical aspect of academic well-being and productivity, impacting teaching quality, research output, and overall institutional success. Previous research, as exemplified by Brewstera et al. (2022), Kataoka et al. (2014), Malik and Björkqvist (2018), Shen and Slater (2021), and Urbina-Garcia (2020), has highlighted the multifaceted challenges faced by lecturers in maintaining their mental health amidst the demands of academia. However, the utilization of scientometric analysis in this context offers a unique opportunity to systematically analyze and visualize the global landscape of mental health research among university lecturers. Scientometrics provides a structured approach to identify prevailing publications, prominent keywords, and underexplored areas within the existing body of literature, facilitating insights into potential future research directions and policy considerations. By addressing critical questions regarding the utilization of scientometric analysis in exploring mental health trends among university lecturers, this study contributes to advancing scholarship and fostering a supportive academic environment conducive to the well-being of lecturers and the broader higher education community.

METHODS

A scientometric examination was carried out on the most recent scientific output, encompassing published papers from the past two decades. The research framework employed for this study is depicted in Figure 1.

Article Search

The current study made use of the extensive Web of Science database, which encompasses a vast repository of more than 22,000 scholarly journals sourced from reputable publishers, including prominent entities such as Elsevier, Springer, Wiley, and Taylor and Francis. The utilization of this database facilitated an exhaustive exploration of articles pertaining to the mental health of university lecturers. In order to ensure comprehensive coverage of relevant publications, the search was executed on September 6, 2023, employing carefully selected search terms designed to encompass a wide spectrum of topics related to the well-being of university lecturers. These keywords were required to be present in the article's title, keywords, or abstract to align with the search criteria. The Boolean search string utilized for this purpose is detailed below: TS=((("Teachers") OR ("Lecturers") OR ("Educators") OR ("Professors") OR ("Tutors") OR ("Pedagogues") OR ("Academics") OR ("Academicians") OR (“Academic staffs”) AND (("health") OR ("wellness") OR ("mental health") OR (“mental wellness”)) AND (("universities") OR ("higher institutions")))

Eligibility Criteria

Inclusion Criteria

Our subsequent analyses were restricted to articles published in peer-reviewed journals within the Web of Science database and authored in the English language.

Exclusion Criteria

In our research endeavor, as depicted in Figure 1, we imposed stringent criteria for article inclusion in our analysis. Given that the current year is 2023, acquiring a complete dataset for all articles published within this year may not be feasible. Waiting for the entirety of the year's data to become available and validated can introduce unwarranted delays in conducting our analysis. Therefore, we opted to exclude data from the year 2023. The study exclusively

considered data spanning from 2003 to 2022, a timeframe deemed sufficient to attain the requisite maturity for our investigation.

Furthermore, articles failing to meet the criteria of original research, those not published in English-language journals, or those lacking a rigorous peer-review process were also excluded from our study. Consequently, research materials such as proceedings papers, reviews, book reviews, abstracts, editorial materials, letters, and news articles were removed from our analysis. The application of these exclusion criteria ensured that our analysis was confined to high-quality, peer-reviewed, and original research articles from reputable academic sources within the domain of interest.

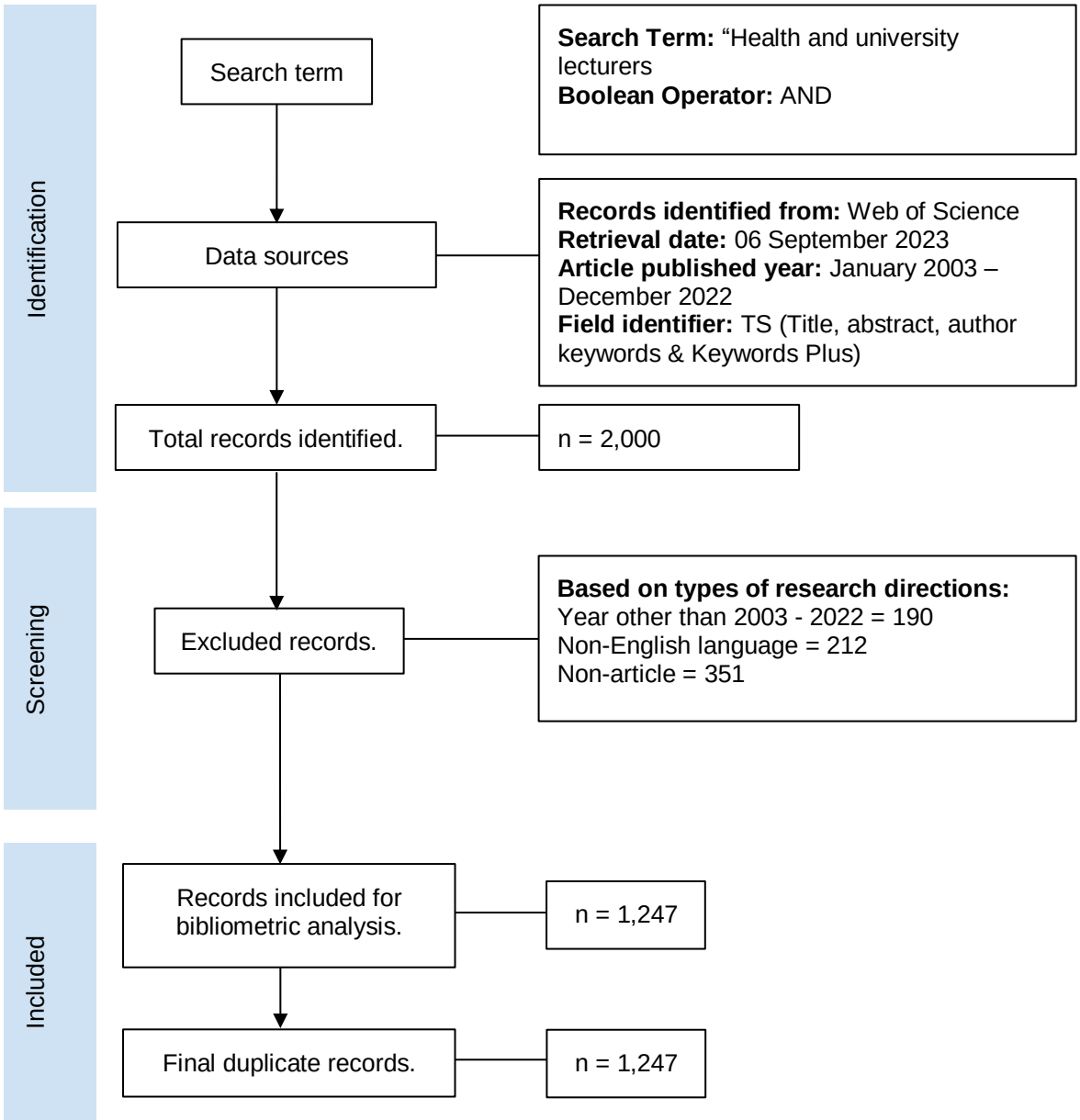

Figure 1. Methodological framework employed in the present study

Data Analysis

The scientometric analysis was conducted using CiteSpace V version 6.2.R4, Advanced, tailored for the 64-bit Windows operating system. CiteSpace is a widely recognized tool known for its capabilities in data mining and visual synthesis of research data sourced from the Web of Science. Its features allow for the systematic organization and analysis of acquired data, including co-citation analysis and identification of citation bursts. Microsoft Office Professional Plus 2019, incorporating Excel, was utilized alongside CiteSpace for data organization and further analysis.

The selection of CiteSpace was justified due to its reputation as a robust tool for scientometric analysis, particularly in the context of exploring scholarly connections and trends within specific domains. Its ability to perform co-citation analysis and detect citation bursts aligns well with the objectives of this study, which involve identifying research associations, pivotal keywords, and influential contributions within the domain of mental health among university

lecturers. Additionally, the compatibility of CiteSpace with the Web of Science database ensures the extraction and analysis of relevant scholarly literature, enhancing the validity and reliability of the findings derived from the scientometric analysis.

Co-citation analysis, a quantitative technique employed for the purpose of delineating scientific knowledge and its interconnections, served as the methodological cornerstone for identifying research associations and trends within specific domains, research hubs, and scholarly linkages. Co-citation instances manifest when two distinct sources are recurrently cited jointly in other scholarly documents, thus indicating semantic affinity. The assessment of variables' quality was facilitated through the examination of degree, centrality, and sigma values.

To discern pivotal keywords in the research domain, citation burstiness was strategically deployed. This approach involves the identification of abrupt spikes in citation frequency pertaining to particular articles, visually represented by conspicuous red rings within the network diagram. The detection of citation bursts not only sheds light on temporal dynamics but also signifies heightened scholarly interest surrounding select articles. This methodological approach serves the purpose of unveiling influential contributions and noteworthy subjects characterized by substantial citation activity.

In addressing the overarching research inquiries, we harnessed descriptive analyses to present trends in publications, notable authors, leading academic institutions, influential journals, and geographical contributions. These analyses were thoughtfully visualized using Excel. To establish linkages between research domains and specialties, we employed a dual-map overlay technique. Additionally, the burstiness metric was applied to pinpoint influential publications, discern significant keywords, and delineate prominent research trajectories. Taken as a whole, this analytical methodology equips researchers with a comprehensive understanding of critical domains, research focal points, and impactful articles that have left discernible imprints within the realm of scholarly discourse.

RESULTS

Descriptive Analysis

Publication Trends

Figure 2 illustrates how the number of research articles about the mental health of university lecturers has changed over the years. We collected data from the Web of Science Core Collection database, totaling 1247 articles. The trend shows a consistent increase in publications. In 2003, only four articles were published, and until 2007, there were fewer than 20 publications each year. However, starting in 2008, we observed a steady rise in the number of articles. From 2008 to 2016, there was an average of 38.6 articles per year, and from 2017 to 2022, this increased to an average of 142 articles per year. The peak year was 2022, with 247 articles published. These findings highlight the growing interest and research activity in the field of university lecturer mental health.

Analyzing the content of the publications regarding the mental health of university lecturers can reveal emerging themes, research gaps, and potential areas for future investigation. Here's a thematic analysis based on the trends observed in the research articles:

1. **Prevalence and Nature of Mental Health Issues**: Many publications likely address the prevalence and nature of mental health issues among university lecturers. Themes may include exploring the types of mental health challenges faced by lecturers (e.g., stress, burnout, anxiety, depression), their causes, and the impacts on lecturers' well-being and professional performance.
2. **Factors Contributing to Mental Health Challenges**: Research may delve into the various factors contributing to mental health challenges among university lecturers. This could encompass workload, job insecurity, lack of institutional support, role ambiguity, work-life balance issues, organizational culture, and stigma associated with seeking help.
3. **Interventions and Support Mechanisms**: Another theme could involve examining interventions and support mechanisms aimed at promoting mental health and well-being among university lecturers. This may include studies evaluating the effectiveness of mindfulness programs, counseling services, peer support networks, workplace policies, and organizational interventions in mitigating mental health challenges.
4. **Professional Identity and Role Strain**: Some publications may explore the intersection of professional identity and mental health among university lecturers. This could involve investigating the impact of role strain, conflicts between teaching and research roles, and identity challenges on lecturers' psychological well-being.
5. **Cultural and Contextual Factors**: Research may also consider cultural and contextual factors influencing mental health issues among university lecturers. This could include cross-cultural comparisons, examination of regional differences in stressors and coping mechanisms, and the role of cultural attitudes towards mental health in shaping lecturers' experiences.
6. **Resilience and Coping Strategies**: Publications may highlight resilience factors and coping strategies employed by university

lecturers to manage mental health challenges. This could involve exploring individual-level factors (e.g., personality traits, coping styles) and contextual resources (e.g., social support, professional development opportunities) that promote resilience and well-being.

7. **Intersectionality and Diversity**: An emerging theme may involve examining the intersectionality of mental health challenges with other dimensions of diversity, such as gender, race, ethnicity, age, and socio-economic status. This could shed light on how multiple identities intersect to shape lecturers' experiences of mental health and inform tailored support interventions.

Identifying these emerging themes can help researchers pinpoint gaps in the existing literature and prioritize areas for future investigation. Additionally, it can inform the development of holistic approaches to supporting the mental health and well-being of university lecturers, ultimately contributing to a healthier and more sustainable academic environment.

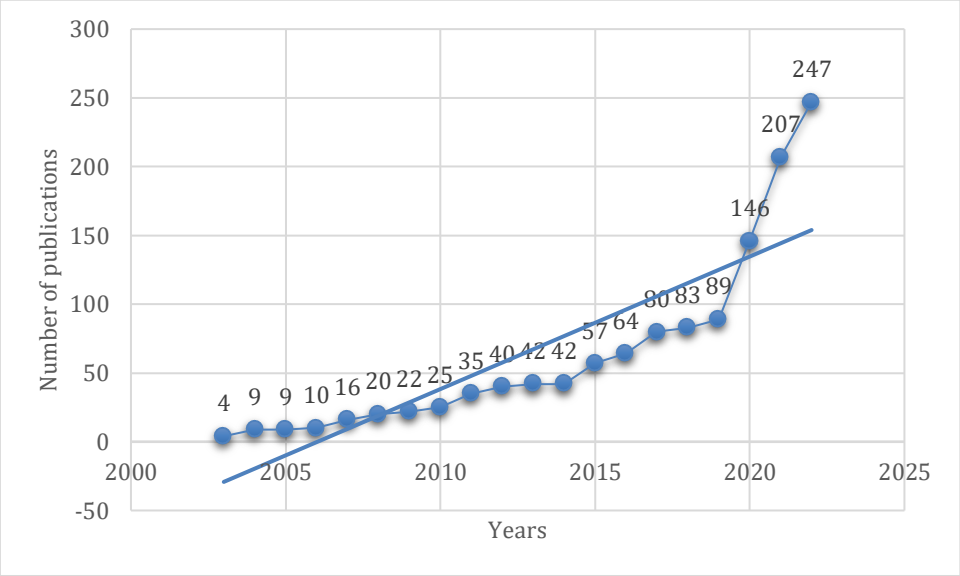

Figure 2: Annual Research Articles on Mental health of University Lecturer (2003-2022)

Productive Journals

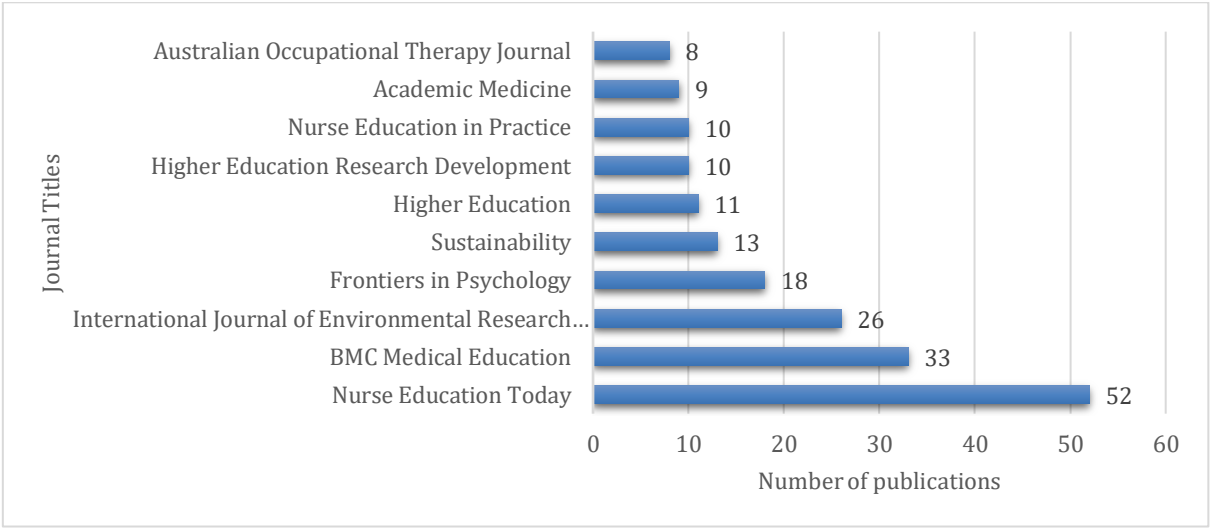

Figure 3: Publications in the Top Ten Journals (2003-2022).

Figure 3 presents an overview of research articles published within the time frame of 2003 to 2022, focusing on the top ten journals based on publication volume. Within our dataset encompassing 717 journals, specific attention was directed towards these select journals, revealing their notable contributions to the field.

Topping the list, Nurse Education Today stands out with the highest publication count, boasting 52 articles dedicated to the subject matter. Following closely, BMC Medical Education secures the second position with a commendable output of 33 articles. The International Journal of Environmental Research and Public Health occupies the third rank, featuring 26 articles.

Productive Authors

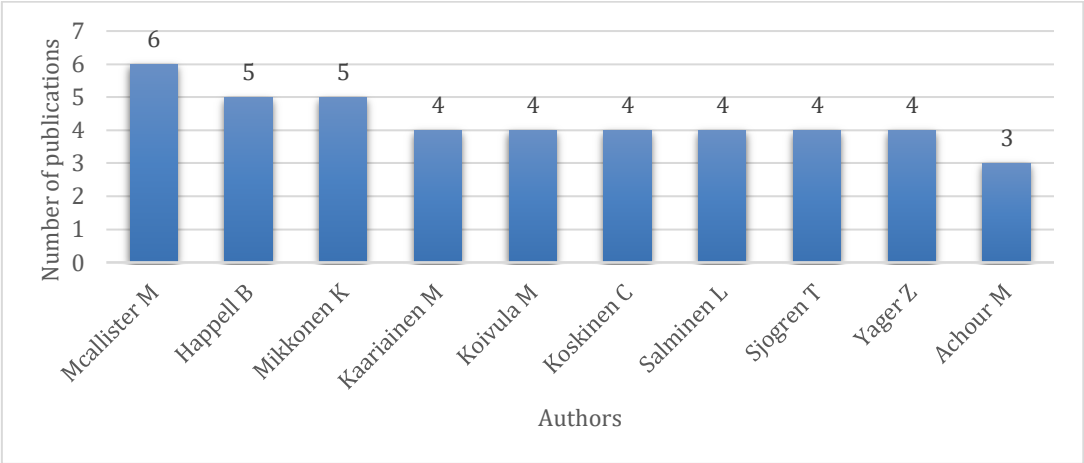

Figure 4: Prolific Authors in the Field of University Lecturer Mental health (2003-2022).

Figure 4 delineates the preeminent authors who have made notable scholarly contributions to the study of mental health concerning university lecturers. Amid a comprehensive pool of 4,954 authors, a select cadre comprising 274 individuals (constituting 5.53% of the total) has displayed a noteworthy dedication to this subject, warranting recognition. At the helm of this esteemed list stands McAllister M., who emerges as the most prolific contributor with a remarkable tally of 6 authored publications. In close pursuit are Happell B. and Mikkonen K., each having substantiated their scholarly commitment with 5 published articles. These authors exemplify a sustained and commendable dedication to advancing the research discourse surrounding the mental health of university lecturers.

Top Institutions

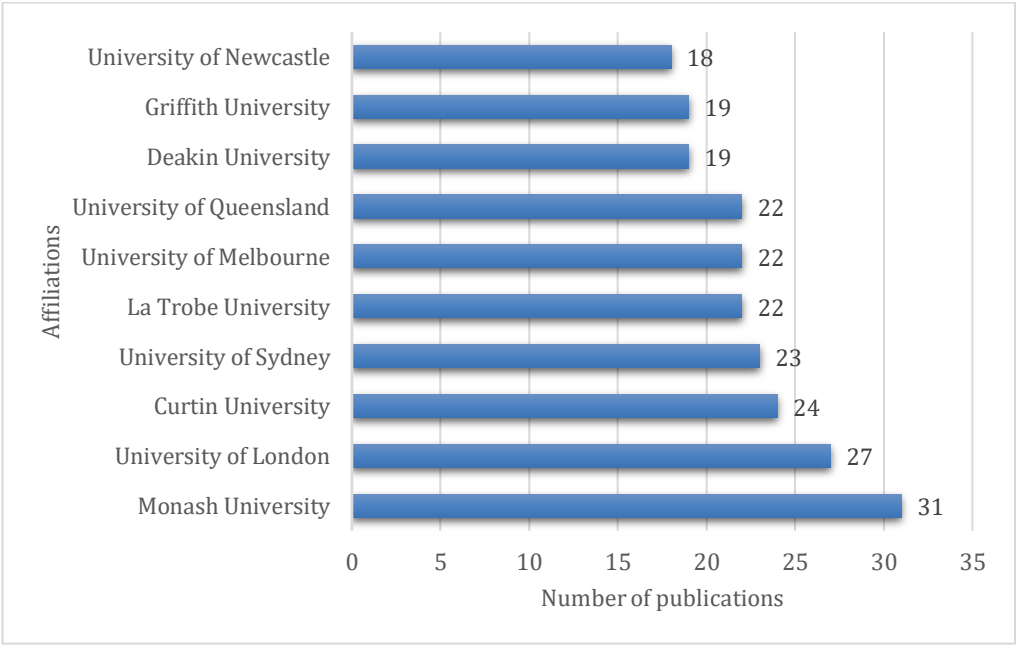

Figure 5: Institutional Publication Rankings in University Lecturer Mental health Research (2003-202

In Figure 5, we present an assessment of 1,972 institutions, meticulously ranked according to their aggregate publication output in the domain of university lecturer mental health research. This segment of the analysis spotlights the top 10 institutions distinguished by their scholarly productivity. Prominently, Monash University emerged as the preeminent institution in this regard, substantiating its scholarly prominence with a commendable total of 31 publications. Following closely, the University of London secured the second position, wielding a noteworthy influence with 27 published works. Noteworthy recognition also extends to Curtin University, occupying the third slot with a substantial contribution, marked by 24 publications.

Regional Distribution

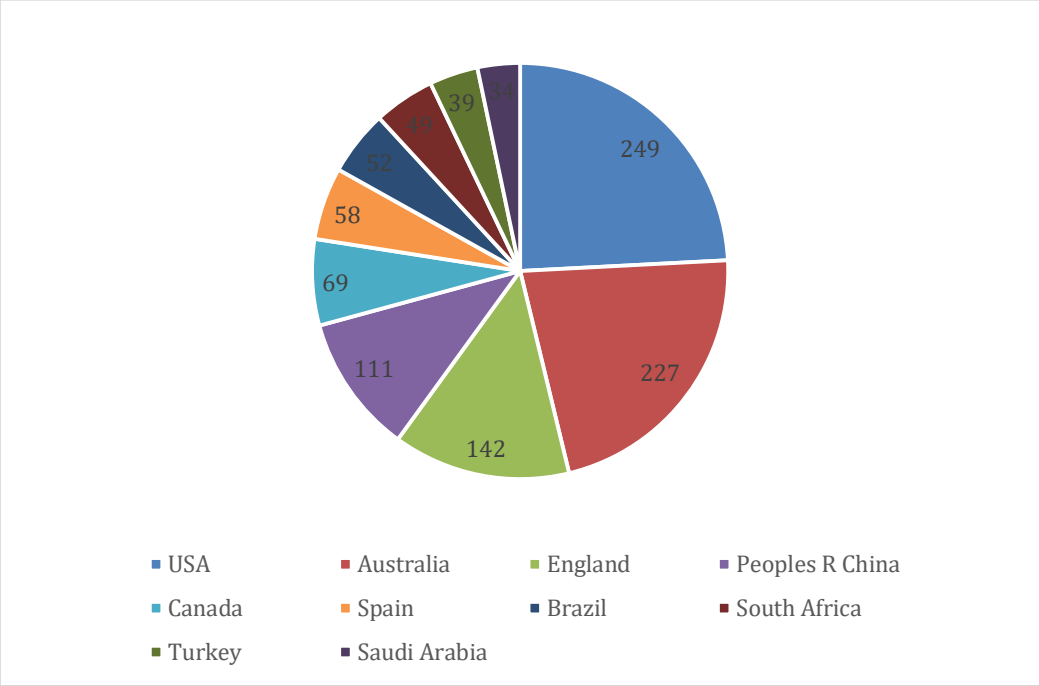

Figure 6. Number of publications published between 2003 and 2022 from the top 10 countries.

Figure 6 illustrates the hierarchical distribution of research publications spanning the years 2003 to 2022, focusing on the mental health of university lecturers. Notably, the top ten countries/regions collectively accounted for 58.7% of the total publications within this scholarly domain, encompassing a wide array of academic contributions from 113 countries.

Leading the pack in terms of research output was the United States of America (USA), with an impressive total of 249 publications. Following closely behind, Australia secured the second position, boasting a substantial output of 227 publications, while England claimed the third position, with a notable count of 142 publications.

Scientometric analysis

Dual-Map Overlay

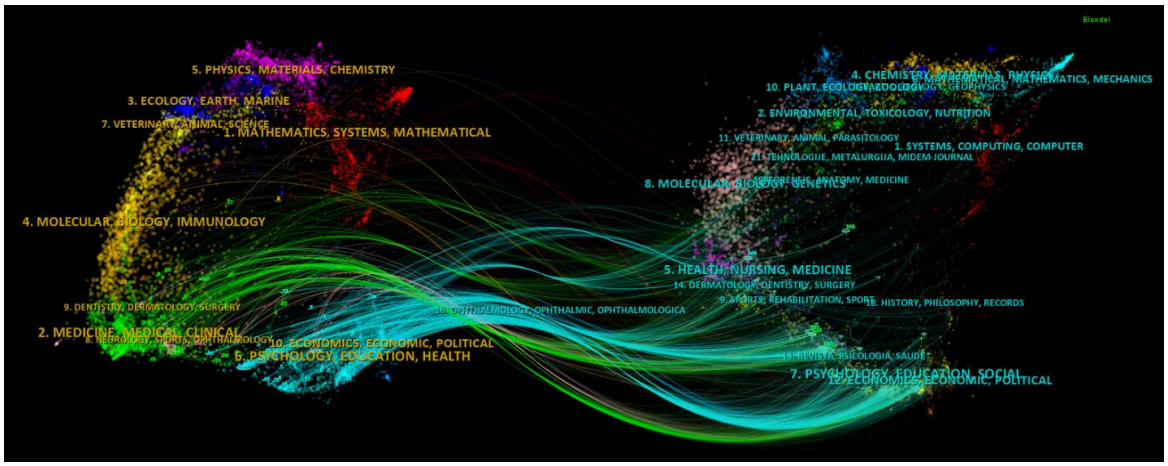

Figure 7. Dual-map overlay on the mental health of university lecturers related research

Figure 7 displays a dual map overlay that visually represents the landscape of research related to the mental health of university lecturers. The left nodes on the map represent individual articles related to this topic, while the right nodes on the map represent references to these

articles. To show the importance of these articles, the map uses oval shapes called ellipsoids. The size of these ellipsoids reflects how many times the articles have been cited and how many specialized journals focus on the mental health of university lecturers. The lines connecting the articles show the number of times they have been cited, with thicker lines indicating more citations.

The map reveals that research on the mental health of university lecturers covers a wide range of subjects, including Health, Psychology, Education, Economics, Mathematics, Systems,

and Political Science (as shown in Figure 7). On the other hand, the articles that are cited most often come from fields like Social Sciences, Health, Nursing, Education, Systems, Psychology, Computing, History, Political Science, Medicine, Philosophy, and Economics. In summary, Figure 7 provides a visual overview of the scholarly landscape in the field of the mental health of university lecturers. It helps us understand which subfields are prominent, how often articles are cited, and how this research connects to various academic disciplines.

Co-Citation Analysis

Author Co-Citation Analysis

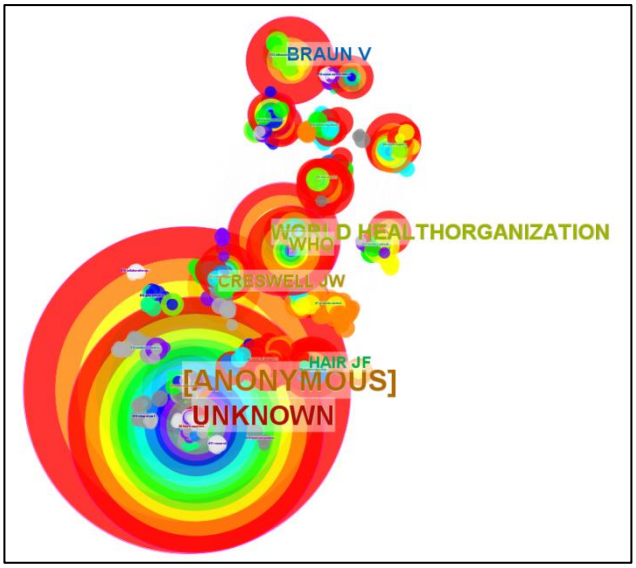

Figure 8. The knowledge maps for the author's co-citation analysis

Table 2. Top ten most influential authors in the mental health of university lecturers-related research based on sigma scores.

Authors (year)	Degree	Centrality	Sigma
Frenk J. (2013)	15	0.05	1.33
Freire P. (2013)	20	0.06	1.22
Kinman G. (2019)	23	0.04	1.16
Graneheim U.H. (2015)	23	0.05	1.16
Maslach C. (2019)	13	0.03	1.12
Bandura A. (2019)	10	0.03	1.12
Department of Health (2003)	21	0.03	1.1
Schaufeli W.B. (2018)	15	0.02	1.07
Zhang Y. (2019)	7	0.02	1.07
Lincoln Y.S. (2014)	13	0.02	1.06

The co-citation network analysis of authors in the field of mental health of university lecturers-related research yielded a network comprising 1035 nodes and 3083 connections, demonstrating a network density of 0.0058. In Figure 8 and Table 2, we present the top 10 authors within this field, ranked based on their sigma scores. Frenk J. (2013), affiliated with the University of Miami, USA, emerges as the most influential author in the realm of mental health of university lecturers-related research, attaining a sigma score of 1.33. Following closely, the second and third most influential authors in this field are Freire P. (2013) and Kinman G. (2019) with sigma scores of 1.22 and 1.16, respectively. These sigma scores reflect the significance and impact of these authors' contributions to the scholarly discourse in this specific domain.

Journal Co-Citation Analysis

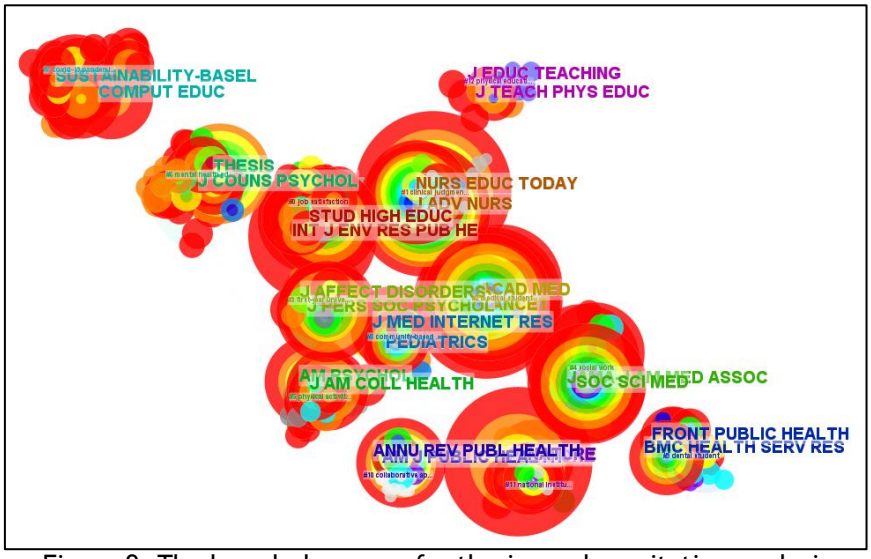

Figure 9. The knowledge maps for the journal co-citation analysis

Table 3. Top ten journals in the mental health of university lecturers-related research based on sigma scores.

Publication Title	Degree	Centrality	Sigma
Journal of Advanced Nursing	32	0.06	2.77
British Medical Journal	62	0.15	2.27
The Journal of the American Medical Association	42	0.1	1.97
Academic Medicine	42	0.07	1.63
Journal of Nursing Education	33	0.05	1.59
The Journal of American College Health	46	0.1	1.57
American Journal of Public Health	40	0.08	1.55
The International Journal of Nursing Studies	29	0.04	1.36
American Journal of Preventive Medicine	33	0.06	1.33
Medical Education	52	0.09	1.3
Annual Review of Public Health	41	0.08	1.29

The analysis of the co-citation network has yielded valuable insights into the interconnectedness of academic journals within the specialized field of mental health of university lecturer-related research. This network comprises 750 unique journal nodes, connected by a total of 2,814 links, indicating the scholarly relationships among these journals. The calculated network density of 0.01 suggests that the connections between journals are relatively sparse. Notably, the Journal of Advanced Nursing (ISSN 1365-2648) emerges as the most influential and prominent journal within this field. Its remarkable sigma score of 2.77 reaffirms its substantial impact and authoritative position in shaping the discourse of mental health of university lecturers-related research.

Closely following is the British Medical Journal (ISSN 0959-8138), which also holds significant influence within the field, with a degree score of 62. Moreover, its relatively higher centrality score of 0.15 indicates that it serves as a crucial hub, fostering substantial connections among other journals. While its sigma score of 2.27 falls slightly below that of the Journal of Advanced Nursing, it underscores the notable influence of the British Medical Journal within the academic community.

Finally, securing the third position as an influential journal in the mental health of university lecturers-related research is The Journal of the American Medical Association (ISSN 1108-4952). With a degree score of 42, this journal establishes a significant number of co-citations with its peers, contributing to its recognition. While its centrality score of 0.1 suggests a somewhat less central role compared to the British Medical Journal, its sigma score of 1.97 still highlights the journal's substantial influence and valuable contributions to the research domain.

Document Co-Citation Analysis

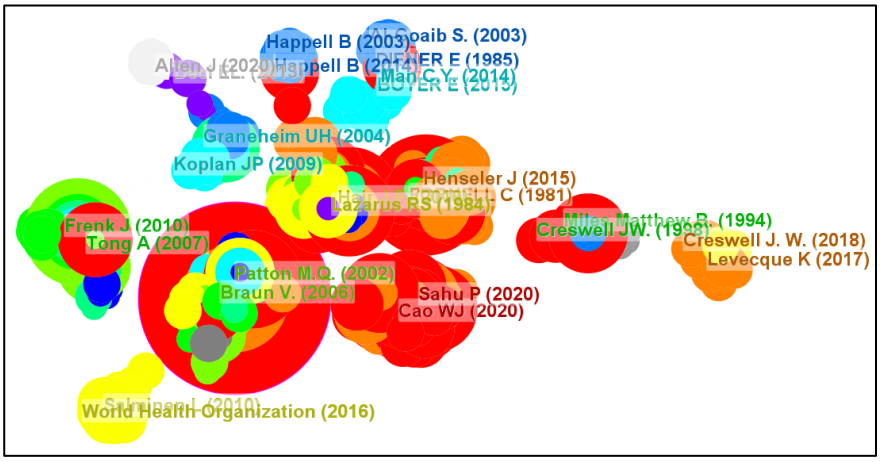

Figure 10. The knowledge maps for the document co-citation analysis

Table 4. Top ten articles in mental health of university lecturer-related research based on sigma scores.

Author (year)	Degree	Centrality	Sigma
Frenk J (2010)	9	0.04	1.28
Graneheim UH (2004)	17	0.04	1.17
World Health Organization (2010)	7	0.02	1.08
Braun V. (2006)	23	0.18	1
Singapore Department of Statistics Census (2002)	15	0	1
Ministry of Health (2001)	15	0	1
Tok Med Drug Ind (1997)	15	0	1
Kihasa (2001)	15	0	1
Min (2002)	15	0	1
Gov Hong Kong (2000)	15	0	1

Figure 10 presents the results of document co-citation network with 726 nodes, 1453 connections, and a density of 0.0055. Table 4 illustrates the resulting network diagram, which specifically focuses on articles with sigma scores surpassing 1. From the analysis, only three articles has sigma scores met or exceeded the predetermined threshold, signifying their significant impact within the domain of mental health of university lecturer-related research. One publication that emerged as the most influential article is “Health Professionals for a New Century: Transforming Education to Strengthen Health Systems in an Interdependent World” authored by Frenk et al (2010). This influential work, featured in the Lancet journal, attained a notable sigma score of 1.28. Moreover, it garnered a degree score of 9, indicating a substantial number of co-citations, and a centrality value of 0.04, signifying its pivotal position within the network. Additionally, the other highly influential articles were identified, with the sigma score of 1.17. This article was published in Nurse Education Today, further emphasizing its significance in the field of the mental health of university lecturer-related research.

Cluster Analysis

The examination of document groupings has yielded significant findings with regard to the Modularity Q Index and Mean Silhouette metrics, which have exhibited values of 0.9126 and 0.9636, respectively. These metric values, surpassing the established average thresholds, suggest a high degree of reliability and consistency within the network being scrutinized. The analysis has effectively identified and delineated 13 distinct clusters comprising interconnected documents. Visual representation of these clusters is provided in Figure 11, where they are depicted as a horizontal line, along with cluster labels placed on the right side. These clusters have been numbered and arranged in descending order based on their sizes, with the largest cluster denoted as #0. The temporal evolution of each cluster is illustrated by a solid yellow line encompassed within its boundaries. The process of assigning labels to these clusters was facilitated by employing a text mining and keyword analysis algorithm embedded within the CiteSpace software. The labels were determined through the utilization of a statistical measure known as log-likelihood ratio (LLR)

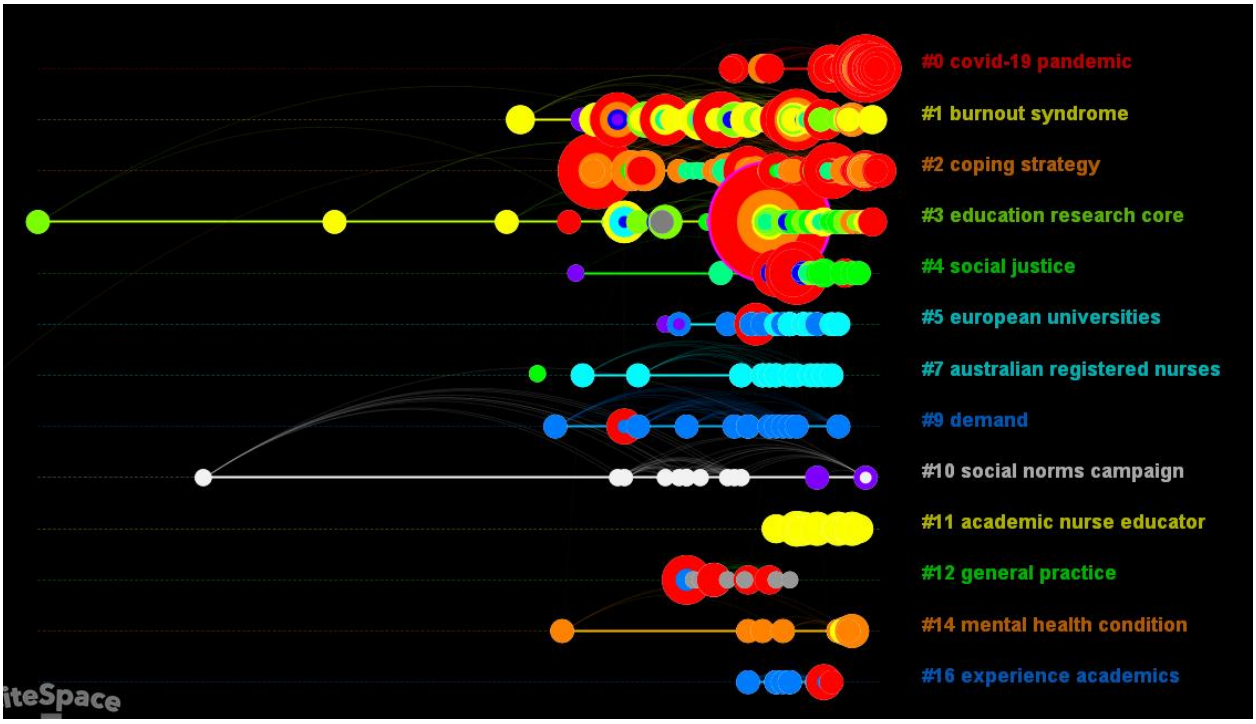

Figure 11. Summary of the identified top 13 document cluster lifetimes (solid lines).

Table 5a. Top 13 group clusters based on the "mental health and university lecturer" keyword.

ClusterID	Size	Silhouette	Label (LLR)	Average Year
0	61	0.957	Covid-19 Pandemic	2018
1	58	0.961	Burnout Syndrome	2003
2	54	0.926	Coping Strategy	1989
3	47	0.945	Education Research Core	2002
4	25	0.987	Social Justice	2009
5	22	0.99	European Universities	2007
7	16	0.957	Australian Registered Nurses	2004
9	13	0.995	Demand	2000
10	13	0.999	Social Norms Campaign	1992
11	13	1	Academic Nurse Educator	2014
12	12	1	General Practice	2000
14	10	0.995	Mental Health Condition	2009
16	10	0.993	Experience Academics	2009

Table 5 presents the top 13 group clusters based on the keyword "mental health and university lecturers" where each cluster represents a distinct research topic. The size of each cluster indicates the number of publications associated with it. The table highlights the top 13 clusters that have emerged from this analysis. Each cluster represents a group of publications that share common themes or topics related to mental health and university lecturers. The size of each cluster is indicated in terms of the number of publications it contains. Notably, Cluster #0 is the largest, encompassing a total of 61 publications, whereas Cluster #16 is the smallest, comprising only 10 publications.

This information gives us a sense of the distribution of research across different topics within the broader theme. Table 5 also provides silhouette scores for each cluster, ranging from 0.926 to 1.000. These scores are a measure of the similarity or homogeneity within each cluster. Silhouette scores fall within the range of -1 to 1, with values above 0 indicating a high level of similarity among the publications within a cluster. In this context, the scores suggest that the publications grouped in these clusters share significant thematic similarities, reinforcing the validity of the clustering results.

Burstness Analysis

Document Burstness Analysis

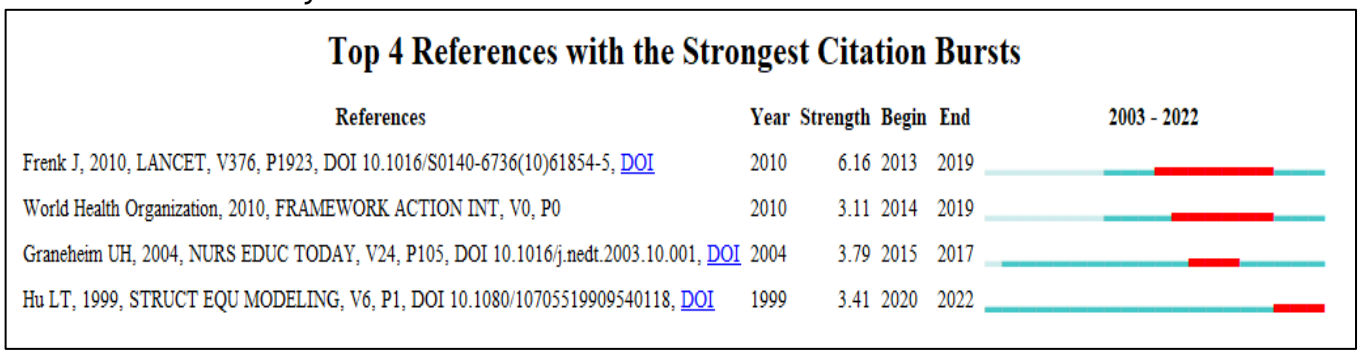

Figure 12. Top 4 references in mental health and university lecturers-related research with the strongest citation bursts.

Figure 12 presents a compilation of the four most influential publications that are characterized by their powerful citation bursts and respective durations, as indicated in the rightmost columns. The timeline, spanning from 2003 to 2022, is visually represented by the blue line while the period of burst activity is marked by the red line. One noteworthy article stands out among the recent bursts. The article, titled " Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives", was authored by Hu et al. (1999) and published in the Structural Equation Modeling: A Multidisciplinary Journal. This article exhibited a notable burst strength of 3.41, with its burst duration spanning from 2020 to 2022.

Figure 11 illustrates the timeline (2003 to 2022) with a blue line and identifies the burstiness phase with a red line. Significant studies and keywords were determined using burst analysis, and the trends are presented in the table. This analysis highlights key shifts in research focus over time. The term "teacher" showed a strong burst strength (4.77) from 2020 to 2022.

DISCUSSION

The analysis undertaken yielded the identification of three significant clusters, each marked by discernible themes and influential publications. These clusters encapsulate distinct areas of scholarly discourse and have made substantial contributions to their respective fields. The thematic clusters identified encompass the following: "Covid-19 pandemic," "burnout syndrome," and "coping strategy". Within these clusters, prominent publications have emerged as pivotal contributions that have exerted a noteworthy influence on the scholarly dialogue.

Cluster number 0, which is the largest cluster in our analysis, comprises 61 members and demonstrates a high silhouette value of 0.957. Notably, the cornerstone of this cluster is an influential article titled "Mental Health Stressors in Higher Education Instructors and Students in Mexico During the Emergency Remote Teaching Implementation due to COVID-19," authored by Zapata et al. in the year 2021. This article delves into the profound impact of the COVID-19 pandemic on the mental well-being of university instructors—a subject of immediate relevance and significance.

Scholars within the same academic domain would find it prudent to reference this article as it serves as a pivotal anchor for situating their own research within the broader discourse surrounding this critical topic. The interdisciplinary nature of this article is particularly noteworthy, as it seamlessly integrates elements from the realms of psychology, education, and sociology. This multifaceted approach holds appeal for researchers hailing from diverse academic backgrounds who share a common interest in the mental health challenges encountered by university instructors.

Furthermore, within this cluster, several key figures have emerged as the most frequently cited authors. Notable among them are Cao et al. (2020), Sahu (2020), and Watermeyer et al. (2021). These scholars have contributed significantly to the ongoing dialogue concerning the impact of the COVID-19 pandemic on higher education and mental health, thereby bolstering the academic foundations of this cluster. Their works have garnered substantial attention and recognition within the scholarly community, further underscoring the cluster's salience and influence in shaping the discourse in this field.

The second largest cluster (#1) consisting of 58 members and boasting a silhouette value of 0.961, pertains to the thematic domain of "burnout syndrome." Within this cluster, a pivotal work authored by Salimzadeh et al. in 2020 bears the title "Stress, Emotion Regulation, and Well-being among Canadian Faculty Members in Research-Intensive Universities." This seminal contribution delves into the intricate interplay

among workplace stress, the regulation of emotions, and various facets of well-being, including emotional exhaustion and job satisfaction. The discernible relevance of these subject matters to the intricate phenomenon of burnout syndrome renders this article a linchpin reference for scholars within the "burnout syndrome" cluster. The scholarly community within this cluster frequently cites this article as a foundational resource to support their understanding of the mechanisms underlying burnout and to inform potential interventions or prevention strategies.

The third largest cluster (#2) has 54 members and a silhouette value of 0.926. It is labeled as a “coping strategy". The major citing article of the cluster is authored by Arora, S (2021) title "Impact of coronavirus and online exam anxiety on self-efficacy: the moderating role of coping strategy". The article presents empirical findings that demonstrate the relationship between anxiety, self-efficacy, and coping strategies.

These findings provide valuable insights into the mechanisms underlying how students cope with anxiety during Covid-19 pandemic. Original research that addresses timely and important issues tends to attract citations. Researchers and practitioners interested in coping strategies during times of crisis would likely find this article highly relevant and influential, leading to increased citations within the cluster.

Based on the above interpretation of the results, several important insights emerge. Firstly, the identification of thematic clusters such as the "Covid-19 pandemic," "burnout syndrome," and "coping strategy" aligns with prevalent issues facing university lecturers' mental health. The COVID-19 pandemic has brought about unprecedented challenges, including sudden shifts to remote teaching, increased workloads, and social isolation, all of which have significant implications for mental well-being.

The prominence of the "burnout syndrome" cluster reflects the longstanding issue of burnout among university lecturers, driven by factors such as heavy workloads, job insecurity, and lack of institutional support. The focus on "coping strategy" highlights the importance of resilience and adaptive coping mechanisms in managing stress and promoting well-being in academia. Secondly, the influential articles and authors identified within each cluster shed light on key contributions to the scholarly discourse on mental health in academia. These works not only provide valuable insights into the underlying mechanisms and impacts of mental health challenges but also offer potential avenues for intervention and support.

Keyword Burstness Analysis

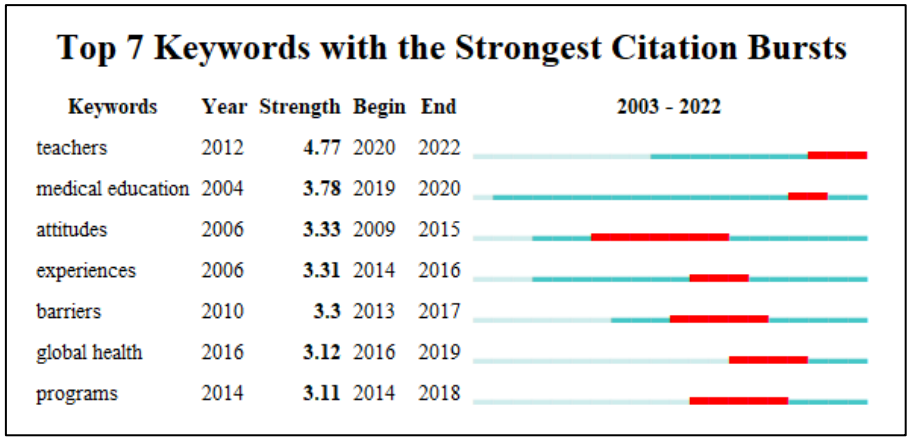

Figure 11. Top 7 keywords in mental health and university lecturers-related research with the strongest citation bursts.

Despite the valuable insights obtained, it is crucial to acknowledge specific limitations in the research process. Firstly, the analysis was constrained by the available data up to 2022, potentially missing recent developments in the field. Moreover, the selection of articles and the choice of keywords may have introduced some bias, and language restrictions could have excluded non-English publications. Recognizing these constraints is essential for guiding further research efforts aimed at enhancing our understanding and practical application of mental health in the context of university lecturers. By exploring the identified areas and addressing these limitations, researchers can make meaningful contributions to the ongoing scholarly dialogue and the implementation of relevant interventions in this domain.

Despite these limitations, the novelty of the findings lies in the systematic identification of thematic clusters and influential publications within the field of mental health in academia. By highlighting key research areas and contributors, this study contributes to a deeper understanding of the complex interplay between individual, organizational, and societal factors influencing mental well-being among university lecturers.

Moreover, the insights gained from this analysis have the potential to inform evidence-based interventions and policies aimed at addressing mental health challenges and promoting a supportive academic environment for lecturers. Overall, this study underscores the importance of prioritizing mental health in academia and provides valuable insights for future research and practice in this area.

The findings have led to the proposition of several promising research areas for future exploration. These include investigating the prevalence and causes of mental health issues such as anxiety, depression, and burnout among university lecturers. It is worth exploring the underlying causes, such as workload, job insecurity, or work-life balance. Next, future researchers may conduct longitudinal studies to track lecturers' mental health over time. This can provide insights into the long-term effects of academic careers on mental well-being. Additionally, a comparative approach is deemed imperative. Future researchers may compare the mental health of university lecturers with other professions or educational levels to understand if there are specific risk factors or protective factors related to academia. This methodological approach holds the potential to uncover distinctive risk factors and protective elements that are specific to the academic milieu.

In summary, this study underscores the critical importance of addressing mental health issues among university lecturers, recognizing their pivotal role in shaping the academic landscape and the well-being of students. The analysis of published articles revealed key thematic clusters, including the impact of the COVID-19 pandemic, burnout syndrome, and coping strategies, highlighting the multifaceted nature of mental health challenges in academia.

Implications for research, policy, and practice include the need for continued investigation into the prevalence, causes, and consequences of mental health issues among university lecturers. Longitudinal studies tracking lecturers' mental health over time can provide valuable insights into the dynamics of mental well-being within academia. Additionally, comparative research comparing the mental health of lecturers with other professions or educational levels can shed light on unique risk factors and protective factors specific to the academic environment.

This study contributes to the field by providing a systematic analysis of published literature, identifying key research areas, and suggesting directions for future exploration. By addressing mental health in academia, it lays the groundwork for creating a healthier and more productive learning and working environment, ultimately benefiting both lecturers and students alike.

CONCLUSIONS

In conclusion, research on mental health and university lecturers-related research holds significant importance because it has a direct impact on the quality of education, the well-being of students, the functioning of universities, and broader societal implications. University lecturers play a pivotal role in shaping the academic experiences of students. If lecturers are experiencing mental health issues such as stress, burnout, or anxiety, it can negatively affect their teaching quality, engagement with students, and overall effectiveness in the classroom. Mental health issues also can impede their research productivity, which can have consequences for advancements in knowledge, innovation, and the institution's reputation. Addressing mental health in academia is essential for creating a healthy and productive learning and working environment. This study aimed to analyze published articles in the field, identify key research areas, and explore their interrelationships.

Supplementary Materials

https://www-webofscience-com.ezaccess.library.uitm.edu.my/wos/woscc/summary/ea2bac3f-2957-4ad1-8ffe-bcfec62e8079-a1d16832/relevance/1

REFERENCES

1. Arora, S., Chaudhary, P., and Singh, R.K. (2021), "Impact of coronavirus and online exam anxiety on self efficacy: the moderating role of coping strategy", Interactive Technology andSmart Education, Vol.18 No. 3, pp. 475-492. https://doi.org/10.1108/ITSE-08-2020-0158

2. Brewstera, L., Jonesb, E., Priestleyc, M., Wilbrahamd, S.J., Spannere, L., Hughes, G. (2022)."Look after the staff and they would look after the students" cultures of wellbeing and mental health in the university setting. Journal of Further and Higher Education, 46(4), 548–560https://doi.org/10.1080/0309877X.2021.1986473

3. Cao W, Fang Z, Hou G, et al. (2020). The psychological impact of the COVID-19 epidemic on college students in China. Psychiatry Research. 287:112934.https://doi.org/10.1016/j.psychres.2020.112934

4. Elmberger, A., Bjorck, E., Lijedahl, M., Nieminen, J., Laksov, K.B. (2018). Contradictions in clinical teachers' engagement in

educational development: an activity theory analysis. Advances in Health Sciences Education (2019) 24:125–140.https://doi.org/10.1007/s10459-018-9853-y

5. Frenk J, Chen L, Bhutta ZA, Cohen J, Crisp N, Evans T, et al. (2010). Health professionals for a newcentury: transforming education to strengthen health systems in an interdependent world. *Lancet*.376, 1923–1958. https://doi.org/10.1016/S0140-6736(10)61854-5

6. Gair, S., & Baglow, L. (2018). Social justice in a tertiary education context: Do we practice what we preach?Education, Citizenship and Social Justice, 13(3), 207–216.https://doi.org/10.1177/1746197918793059

7. Gulliver, A., Farrer, L., Bennett, K., Ali, K., Hellsing, A., Katruss, N., Griffiths, K.M. (2018) Universitystaff experiences of students with mental health problems and their perceptions of staff training needs, Journal of Mental Health, 27:3, 247-256,https://doi.org/10.1080/09638237.2018.1466042

8. Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Convention criteria versus new altrnatives. Structural Equation Modeling: A Multidisciplinary Journal, 6(1), 1-55. https://doi.org/10.1080/10705519909540118

9. Kataoka, M., Ozawa, K., Tomotake, M., Tanioka1, T., King, B. (2014). Occupational stress and its related factors among university teachers in Japan. Health, 6(5),https://doi.org/10.4236/health.2014.65043

10. Malik, N., & Björkqvist, K. (2018). Occupational Stress and Mental and Musculoskeletal Health Among University Teachers. Eurasian Journal of Medical Investigation, 2(3), 139–147.https://doi.org/10.14744/ejmi.2018.41636

11. Sahu P. (2020). Closure of Universities Due to Coronavirus Disease 2019 (COVID-19): Impact on Education and Mental Health of Students and Academic Staff. Cureus. 12(4). e7541.https://doi.org/10.7759/cureus.7541

12. Salimzadeh, R., Hall, N.C., SaroyanStress, A. (2020). Emotion Regulation, and Well-Being among Canadian Faculty Members in Research-Intensive Universities. Social Sciences.9(12), 227;https://doi.org/10.3390/socsci9120227

13. Shen, P., Slater, P. (2021). The Effect of Occupational Stress and Coping Strategies on MentalHealth and Emotional Well-Being Among University Academic Staff During the COVID 19 Outbreak. International Education Studies; 14(3). 82-95https://doi.org/10.5539/ies.v14n3p82

14. Urbina-Garcia, A. (2020). What do we know about university academics' mental health? A systematic literature review. Stress and Health. 36(5), 563-585.https://doi.org/10.1002/smi.2956

15. Watermeyer, R., Crick, T., Knight, C. et al. (2021). COVID-19 and digital disruption in UK universities: afflictions and affordances of emergency online migration. High Educ 81, 623–641. https://doi.org/10.1007/s10734-020-00561-y

16. Zapata-Garibay R, González-Fagoaga JE,Asadi-González AA, Martínez-Alvarado JR, Chavez-Baray SM, Plascencia-López I, González-Fagoaga CJ. (2021). Mental Health Stressors in Higher Education Instructors and Students in Mexico During the Emergency RemoteTeaching Implementation due to COVID-19. Frontiers in Education, 6. 670400. https://doi.org/10.3389/feduc.2021.670400