Bibliometric Analysis of Healthcare Workforce Turnover Intention Studies (2000–2023)

Analisis Bibliometrik Kajian Niat Pusing Ganti Warga Kerja Kesihatan (2000–2023)

Ahmad Rafeein Mohamad[a]*, Kalsom Ali[b], Khairunneezam Mohd Noor[c]

[a,b,c] Faculty of Leadership and Management, Universiti Sains Islam Malaysia
Corresponding author: rafeein.mohd@gmail.com

Abstract

This bibliometric analysis examines research evolution on turnover intention among healthcare employees from 2000 to 2023. Using the SCOPUS database, 299 original research articles and conference papers were shortlisted through a PRISMA method of screening process. The data included were exported into CSV format and quantitatively analysed using VOSviewer and Microsoft Excel applications. The analysis techniques in place were publication trend evaluation, keyword occurrences, citation trend, and authorship mapping. Statistically, results show a significant publication surge in 2019, associated with the emergence of the COVID-19 pandemic. The United States leads the most productive countries and prolific authors. Over time, the authors' keywords shifted from organisational factors and circumstances to healthcare personnel's well-being outcomes. This signified that research has evolved to a more inclusive approach, incorporating organisational systems and individual aspects. Medicine and nursing were the key subject areas dominating the publications, with English as the main language used. The multi-disciplined and inter-affiliative research activities offered insights across diverse healthcare systems. Overall, this study presents valuable insights into the current scholarly landscape in the corpus of turnover intention studies. Nevertheless, areas such as intrinsic values and employer–employee relationship qualities remain underexplored.

Keywords: Turnover Intention, Healthcare, Healthcare Employees, SCOPUS, Bibliometric Mapping

Abstrak

Analisis bibliometrik ini meneliti perkembangan penyelidikan tentang niat pusing ganti dalam kalangan pekerja sektor kesihatan dari tahun 2000 hingga 2023. Data yang dikumpul daripada sumber SCOPUS mengandungi 299 makalah yang terdiri daripada artikel dan kertas persidangan yang disenarai pendek melalui kaedah PRISMA. Data yang disusun dalam format CSV telah dianalisis secara kuantitatif menggunakan aplikasi VOSviewer dan Microsoft Excel. Analisis yang dilaksanakan merangkumi penilaian trend penerbitan, kekerapan penggunaan kata kunci, trend sitasi, dan maklumat berkaitan penulis makalah berkenaan. Dapatan analisis menunjukkan berlaku lonjakan terbitan artikel dan kertas persidangan yang ketara mulai tahun 2019, seiring dengan penularan pandemik

COVID-19. Amerika Syarikat mendahului senarai negara dan pengkaji paling produktif. Selain itu, penggunaan kata kunci yang awalnya berkisar kepada faktor berkaitan organisasi telah berkembang kepada aspek kesejahteraan psikologi warga kerja perkhidmatan kesihatan. Majoriti makalah dihasilkan dalam bidang perubatan dan kejururawatan, dengan sebahagian besarnya diterbitkan dalam Bahasa Inggeris. Kajian bersifat multidisiplin serta kolaborasi pengkaji rentas sempadan negara dan organisasi telah menyediakan kepelbagaian pandangan mengenai sistem perkhidmatan kesihatan. Kesimpulannya, kajian ini boleh menjadi rujukan kepada landskap berkaitan teras ilmu niat pusing ganti, khususnya dalam konteks perkhidmatan kesihatan. Namun, teras ilmu seperti nilai intrinsik dan kualiti perhubungan majikan-pekerja masih kurang diberikan perhatian dan memerlukan kajian lanjut.

Kata Kunci: Niat Pusing Ganti, Penjagaan Kesihatan, Warga Kerja Kesihatan, SCOPUS, Pemetaan Bibliometrik

INTRODUCTION

An employer's ability to retain staff reflects their effectiveness in motivating employees to be loyal. However, efforts to retain employees are exposed to attrition that can lead to unfavourable consequences for organisations. As such, constant employee turnover causes labour shortages (Huang et al., 2019; Hung & Lam, 2020; Perreira et al., 2018). These shortages cause deficiencies in workforce capacities and capabilities, particularly when key skilled and experienced personnel depart (George & Wallio, 2017). Moreover, labour shortages negatively impact overall organisational performance (Al Shbail & Al Shbail, 2020) and disrupt entire organisational systems (Huang et al., 2019; Hung & Lam, 2020).

The Theory of Planned Behaviour (Ajzen, 1985) posits a significant correlation between turnover intention and actual turnover. This theoretical proposition has led to the widespread acceptance of turnover intention as a precursor for actual employee turnover (Cohen et al., 2016; Perreira et al., 2018; Wen et al., 2018). Empirical research by Wen et al. (2018) and Zahednezhad et al. (2020) revealed a strong positive correlation between high turnover intention and the increased likelihood of actual turnover within healthcare organisations, particularly among medical professionals such as doctors and nurses.

Various pull and push factors may influence turnover intention. Research findings provide empirical evidence to qualitatively develop structured literature reviews and quantitatively conduct meta-analyses of specific factors affecting turnover intention (Zupic & Čater, 2015). Meanwhile, bibliometric analysis is a method used to explore and understand the evolution of a specific research field, providing in-depth insights and shedding light on emerging scholarship (Donthu et al., 2021). This research method is also applicable in discovering connections between subjects throughout the development of a particular research area (Zupic & Čater, 2015).

The present study adopts a bibliometric approach to examine the evolution of research on turnover intentions in healthcare contexts. The objective is to quantitatively examine productivity in publications, research trends, collaboration patterns, scholarly influence, and the impacts of scholarly activities on the development of studies within the turnover and turnover intentions domains. This study provides a valuable resource for researchers, policymakers, and healthcare administrators seeking to address the critical issue of employee retention in the healthcare sector. The research objectives (ROs) and research questions (RQs) outlined in Table 1 guide this study.

Table 1

Research Objectives and Research Questions

Research Objectives	Research Questions
RO1: Examining the evolution of scholarly literature focusing on employee turnover intention within healthcare since 2000.	RQ1: What is the temporal evolution and growth trajectory of the published literature focusing on turnover intention from 2000 onwards?
	RQ2: What are the most prevalent keywords used by authors?
	RQ3: What is the trend in keyword usage by authors in publications?
RO2: Identifying characteristics of the published literature in terms of languages and subject areas associated with turnover intention research.	RQ4: What languages are used by the authors of the published literature?
	RQ5: What subject areas commonly appear in the published literature?
RO3: Identifying the leading publishers and countries, and patterns of their partnership in producing the scholarly literature on employee turnover intention in healthcare settings.	RQ6: Which publishers prominently contribute to the scholarly literature on employee turnover intention in healthcare settings?
	RQ7: Which countries lead in contributing literature in the turnover intention domain among healthcare employees?
	RQ8: How strong are the countries' collaborative partnerships in publishing related scholarly literature?
	RQ9: To what extent do authors collaborate with authors from other countries?
RO4: Determining the most prolific authors and their collaborative networks in research related to turnover intention.	RQ10: Who are the most prolific authors who substantially contributed to research on turnover intention among healthcare employees?
	RQ11: How strong are the authors' networks in co-authoring the related literature?
RO5: Analysing the most influential publications that contributed to turnover intention research.	RQ12: Which publications are the most highly cited and influential in advancing research on turnover intention?

LITERATURE REVIEW

Employee turnover, encompassing voluntary resignations and involuntary terminations, can harm the healthcare sector. Persistent staff attrition in healthcare organisations may cause shortages of medical professionals, leading to a compromised quality of medical care (Perreira et al., 2018), heightened patient mortality rates (Zahednezhad et al., 2021), and unsustained patient care (Hwang & Yi, 2021). Healthcare employee turnover also hinders therapeutic relationships and impedes the recovery process for patients requiring extended case management (Hwang & Yi, 2021). Over time, cyclical turnover and prolonged shortages among healthcare industry workers would gradually erode public trust and deteriorate the relationship between the organisation and its clients (Harris et al., 2018).

The prevalence of detrimental consequences due to attrition underscores the criticality of healthcare employee retention, yet it remains vulnerable to turnover intentions. Its significance is underpinned by the Theory of Planned Behaviour (Ajzen, 1985), which posits a strong connection between behavioural intention and actual behaviour, and is empirically regarded as a precursor of actual turnover (Cohen et al., 2016; Wen et al., 2018; Zahednezhad et al., 2021).

Previous literature suggests that turnover intention could be induced by factors beyond organisational control's pull factors and within organisational mitigating capacities' push factors. These factors include the conflicting attraction between existing and alternative jobs (El Koussa et al., 2016; Wen et al., 2018), high workloads and job demands (Hung & Lam, 2020; Perreira et al., 2018), job dissatisfaction (George & Wallio, 2017), work disengagement (Kang & Sung, 2019; Huang et al., 2019), withdrawal behaviour (Kang & Sung, 2019; Suifan et al., 2017), organizational injustice (Huang et al., 2019; Kang & Sung, 2019), and various other reasons.

Previous research has examined turnover intention, linking it to direct factors (Cao et al., 2020; Perreira et al., 2018; Al Shbail & Al Shbail, 2020) and indirect predictors (Islam et al., 2018; Manoppo et al., 2020; Tian et al., 2020). Bibliometric analyses of turnover intention (see Table 2) also exist, but are limited to non-specific contexts and functional group studies. This study addresses this gap and advances scholarly understanding of turnover intention, particularly among healthcare employees in hospitals and clinics. The specific, refined scope enhances understanding of scholarly progress in this critical area.

Table 2

Previous Bibliometric Analyses on Turnover Intention

Author	Search Domain	Source (Timeframe)	Total Document	Contents of Analysis
Loura et al. (2021)	TITLE-ABS-KEY ("employee turnover intention")	Scopus (1988-2020)	509	Publication years, sources and types of documents, subject areas, languages, countries, source titles, frequent keywords, authorships, and citation metrics.
Uzkiyyah et al. (2022)	("turnover intention")	Scopus (2008-2022)	302	Publications years, source titles, publishers, authors, countries, subject areas, and keywords.
Francis et al. (2023)	TITLE ("turnover intention*" OR "intention to leave work*" OR "intention to quit work*")	Scopus (1982-2021)	1770	Types of documents and sources, languages, subject areas, publication years, countries, institutions, authors, source titles, citation metrics, citations, authorships, and keywords.
Norizan et al. (2023)	TITLE ("turnover intention" OR "employee turnover"	Scopus (Not specified)	3414	Publication years, authors, institutions, citation metrics, and keywords.

	OR "intention to stay")			
Zhang et al. (2023)	TS = ("turnover intention" OR "intention to leave" AND "nurse*")	Web of Science (2017-2022)	1500	Institutions, authors, source titles, citations, and keywords.
Sai and Pinapati (2023)	("employee turnover")	Scopus (1957-2022)	1948	Publication years, authors, source titles, publications, institutions, countries, co-occurrence of keywords, research evolution, and citations.

METHODOLOGY

Table 3 outlines the inclusion and exclusion criteria designed to ensure that only relevant, empirical research on turnover intention in healthcare settings is included in the bibliometric analysis. The time frame criterion (2000-2023) was established to focus on contemporary research spanning over two decades, allowing for analysis of trends and developments while excluding older studies that might not reflect current healthcare workplace dynamics.

Original research articles and conference papers were included to ensure only data-driven original research findings are captured in the analysis. This criterion excluded literature reviews, meta-analyses, book chapters, and theoretical papers that did not contribute new empirical research findings. This approach ensures that all analysed papers contained actual measurements, observations, or experimental results related to turnover intention in healthcare settings rather than theoretical discussions or secondary analyses of previously published data.

Table 3

The Inclusion and Exclusion Criteria

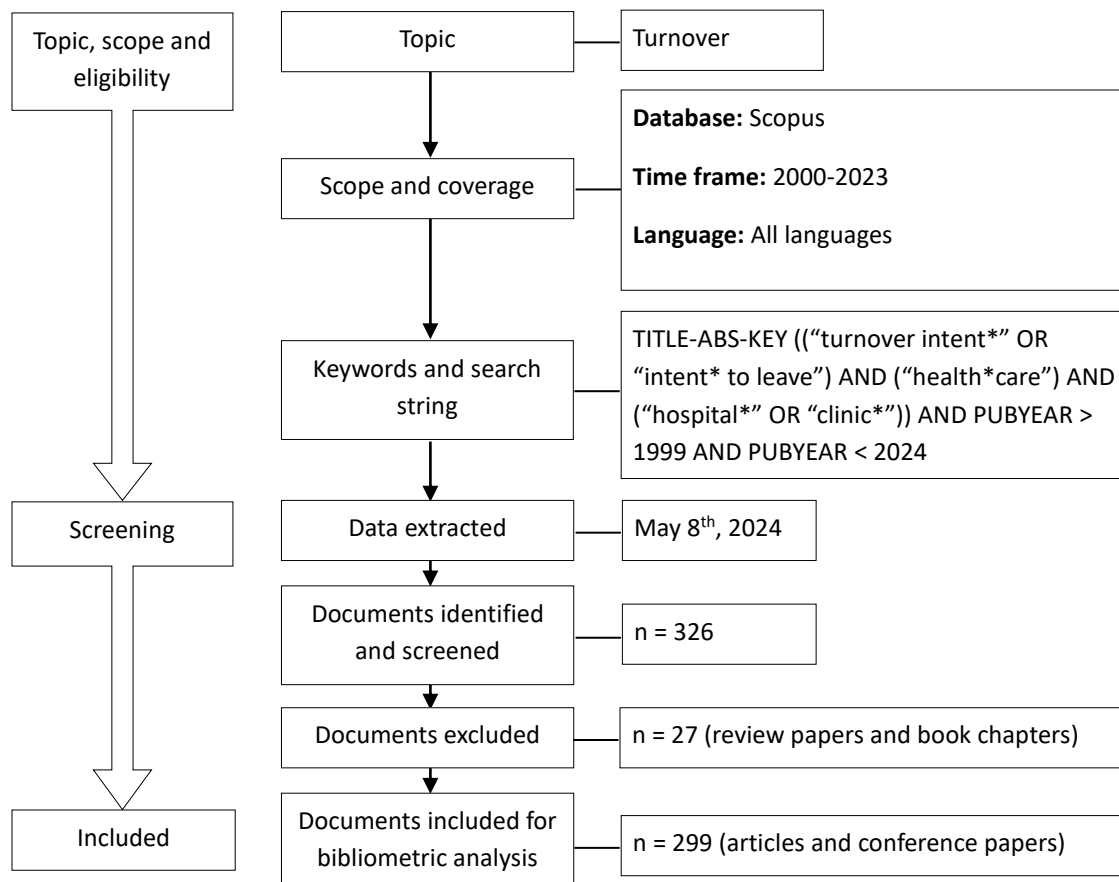| Criteria	Inclusion	Exclusion
1. Year	2000 - 2023	Before 2000
2. Types of resources	Original research articles and conference papers	Non-original research articles and conference papers
3. Objective of the study	Reporting the empirical findings based on data-driven original research	Reporting the findings based on non-original research

This bibliometric study commenced with a systematic search of the relevant literature from the SCOPUS database on May 8, 2024. SCOPUS was selected as the data source for the present study for its multidisciplinary coverage, extensive citation indexing and global recognition as one of the leading databases in scholarly research works (Bartol et al., 2014; Burnham, 2006). The present study gathers sources from original research works on turnover intention published between 2000 - 2023, particularly among healthcare employees in hospitals or clinics. Documents were retrieved using title, abstract, and keyword fields, applying the search string shown in Table 4.

Table 4

The Search String

Database	Search String
Scopus	TITLE-ABS-KEY (("turnover intent*" OR "intent* to leave") AND ("health*care") AND ("hospital*" OR "clinic*")) AND PUBYEAR > 1999 AND PUBYEAR < 2024

The PRISMA flow diagram illustrated in Figure 1 outlines the search, screening, and inclusion process for the documents. The initial search yielded 326 records. After screening for document types in the Scopus database, 27 review papers and book chapters were removed, leaving 299 original research articles and conference papers for bibliometric analysis. No duplicates were detected during document sorting in Microsoft Excel.

The included data from the database was saved in a comma-separated values (.csv) format, enabling the execution of analysis using the VOSviewer software. This application was employed to construct and visualise the bibliometric networks present in the dataset. Concurrently, the same dataset was saved in Microsoft Excel format, enabling the analysis and presentation of findings in tabular and graphical forms. The results and discussion of this bibliometric study are presented following the proposed ROs and RQs.

Figure 1

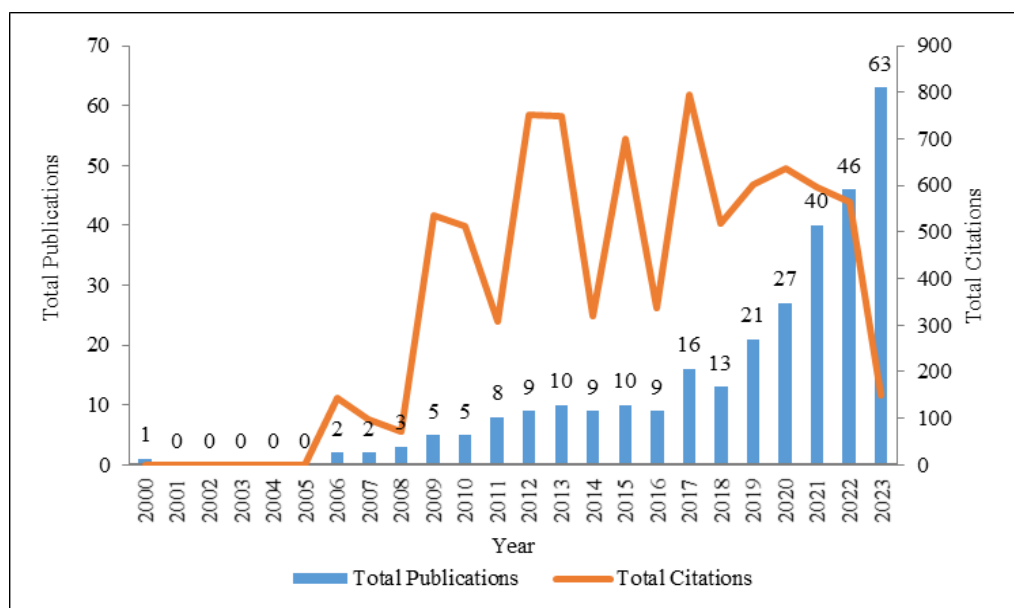*PRISMA Flow Diagram for the Search, Screen, and Inclusion of Documents*

RESULT

Trends in Publications and Citations

Figure 2 depicts publication and citation trends in turnover intention among healthcare employees from 2000 to 2023. Scholarly activities were limited in their early years, but a gradual upward trend emerged in 2006, indicating growing interest among the authors. Despite dips and fluctuations in research in 2014, 2016, and 2018, the overall trajectory of research progress remains positive. A surge in academic activity is evident from 2019, with steep increases in publications and citations.

The transition from minimal research in the early 2000s to rapidly expanding interest in recent years reflects extensive research efforts and academic activities, which have marked substantial growth in research outputs. This trend underscores the increasing importance of addressing employee turnover in healthcare through continued research and evidence-based strategies. It provides insights into the evolution of scholarly activity and the potential impact of research on turnover intention in healthcare workplaces. This trajectory highlights the increasing recognition of turnover intention as a critical issue influencing healthcare system resilience.

Figure 2
Trajectory of the Yearly Growth in Publications and Citations

Most Commonly Used Keywords in Publications

A total of 680 distinct keywords were identified, of which 35 met the predetermined threshold of appearing at least five times in the literature. The combination of these 35 clustered keywords accounted for 523 appearances with 956 link strengths. The network visualisation in VOSviewer (Figure 3) reported that the 35 authors' keywords, which appeared in at least five publications, are grouped into five clusters: red, green, blue, yellow, and purple to represent thematic groupings in turnover intention research. The central nodes of the network visualisation indicate

that keywords like "turnover intention", "job satisfaction", "intention to leave", and "nurses" form the conceptual core, with nursing being the dominant healthcare workforce being studied.

Figure 3
Network Visualisation of the Authors' Keywords

Among the 35 keywords, the top 20 were ranked by occurrence and total link strength. They were categorised into four distinct clusters: red, green, blue, and yellow (Table 5). These clusters accounted for 430 keyword occurrences and demonstrated 670 link strengths, reflecting their prominence and interconnectedness within the research landscape.

Table 5
Top 20 Most Frequent and Strongly Linked Keywords

Cluster	Keywords	Occurrences	Total Link Strength
Red	Nurses	45	75
	Intent to leave	38	51
	Turnover intentions	15	16
	Healthcare	14	23
	Work engagement	13	23
	Quality of care	10	16
	Organisational commitment	8	18
	TOTAL	**143**	**222**
Green	Job satisfaction	53	91
	Burnout	46	63
	Intention to leave	11	20
	Nurse	10	15
	Work environment	7	13

	Leadership	6	12
	TOTAL	**133**	**214**
Blue	Turnover intention	67	75
	COVID-19	17	25
	Workplace violence	8	13
	China	7	15
	TOTAL	**99**	**128**
Yellow	Nursing	29	50
	Turnover	21	44
	Workforce	5	12
	TOTAL	**55**	**106**

The keyword analysis revealed that the red cluster was the largest, comprising 143 occurrences and 222 link strengths. This cluster includes keywords such as 'nurses', 'intent to leave', and 'organisational commitment'. The green cluster follows with 133 occurrences and 214 link strengths, followed by the blue cluster with 99 occurrences and 128 link strengths. Finally, the yellow cluster with 55 occurrences and 106 link strengths follows. Turnover intention was the most frequent keyword with 67 occurrences. Combined with other related keywords (intent to leave: 38, intention to leave: 11, turnover intentions: 15, turnover: 21), these terms appeared a total of 152 times across different studies, indicating that researchers used various terminologies to describe the same concept of turnover in healthcare settings.

Other frequently occurring keywords include job satisfaction (53), burnout (46), and nurses (45), demonstrating the multiple interconnected factors influencing healthcare worker retention. The prominence of job satisfaction and burnout suggests that these are critical determinants of turnover decisions. Additionally, the dominance of nursing-specific keywords indicates that this profession faces particularly acute retention challenges compared to other healthcare roles. Other keywords appeared 5-29 times, indicating a diverse range of related topics within the field. The emergence of COVID-19 as a significant keyword in the blue cluster (17 occurrences, total link strength of 25) suggests the pandemic's substantial impact on healthcare worker turnover intentions, introducing new research dimensions that have expanded interest in this field.

The central themes primarily addressed by researchers studying turnover intention are illustrated using the network visualisation of the top 20 keywords (Figure 4). Despite appearing in a smaller cluster than other keywords, turnover intention turns out to be the network hub among the top keywords. This signifies that turnover intention serves as the central concept and plays a pivotal role in shaping the discourse on healthcare workforce retention.

Figure 4
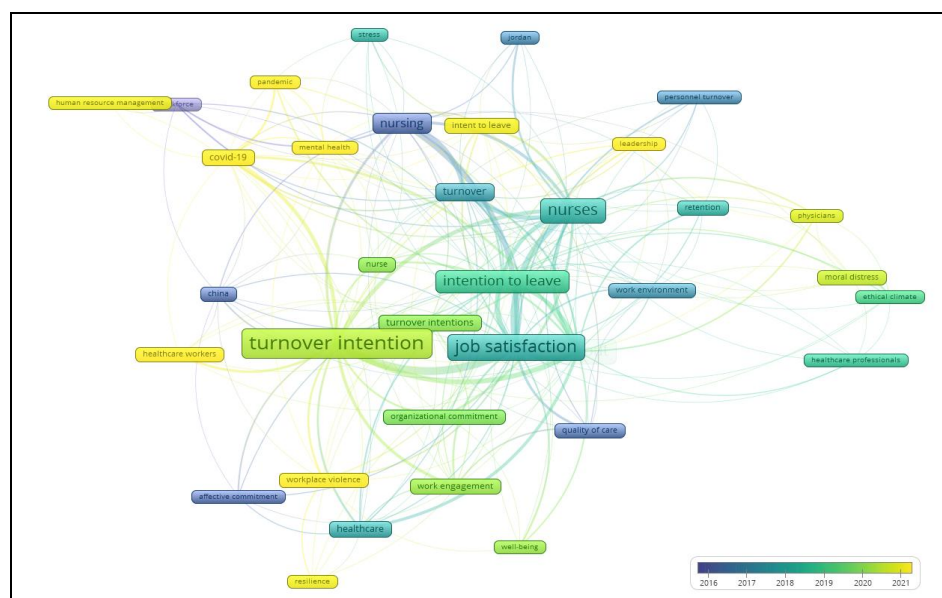*Network Visualisation of the Top 20 Keywords*

Shifting of the Keyword Usage by Authors

Figure 5 illustrates the temporal evolution of prominent authors' keywords from 2000 to 2023, overlaid. Of the 35 keywords that appeared at least five times in publications, a significant shift in keyword usage emerged between 2016 and 2021.

Figure 5
Overlay Visualisation of the Authors' Keywords

Initially, keywords focused on nursing, workforce, quality of care, affective commitment, and retention. Subsequent shifts were associated with job satisfaction, workplace violence, moral distress, and resilience. The 2016-2018 period emphasised organisational issues, while 2019-2021 shifted towards an individual-centric perspective, focusing on healthcare workers' psychological and emotional states amid the COVID-19 pandemic. Keywords during this period included mental health, leadership, and human resource management. This evolution reflects changing research focus on turnover intention, with growing emphasis on outcomes from emerging global challenges.

　　　　Two distinct phases of scholarly evolution emerged. From 2000 to 2018, 102 documents were published, accumulating 5,837 citations. These research outputs used 283 keywords, with 10 appearing at least five times in publications. Beginning in 2019, research intensified with 197 publications, 2,548 citations, and 492 keywords (21 appearing at least five times). The average publication rate increased from 5.37 documents annually (2000-2018) to 39.4 documents annually (2019-2023). Table 6 illustrates this transition, highlighting substantial growth in research output and keyword diversity in recent years.

Table 6
Trends in Shift of the Keyword Usage

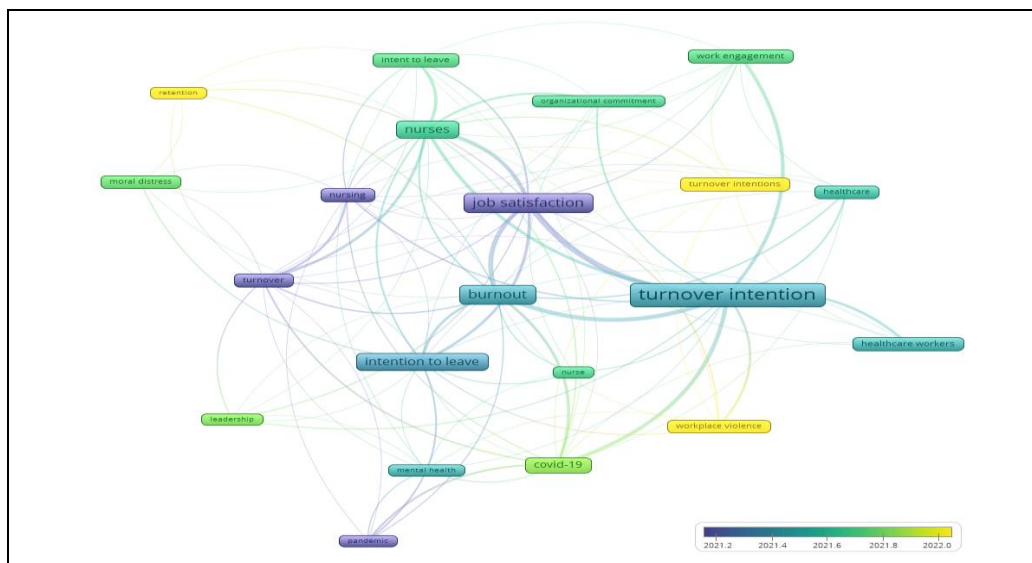| Cluster	Timeframe: 2000-2018 (19 years) Total Publications: 102 Average publication: 5.37/year Total keywords: 283			Timeframe: 2019-2023 (5 years) Total Publications: 197 Average publication: 39.4/year Total keywords: 492		
	Keywords in 5 publications	**O**	**TLS**	**Keywords in 5 publications**	**O**	**TLS**
Red	Nurses	20	27	Burnout	31	48
	Burnout	15	15	Intention to leave	25	30
	Intention to leave	13	20	COVID-19	17	31
	Healthcare	7	9	Mental health	6	11
				Nurse	6	8
				Pandemic	6	13
				Leadership	5	10
Green	Job satisfaction	21	31	Turnover intention	53	63
	Quality of care	6	5	Job satisfaction	32	49
	Turnover intentions	5	4	Healthcare workers	10	10
				Turnover intentions	10	12
				Work engagement	10	15
				Healthcare	7	12
				Workplace violence	7	12
Blue	Nursing	17	24	Nurses	25	44
	Turnover	9	14	Nursing	12	21
				Turnover	12	28
				Intent to leave	10	17
				Moral distress	8	7
				Organisational commitment	6	13
				Retention	5	8
Yellow	Turnover intention	14	11			

Notes: O = Occurrences; TLS = Total link strength

Before 2019, frequently occurring keywords included job satisfaction, nurses, burnout, intention to leave, nursing, and turnover intention, with research focusing on factors affecting turnover intention, particularly among nurses. While these keywords remain prominent, the period from 2019 to 2022 saw the emergence of new keywords with significant total link strength, such as work engagement, organisational commitment, COVID-19, mental health, pandemic, leadership, moral distress, retention, and workplace violence.

The shift in keyword usage indicates researchers' growing interest in organisational governance, individual behaviours, and employee well-being. This change also suggests an increasing focus on exploring the COVID-19 pandemic's impact on various organisational and individual outcomes affecting turnover intention, reflecting the adaptation of research to address contemporary challenges in healthcare employee retention and well-being. This periodic evolution in keywords is presented in an overlay visualisation shown in Figure 6.

Figure 6
Overlay Visualisation of the Keywords Within The 2019 – 2023 Timeframe

Languages of the Published Literature

Table 7 shows that research on turnover intention among healthcare employees is predominantly published in English, with 289 articles (97.99%). This dominance reflects English's role in facilitating the global dissemination of academic publications. A small number of articles appear in Chinese (2, 0.67%), French, Greek, Italian, and Spanish (1 each, 0.33%). While minimal, these non-English publications indicate that research is being conducted across diverse linguistic and cultural contexts. These diverse publications may capture nuances and contextual factors specific to various regions or healthcare systems, potentially enriching the overall understanding of turnover intention in the healthcare sector.
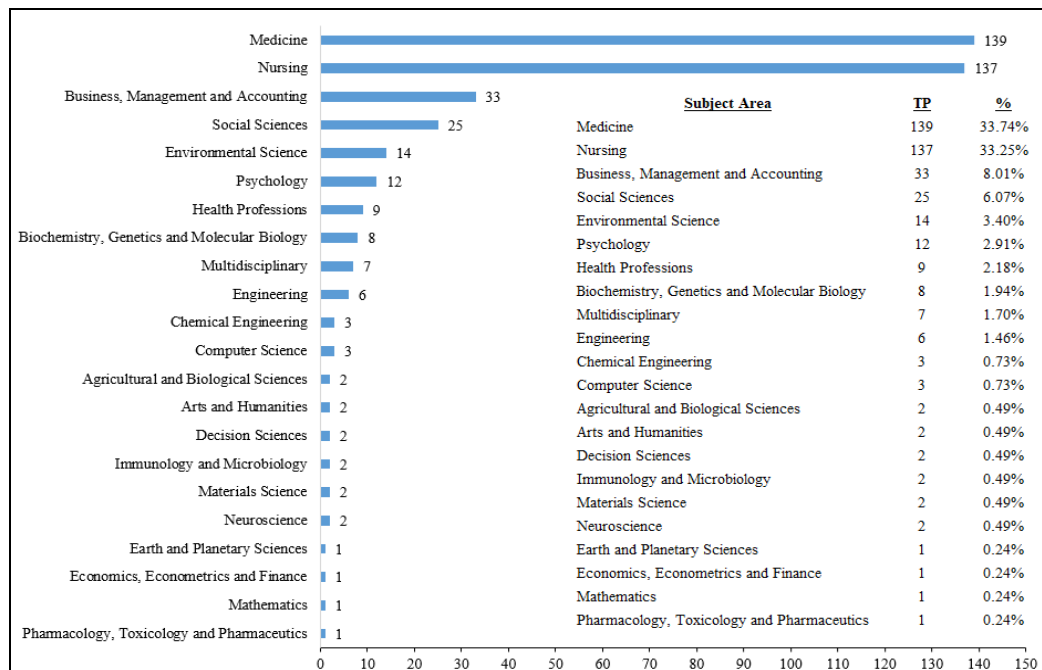
TABLE 7
Languages of the Published Literature

Language	TP	%
English	293	97.99%
Chinese	2	0.67%
French	1	0.33%
Greek	1	0.33%
Italian	1	0.33%
Spanish	1	0.33%
Total	**299**	**100.00%**

Notes: TP = total publications

Subject Areas of the Published Literature

Figure 7 illustrates the subject areas of the literature in this study. Medicine and nursing dominate, appearing in 139 and 137 publications respectively, accounting for 66.99% of publications across 22 subject areas. The business, management and accounting follow with 33 publications (8.01%). The social sciences field appears in 14 publications (3.40%), while environmental science and psychology each account for 12 publications (2.91%). Other subject areas contribute fewer than 10 publications each, ranging from 0.24% to 1.94% of the total. This distribution demonstrates that studying employee turnover in healthcare is a multifaceted endeavor. It also signifies the need for interdisciplinary contributions from various fields to understand and address these complex challenges comprehensively.

FIGURE 7
Subject Areas of the Published Literature

Subject Area	TP	%
Medicine	139	33.74%
Nursing	137	33.25%
Business, Management and Accounting	33	8.01%
Social Sciences	25	6.07%
Environmental Science	14	3.40%
Psychology	12	2.91%
Health Professions	9	2.18%
Biochemistry, Genetics and Molecular Biology	8	1.94%
Multidisciplinary	7	1.70%
Engineering	6	1.46%
Chemical Engineering	3	0.73%
Computer Science	3	0.73%
Agricultural and Biological Sciences	2	0.49%
Arts and Humanities	2	0.49%
Decision Sciences	2	0.49%
Immunology and Microbiology	2	0.49%
Materials Science	2	0.49%
Neuroscience	2	0.49%
Earth and Planetary Sciences	1	0.24%
Economics, Econometrics and Finance	1	0.24%
Mathematics	1	0.24%
Pharmacology, Toxicology and Pharmaceutics	1	0.24%

Leading and Most Productive Authors

Table 8 highlights 13 prolific authors contributing at least three articles to the literature from 2000 to 2023. Leino-Kilpi, H. leads with five publications and 280 citations, averaging 56 citations per article. Four publications were published by Clarke, S. and Van Bogaert, P. with 384 citations, averaging 96 citations per article. Linzer, M. follows with three publications garnering 425 citations, averaging 141.67 citations per article. The remaining 9 authors each published three articles, with citation counts ranging from 17 to 282 and averages between 5.67 and 94 per publication. The high citation counts for several authors (e.g., Leino-Kilpi, H.; Linzer, M.; Clarke, S. and Van Bogaert, P.) affiliated with different institutions and countries demonstrate the significant impact and broad applicability of their research on turnover intention across diverse healthcare contexts.

TABLE 8

Leading and Most Productive Authors

Author	Affiliation	Country	TP	CP	TC	C/TP	C/CP	h
Leino-Kilpi, H.	University of Turku	Finland	5	5	280	56.00	56.00	57
Clarke, S.	NYU Rory Meyers College of Nursing	United States	4	4	384	96.00	96.00	49
Van Bogaert, P.	Universiteit Antwerpen	Belgium	4	4	384	96.00	96.00	29
Linzer, M.	Office of Professional Worklife	United States	3	3	425	141.67	141.67	71
Bartram, T.	RMIT University	Australia	3	3	282	94.00	94.00	36
Stanton, P.	RMIT University	Australia	3	3	282	94.00	94.00	24
Poghosyan, L.	Columbia University School of Nursing	United States	3	3	258	86.00	86.00	31
Fan, L.	Harbin Medical University	China	3	3	211	70.33	70.33	23
Labrague, L. J.	Loyola University	United States	3	3	176	58.67	58.67	38
Emhan, A.	University of Central Florida	United States	3	3	60	20.00	20.00	5
Mengenci, C.	Bower Hospital	Türkiye	3	3	60	20.00	20.00	3
Aman-Ullah, A.	Universiti Utara Malaysia	Malaysia	3	3	20	6.67	6.67	9
Aziz, A.B.	Universiti Utara Malaysia	Malaysia	3	3	17	5.67	5.67	8

Notes: TP = total publications; CP = cited publications; TC = total citations; C/TP = average citations per publication; C/CP = average citations per cited publication; and h = h-index
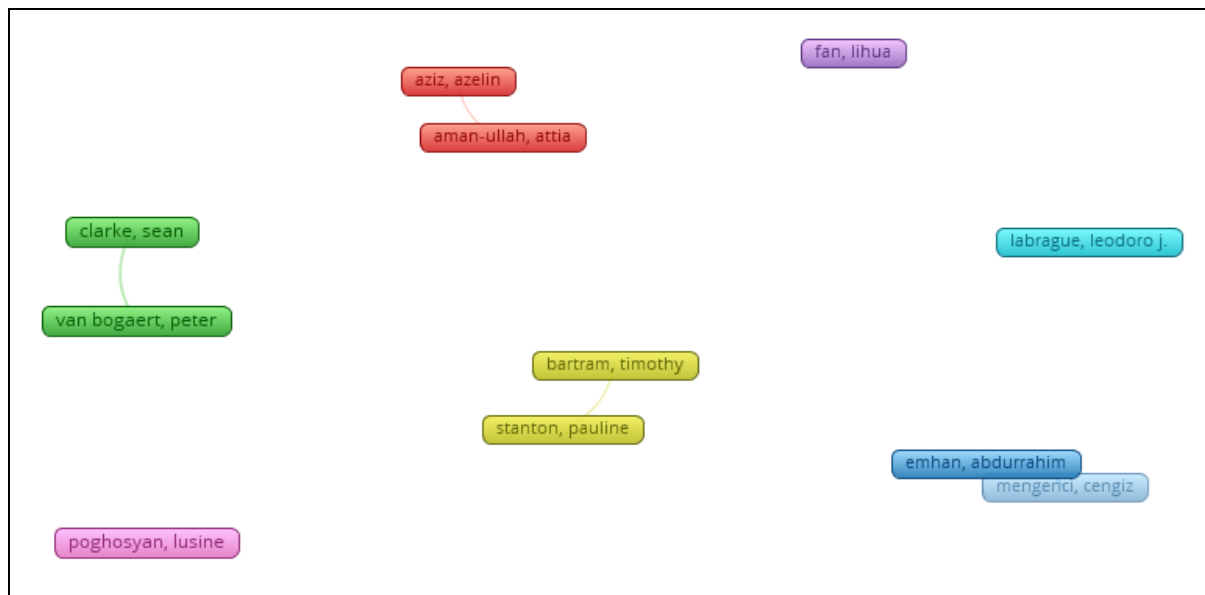
Co-Authorship of the Most Productive Authors

Table 9 elucidates the total link strength among the most prolific authors and their collaborative endeavours with other researchers.

Table 9

Co-authorship of the Most Productive Authors

Author	Affiliation	Country	TP	TC	TLS
Clarke, S.	NYU Rory Meyers College of Nursing	United States	4	384	4.00
Van Bogaert, P.	Universiteit Antwerpen	Belgium	4	384	4.00
Bartram, T.	RMIT University	Australia	3	282	3.00
Stanton, P.	RMIT University	Australia	3	282	3.00
Emhan, A.	University of Central Florida	United States	3	60	3.00
Mengenci, C.	Bower Hospital	Türkiye	3	60	3.00
Aman-Ullah, A.	Universiti Utara Malaysia	Malaysia	3	20	2.00
Aziz, A.B.	Universiti Utara Malaysia	Malaysia	3	17	2.00
Linzer, M.	Office of Professional Worklife	United States	3	425	0.00
Leino-Kipli, H.	University of Turku	Finland	5	280	0.00
Fan, L.	Harbin Medical University	China	3	211	0.00
Labraque, L.J.	Loyola University	United States	3	176	0.00
Poghosyan, L.	Columbia University School of Nursing	United States	3	258	0.00

Notes: TP = total publications; TC = total citations; TLS = Total link strength

Figure 8 reveals nine distinct clusters, representing the interconnections among the most active authors. However, only four of these clusters exhibit linked authorship, exemplified by the collaborations between Clarke, S. and Van Bogaert, P.; Bartram, T. and Stanton, P.; Emhan, A. and Mengenci, C.; and Aman-Ullah, A. and Aziz, A.

Figure 8

Network Visualisation of the Link Between Productive Authors

Upon screening and cross-checking the authors' affiliations and countries listed in Table 11, collaborations between Bartram, T. and Stanton, P. occurred within their shared affiliations and countries. Similarly, Aman-Ullah, A. and Aziz, A. collaborated within their common institutions. In contrast, partnerships between Emhan, A. and Mengenci, C., and between Clarke, S. and Van Bogaert, P., exemplify inter-institutional and cross-country collaboration. This indicates a collaborative culture in research that transcends specific affiliations and national boundaries, suggesting a dynamic research approach that extends beyond organisational and geographical limitations.

Most Active Source Title and Publishers

Table 10 presents 13 sources with at least five publications on turnover intention among healthcare employees from 2000 to 2023. These most active sources collectively produced 118 publications, accumulating 4728 citations. The Journal of Advanced Nursing leads with 19 publications and 1353 citations, followed by the Journal of Clinical Nursing with 15 publications and 504 citations. Other prominent sources include the International Journal of Environmental Research and Public Health (14 publications), BMJ Open (12 publications), and International Nursing Review (10 publications). The remaining eight sources contributed between five and nine publications each. This concentration of publications in specific journals highlights the primary venues for research dissemination in this field.

Table 10

Most Active Sources' Titles and Publishers

Sources	Publishers	TP	TC	C/P
Journal of Advanced Nursing	Blackwell Publishing Ltd./ John Wiley and Sons Inc.	19	1353	71.21
Journal of Clinical Nursing	Blackwell Publishing Ltd./ John Wiley and Sons Inc.	15	504	33.60
International Journal of Environmental Research and Public Health	Multidisciplinary Digital Publishing Institute (MDPI)	14	308	22.00
BMJ Open	BMJ Publishing Group	12	334	27.83
International Nursing Review	Blackwell Publishing Ltd./ John Wiley and Sons Inc.	10	437	43.70
BMC Health Services Research	BioMed Central Ltd.	9	211	23.44
Journal of Nursing Scholarship	Blackwell Publishing Ltd./ John Wiley and Sons Inc.	7	545	77.86
International Journal of Nursing Studies	Elsevier Ltd.	6	454	75.67
PLoS ONE	Public Library of Science	6	160	26.67
Journal of Nursing Management	John Wiley and Sons Inc.	5	191	38.20
Journal of Nursing Administration	Lippincott Williams and Wilkins	5	120	24.00
Healthcare (Switzerland)	Multidisciplinary Digital Publishing Institute (MDPI)	5	69	13.80
Journal of Health Management	Sage Publications India Pvt. Ltd.	5	42	8.40
	TOTAL	118	4728	40.07

Notes: TP = total publications; TC = total citations; C/P = average citations per publication

Blackwell Publishing Ltd./John Wiley and Sons Inc. emerges as the dominant publisher, with several of its journals contributing a combined 51 publications and 2389 citations. The Multidisciplinary Digital Publishing Institute (MDPI) follows with 19 publications and 377 citations. Other notable publishers include BMJ Publishing Group, BioMed Central Ltd., Elsevier Ltd., and the Public Library of Science, each contributing between 6 and 12 publications. The diversity of publishers and journals represented in this analysis reflects the multidisciplinary nature of research on turnover intention in healthcare. The research encompasses medical, nursing, environmental, and management perspectives, indicating the complex and multifaceted nature of this issue. The high citation counts for journals like the Journal of Advanced Nursing and Journal of Clinical Nursing suggest that these publications have significantly impacted the field.
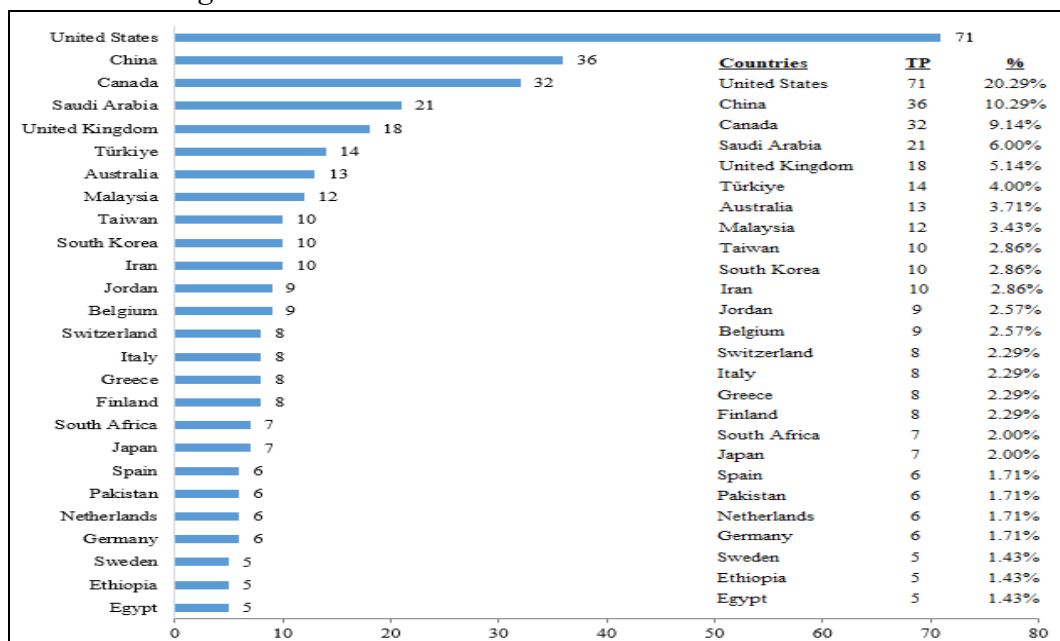
Most Active Publishing Countries

Figure 9 illustrates the distribution of research productivity on turnover intention among healthcare employees across countries. Out of 26 countries with at least five publications, the United States leads with 71 publications, nearly double China's output of 36. The United States' contribution equals the combined total of the top three Asian countries (China, Saudi Arabia, and Türkiye). Other significant contributors include Canada (32), United Kingdom (18), Australia (13), and Malaysia (12). Iran, South Korea, and Taiwan each contributed 10 articles, while 15 other countries produced between five and nine publications.

The involvement of diverse nations highlights the universal nature of the turnover issue and the collective effort to understand and mitigate it. The dominance of certain countries, particularly the United States, suggests leadership in this field. However, the contributions from various regions indicate a rich and global perspective on this critical issue. This diversity offers diverse approaches and solutions tailored to different healthcare systems and cultural contexts.

Figure 9
Most Active Publishing Countries

Countries	TP	%
United States	71	20.29%
China	36	10.29%
Canada	32	9.14%
Saudi Arabia	21	6.00%
United Kingdom	18	5.14%
Türkiye	14	4.00%
Australia	13	3.71%
Malaysia	12	3.43%
Taiwan	10	2.86%
South Korea	10	2.86%
Iran	10	2.86%
Jordan	9	2.57%
Belgium	9	2.57%
Switzerland	8	2.29%
Italy	8	2.29%
Greece	8	2.29%
Finland	8	2.29%
South Africa	7	2.00%
Japan	7	2.00%
Spain	6	1.71%
Pakistan	6	1.71%
Netherlands	6	1.71%
Germany	6	1.71%
Sweden	5	1.43%
Ethiopia	5	1.43%
Egypt	5	1.43%

Collaborative Partnership Between Publishing Countries

Table 11 summarises the collaborative strength of 11 countries. The United States leads with a total link strength of 23.00 across 71 publications and 2504 citations. Saudi Arabia follows with a link strength of 18.00 (21 publications, 321 citations), China with 14.00 (36 publications, 862 citations), and Canada with 13.00 (32 publications, 1394 citations). The United Kingdom and Malaysia share a link strength of 11.00. Meanwhile, other countries (Jordan, Pakistan, Australia, Germany, and Spain) have link strengths ranging from 7.00 to 9.00, with publications ranging from 6 to 13 and citations from 59 to 703. These cross-continent collaborative partnerships highlight the international nature of research and contribute to a global understanding of turnover issues among healthcare employees.
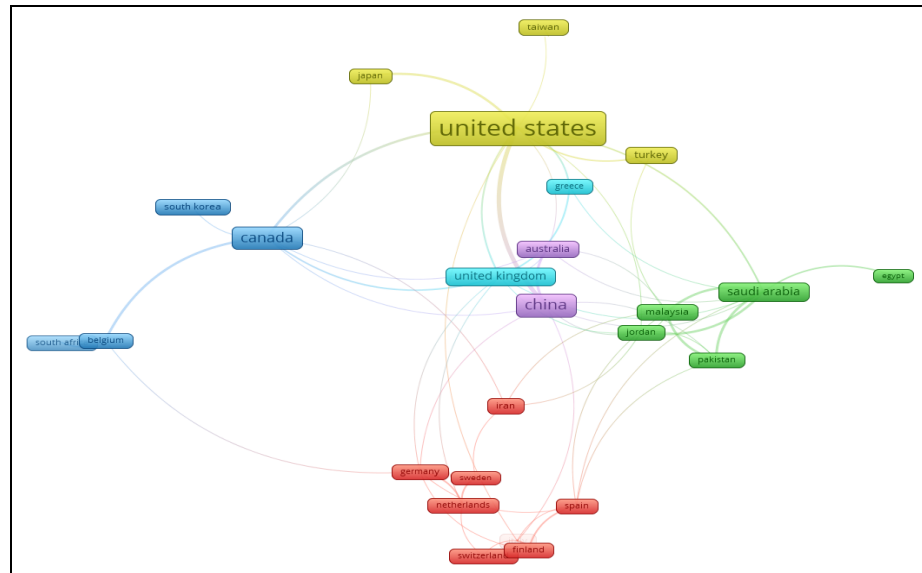
Table 11

Strength of Countries' Collaborative Partnership

Sources	TP	TC	TLS
United States	71	2504	23.00
Saudi Arabia	21	321	18.00
China	36	862	14.00
Canada	32	1394	13.00
United Kingdom	18	824	11.00
Malaysia	12	277	11.00
Jordan	9	63	9.00
Pakistan	6	49	9.00
Australia	13	703	8.00
Germany	6	266	7.00
Spain	6	59	7.00

Notes: TP = total publications; TC = total citations; TLS = Total link strength

Patterns of Co-Authorship Between Publishing Countries

Figure 10 presents a network visualisation of collaborative partnerships in research publications on healthcare employee turnover. The clustering algorithm groups countries with similarly coloured nodes, indicating close research relationships. The visualisation demonstrates that research collaborations tend to form strong regional networks, with certain countries acting as central hubs connecting multiple research partners.

Figure 10
Network Visualisation of the Countries' Partnership in Publications

The network visualisation illustrated in Figure 9 indicates that the United States emerged as a central hub that collaborated extensively with countries like Türkiye, Japan, and Taiwan. Saudi Arabia shows strong cooperation, primarily with Asian nations. Meanwhile, the United Kingdom and Germany lead European collaborations. China and Australia demonstrate close cooperation, representing an Asia-Oceania research relationship. A notable cross-continental collaboration has also occurred between Canada, South Korea, Belgium, and South Africa. The strength of these relationships varies, probably due to differences in research capabilities, resources, policies, and collaborative initiatives. Overall, this global collaboration network highlights the international nature of research on healthcare employee turnover, fostering diverse perspectives and shared knowledge between countries.

Most Influential Publications

The analysis of highly cited articles presented in Table 12 revealed that 16 papers garnered at least 100 citations each. These articles were published in reputable journals, including Annals of Internal Medicine, Journal of Nursing Scholarship, and International Nursing Review. Notably, the study by Linzer et al. (2009) emerged as the most influential, with 361 citations. Other highly cited papers include works by Whitehead et al. (2015), Nantsupawat et al. (2017), Flinkman et al. (2010), and Spence Laschinger et al. (2012), which examined factors influencing turnover intentions, such as moral distress, workplace environments, and authentic leadership.

Recent publications by Hodkinson et al. (2022), Yáñez et al. (2020), Duan et al. (2019), Nantsupawat et al. (2017), and Whitehead et al. (2015) have accrued citations at a higher average rate compared to earlier works, such as those by Van Bogaert et al. (2009), Flinkman et al. (2010), Delobelle et al. (2011), and Spence Laschinger et al. (2012). This suggests heightened research interest in recent years, potentially influenced by contemporary challenges in healthcare, particularly during the COVID-19 pandemic.

Table 12

Most Influential Publications

Title	Authors	Source	Research Participant	PY	TC	C/Y
Working Conditions in Primary Care: Physician Reactions and Care Quality.	Linzer, M.; Manwell, L.B.; Williams, E.S.; Bobula, J.A.; Brown, R.L.; Varkey, A.B.; Man, B.; McMurray, J.E.; Maguire, A.; Horner-Ibler, B.; Schwartz, M.D.	Annals of Internal Medicine	Physicians in the United States	20 09	361	24.0 7
Moral Distress Among Healthcare Professionals: Report of an Institution-Wide Survey.	Whitehead, P.B.; Herbertson, R.K.; Hamric, A.B.; Epstein, E.G.; Fisher, J.M.	Journal of Nursing Scholarshi p	Mixed groups of healthcare professional s in the United States	20 15	310	34.4 4
Effects of Nurse Work Environment on Job Dissatisfaction, Burnout, Intention to Leave.	Nantsupawat, A.; Kunaviktikul, W.; Nantsupawat, R.; Wichaikhum, O.-A.; Thienthong, H.; Poghosyan, L.	International Nursing Review	Nurses in Thailand	20 17	222	31.7 1
The Influence of Authentic Leadership on Newly Graduated Nurses' Experiences of Workplace Bullying, Burnout and Retention Outcomes: A Cross-Sectional Study.	Spence Laschinger, H.K.; Wong, C.A.; Grau, A.L.	International Journal of Nursing Studies	Nurses in Canada	20 12	203	16.9 2
The Impact of Workplace Violence on Job Satisfaction, Job Burnout, and Turnover Intention: The Mediating Role of Social Support.	Duan, X.; Ni, X.; Shi, L.; Zhang, L.; Ye, Y.; Mu, H.; Li, Z.; Liu, X.; Fan, L.; Wang,	Health and Quality of Life Outcomes	Physicians in China	20 19	155	31.0 0

	Y.					
Explaining Burnout and the Intention to Leave the Profession Among Health Professionals - A Cross-Sectional Study in a Hospital Setting in Switzerland.	Hämmig, O.	BMC Health Services Research	Physicians, nurses and midwives in Switzerland	20 18	147	24.5 0
Workplace Bullying in the UK NHS: A Questionnaire and Interview Study pn Prevalence, Impact and Barriers to Reporting.	Carter, M.; Thompson, N.; Crampton, P.; Morrow, G.; Burford, B.; Gray, C.; Illing, J.	BMJ Open	Mixed-employees, mainly nurses and midwives in the United Kingdom	20 13	145	13.1 8
Relationship Between Ethical Work Climate and Nurses' Perception of Organizational Support, Commitment, Job Satisfaction and Turnover Intent.	Abou Hashish, E.A.	Nursing Ethics	Nurses in Egypt	20 17	141	20.1 4
Do Perceived High Performance Work Systems Influence the Relationship Between Emotional Labour, Burnout and Intention to Leave? A Study of Australian Nurses.	Bartram, T.; Casimir, G.; Djurkovic, N.; Leggat, S.G.; Stanton, P.	Journal of Advanced Nursing	Nurses in Australia	20 12	137	11.4 2
Anxiety, Distress, and Turnover Intention of Healthcare Workers in Peru by Their Distance to the Epicenter During The COVID-19 Crisis.	Yáñez, J.A.; Jahanshahi, A.A.; Alvarez-Risco, A.; Li, J.; Zhang, S.X.	American Journal of Tropical Medicine and Hygiene	Mixed-healthcare workers in Peru	20 20	135	33.7 5
The Impact of Workplace Relationships on Engagement, Well-Being, Commitment and Turnover for Nurses in Australia and the USA.	Brunetto, Y.; Xerri, M.; Shriberg, A.; Farr-Wharton, R.; Shacklock, K.; Newman, S.; Dienger, J.	Journal of Advanced Nursing	Nurses in Australia	20 13	135	12.2 7
Hospital Nurse Practice Environment, Burnout, Job Outcomes and Quality	Van Bogaert, P.; Meulemans, H.; Clarke, S.;	Journal of Advanced Nursing	Nurses in Belgium	20 09	130	8.67

				PY	TC	C/Y
of Care: Test of a Structural Equation Model.	Vermeyen, K.; Van De Heyning, P.					
The Effects of High-Performance Work Systems on Hospital Employees' Work Attitudes and Intention to Leave: A Multi-Level and Occupational Group Analysis.	Ang, S.H.; Bartram, T.; McNeil, N.; Leggat, S.G.; Stanton, P.	International Journal of Human Resource Management	Hospital managers and employees in the United States	2013	121	11.00
Job Satisfaction and Turnover Intent of Primary Healthcare Nurses in Rural South Africa: A Questionnaire Survey.	Delobelle, P.; Rawlinson, J.L.; Ntuli, S.; Malatsi, I.; Decock, R.; Depoorter, A.M.	Journal of Advanced Nursing	Nurses in South Africa	2011	116	8.92
Nursing Work Environment, Turnover Intention, Job Burnout, and Quality of Care: The Moderating Role of Job Satisfaction.	Al Sabei, S.D.; Labrague, L.J.; Miner Ross, A.; Karkada, S.; Albashayreh, A.; Al Masroori, F.; Al Hashmi, N.	Journal of Nursing Scholarship	Nurses in Oman	2020	110	27.50
Escaping Bullying: The Simultaneous Impact of Individual and Unit-Level Bullying on Turnover Intentions.	Houshmand, M.; O'Reilly, J.; Robinson, S.; Wolff, A.	Human Relations	Nurses in Canada	2012	101	8.42

Notes: PY = publication year; TC = total citations; C/Y = average citations per year

DISCUSSION

The present study's bibliometric analysis discovers slow progress made in the early years from 2000 to 2016 and suggests a concerning trend. The mission toward UHC through MDGs and SDGs emphasises the necessity to give priority to medical personnel retention. However, this mission is unlikely to attract researchers' interest regarding turnover and intention to leave among healthcare facility workers. Nevertheless, a growing research interest and activity in turnover intention occurred, particularly from 2019 onwards. This growth in research has substantially enriched the body of knowledge on turnover and turnover intention, highlighting the increasing importance of addressing this issue within the healthcare sector.

The citation trend exhibits a similar pattern to the publication's growth. The concurrent growth in both publications and citations indicates a resourceful contribution of previous studies in stimulating further research works. It may also have driven the rise of interest among

subsequent researchers to address common issues and expand the linkage between a broader range of studies and turnover intentions, especially within the healthcare context. This is evidenced by the emergence of newly introduced keywords, such as pandemic, mental health, workplace violence, moral distress, and leadership, between 2019 and 2023, in addition to the commonly used keywords in earlier years.

The shift in keyword usage towards the latter part of the analysed timeframe suggests a significant change, likely driven by the COVID-19 pandemic, which boosted researchers' interest in healthcare employee turnover intentions. This surge in publications has contributed to more robust evidence-based empirical findings that have enriched existing research domains. Additionally, the emergence of behaviour-related keywords predicting intention to leave (e.g., burnout, mental health, moral distress, and organisational commitment) demonstrates the Theory of Planned Behaviour's (Ajzen, 1985) relevance in explaining the role of individual attitude, subjective norms, and perceived behavioural control in shaping turnover intentions among healthcare employees, that might risk healthcare organisations experience actual turnover among their employees.

Despite the growing interest in research works, this study found that nurses were overwhelmingly the focus of prolific authors and frequently appeared in the most influential publications. This signifies that issues and factors contributing to turnover intentions among nurses have received substantial research attention, leaving other frontline healthcare employees relatively understudied. Drawing from this scenario, there appears to be an imbalanced interest among research communities toward various groups of healthcare workers despite their common exposure to dire workplace implications and worsening well-being due to the threat of COVID-19.

The analysis of authors' affiliations and countries revealed a global representation from various institutions and regions, indicating a broadened scope of scholarly discourse on turnover intention in healthcare organisations. Co-authorship across different organisations and countries demonstrated the existence of collaborative efforts among authors. Consequently, collaborating authors mutually benefit from each other's highly cited publications. This also elevates their respective ratings among the research communities, and at the same time, helps in upholding their country's contribution to research development.

However, authors from the United States and Australia were the most prolific, and their localised studies were the most extensively cited, suggesting a limited involvement of authors and less influence of other sources originating from other nations. This lack of diverse representation may result in certain regions' unique contexts and issues being underexplored, potentially leading to a lack of generalisability and skewed practical implications. Consequently, a comprehensive understanding of turnover intentions and retention strategies applicable to healthcare employees globally may be hindered, emphasising the need for more inclusive and diverse research efforts in this domain.

The prevalence of authors' keywords and issues addressed by the most influential articles within the domain of turnover intention among healthcare workers represents the areas of research focus. Considerable attention has been devoted to organisational climate factors (e.g., workplace violence, work engagement, leadership styles, bullying, organisational support, career engagement). Additionally, individual emotional states (e.g., burnout, mental health concerns, moral distress, job satisfaction, and anxiety), particularly during the COVID-19 pandemic, have been extensively explored.

However, this study observes that individual intrinsic values (e.g., personality traits, coping skills, resilience, adaptability, agility, pro-social behaviours) and employer-employee relationship qualities (e.g., organisational trust, mutual respect, workplace treatment, employee recognition, conflict management, organisational justice) are underexplored despite their potential emergence as organisational and individual circumstances due to the strike of COVID-19. Thus, it can be argued that while a concentrated emphasis is given on specific topics, the discovery of other pertinent matters within the domain of turnover intention among healthcare workers is still lacking.

CONCLUSION

The present study's bibliometric analysis provides insights into the growing attention on the issue of healthcare employee turnover by scholarly communities and publishers globally, particularly within the timeframe spanning 2019 to 2023. This period has witnessed a remarkable escalation in research activities and publications within healthcare contexts. Generally, the analysis reveals a multifaceted landscape characterised by progressive growth within the domain of turnover intention research. It encompasses an extensive range of subject areas, signifying the interdisciplinary nature of the studies employed. Along with its progressions, a dynamic shift in the prevalent keywords employed is observed, reflecting the evolving discourse and conception underpinning the field of studies related to turnover intentions. Moreover, connected authorship across affiliations and continents indicates the existence of cooperative efforts undertaken by the involved researchers to collectively contribute to the development of the related body of knowledge.

The analysis highlights the contributing authors' diverse institutional and geographical affiliations, providing insightful perspectives on the contextual and regional differences that shape employee turnover intention across varied healthcare systems and cultural environments. This multifaceted approach has been significant in advancing a comprehensive understanding of the complex factors influencing healthcare employee retention globally. While citation counts serve as a quantitative measure of influence, they cannot fully capture the depth and nuances of scholarly contributions to the body of knowledge. However, the total citations garnered by the leading publishers and most influential publications reflect the extent to which subsequent studies have benefited from and built upon previous research contributions. Moreover, it evidences the pivotal role of key publishers and researchers in shaping the understanding of the global issue of healthcare employee turnover.

A rise in publications commenced around 2017, exhibiting a surge and steady growth in 2019, and continued to receive scholarly attention in subsequent years. This trajectory suggests that research on employee turnover intentions is a pre-pandemic endeavour that intensified during the COVID-19 pandemic. However, as this study encompasses only a limited timeframe in the immediate post-pandemic period, it may not adequately explicate whether the growing interest in this subject persists as the COVID-19 crisis gradually wanes. Therefore, further studies may be needed to examine the extent to which improved health crisis conditions could alter researchers' concerns about turnover and turnover intentions among healthcare professionals over time.

Despite the above limitation, this study identified progressive trends and developments, broadened subject areas, shifted keywords, collaborative authorship patterns, and the profound influence of published documents in expanding the corpus of studies on turnover intention among healthcare workers. The multidisciplinary and broad research scope highlights the

importance of policymakers adopting multifaceted evidence-based strategies to retain healthcare workers. Therefore, retention efforts should focus on creating supportive workplaces, promoting staff well-being, improving communication and leadership, and offering growth and recognition opportunities that meet the needs of healthcare workers.

ACKNOWLDEGEMENT

REFERENCES

Ajzen I. (1985). From intentions to actions: A theory of planned behavior. In: Kuhl J. & Beckmann J. (eds.) *Action Control*. SSSP Springer Series in Social Psychology. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-69746-3_2

Al Shbail, M. O., & Al Shbail, A. M. A. (2020). Organizational climate, organizational citizenship behaviour and turnover intention: Evidence from Jordan. *Management Science Letters*, *10*(16), 3749–3756. https://doi.org/10.5267/j.msl.2020.7.037

Bartol, T., Budimir, G., Dekleva-Smrekar, D., Pusnik, M., & Juznic, P. (2014). Assessment of research fields in Scopus and Web of Science in the view of national research evaluation in Slovenia. *Scientometrics, 98*(2), 1491-1504. https://doi.org/10.1007/s11192-013-1148-8

Burnham, J. F. (2006). Scopus database: A review. *Biomedical Digital Libraries, 3*, 1–8. https://doi.org/10.1186/1742-5581-3-1

Cao, T., Huang, X., Wang, L., Li, B., Dong, X., Lu, H., Wan, Q., & Shang, S. (2020). Effects of organisational justice, work engagement and nurses' perception of care quality on turnover intention among newly licensed registered nurses: A structural equation modelling approach. *Journal of Clinical Nursing*, *29*(13–14), 2626–2637. https://doi.org/10.1111/jocn.15285

Cohen, G., Blake, R. S., & Goodman, D. (2016). Does turnover intention matter? Evaluating the usefulness of turnover intention rate as a predictor of actual turnover rate. *Review of Public Personnel Administration*, *36*(3), 240–263. https://doi.org/10.1177/0734371x15581850

Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, *133*(May), 285–296. https://doi.org/10.1016/j.jbusres.2021.04.070

El Koussa, M. E., Atun, R., Bowser, D., & Kruk, M. E. (2016). Factors influencing physicians' choice of workplace: Systematic review of drivers of attrition and policy interventions to address them. *Journal of Global Health*, *6*(2), 020403. https://doi.org/10.7189/jogh.06.020403

Francis, B. R., Ahmad, R., & Abdullah, S. M. (2023). A bibliometric analysis on turnover intention. *International Journal of Business and Society*, *24*(2), 651–676. https://doi.org/10.33736/ijbs.5950.2023

George, J., & Wallio, S. (2017). Organizational justice and millennial turnover in public accounting. *Employee Relations*, *39*(1), 112–126. https://doi.org/10.1108/er-11-2015-0208

Harris, C. M., Lavelle, J. J., & McMahan, G. C. (2018). The effects of internal and external sources of justice on employee turnover intention and organizational citizenship behavior

toward clients and workgroup members. *International Journal of Human Resource Management*, *31*(17), 2141–2164. https://doi.org/10.1080/09585192.2018.1441163

Huang, X., Li, Z., & Wan, Q. (2019). From organisational justice to turnover intention among community nurses: A mediating model. *Journal of Clinical Nursing*, *28*(21–22), 3957–3965. https://doi.org/10.1111/jocn.15031

Hung, M. S. Y., & Lam, S. K. K. (2020). Antecedents and contextual factors affecting occupational turnover among registered nurses in public hospitals in Hong Kong: A qualitative descriptive study. *International Journal of Environmental Research and Public Health*, *17*(11), 3834. https://doi.org/10.3390/ijerph17113834

Hwang, E., & Yi, Y. (2021). Workplace spirituality and organizational justice in turnover intention of mental health professionals at small-sized centres. *Journal of Nursing Management, 3*, 328-335. https://doi.org/10.1111/jonm.13459

Islam, T., Ali, G., & Ahmed, I. (2018). Protecting healthcare through organizational support to reduce turnover intention. *International Journal of Human Rights in Healthcare*, *11*(4), 232–243. https://doi.org/10.1108/ijhrh-03-2017-0012

Kang, M., & Sung, M. (2019). To leave or not to leave: the effects of perceptions of organizational justice on employee turnover intention via employee-organization relationship and employee job engagement. *Journal of Public Relations Research*, *31*(5–6), 152–175. https://doi.org/10.1080/1062726x.2019.1680988

Loura, J., Jimbun, A., Mohamed, R., Shah, A., & Mahomed, B. (2021). A bibliometric analysis of employee turnover intention in the hotel industry. *Journal of Management & Muamalah*, *11*(2), 2180–1681.

Manoppo, V. P. (2020). Transformational leadership as a factor that decreases turnover intention: a mediation of work stress and organizational citizenship behavior. *TQM Journal*, *32*(6), 1395–1412. https://doi.org/10.1108/tqm-05-2020-0097

Norizan, N. S., Arham, A. F., Arham, A. F., & Norizan, M. N. (2023). Exploring the research landscape of turnover intention: A bibliometric analysis. *Information Management and Business Review*, *15*(3), 361–372. https://doi.org/10.22610/imbr.v15i3(i).3546

Perreira, T. A., Berta, W., & Hebert, M. (2018). The employee retention triad in healthcare: Exploring relationships among organizational justice, affective commitment and turnover intention. *Journal of Clinical Nursing*, *27*(7–8), e1451–e1461. https://doi.org/10.1111/jocn.14263

Sai, V. S., & Pinapati, A. K. (2023). Insights on employee turnover: A bibliometric analysis. *Journal of Law and Sustainable Development*, *11*(2), 1–39. https://doi.org/10.55908/sdgs.v11i2.633

Suifan, T. S., Diab, H., & Abdallah, A. B. (2017). Does organizational justice affect turnover-intention in a developing country? The mediating role of job satisfaction and organizational commitment. *Journal of Management Development*, *36*(9), 1137–1148. https://doi.org/10.1108/jmd-02-2017-0048

Tian, H., Iqbal, S., Akhtar, S., Qalati, S. A., Anwar, F., & Khan, M. A. S. (2020). The impact of transformational leadership on employee retention: Mediation and moderation through organizational citizenship behavior and communication. *Frontiers in Psychology*, *11*(314), 1–11. https://doi.org/10.3389/fpsyg.2020.00314

Uzkiyyah, N. U., Qamari, I. N., & Rahayu, M. K. P. (2022). Bibliometric analysis of turnover intention using VOSviewer. *Journal of Economics and Business*, *5*(3), 239–248. https://doi.org/10.31014/aior.1992.05.03.451

Wen, T., Zhang, Y., Wang, X., & Tang, G. (2018). Factors influencing turnover intention among primary care doctors: A cross-sectional study in Chongqing, China. *Human Resources for Health*, *16*(1), 1–11. https://doi.org/10.1186/s12960-018-0274-z

Zahednezhad, H., Hoseini, M. A., Ebadi, A., Farokhnezhad Afshar, P., & Ghanei Gheshlagh, R. (2021). Investigating the relationship between organizational justice, job satisfaction, and intention to leave the nursing profession: A cross-sectional study. *Journal of Advanced Nursing*, *77*(4), 1741–1750. https://doi.org/10.1111/jan.14717

Zhang, H., Wong, L. P., & Hoe, V. C. W. (2023). Bibliometric analyses of turnover intention among nurses: Implication for research and practice in China. *Frontiers in Psychology*, *14*(1042133), 1–8. https://doi.org/10.3389/fpsyg.2023.1042133

Zupic, I., & Čater, T. (2015). Bibliometric methods in management and organization. *Organizational Research Methods*, *18*(3), 429–472. https://doi.org/10.1177/1094428114562629