

Exploring Emotional Intelligence in Healthcare Service Quality: A Bibliometric Analysis and Visualization of Trends, Themes, and Emerging Hot-spots.

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ABSTRACT

This study endeavors to explore the bibliometric analysis and visualization with regard to the intellectual and thematic evolution and implications of emotional intelligence (EI) in the healthcare sector. Bibliometric data were extracted from the Scopus database through a structured query and then analyzed with the help of software such as R-Bibliometrix, Python, and VOSviewer. This study accounted for 543 documents authored by 1,863 researchers from 61 different countries, reflecting an annual growth rate of 15.02%. The United Kingdom and the United States evolved as the most productive countries, and The International Journal of Environmental Research and Neuroscience ranked as the top publishing source. Emphasizing EI's relationship to doctor burnout, job satisfaction, and patient satisfaction, Weng emerged as the most cited author. Co-occurrence and conceptual analysis of the studies revealed three thematic clusters: Emotional Intelligence and healthcare quality, psychological well-being, and healthcare organizations. Emerging trends emphasize burnout, empathy, tele-medicine, and resilience during crises such as the COVID-19 pandemic. These studies highlight the increasing interdisciplinary significance of Emotional Intelligence in enhancing clinical competence, patient care, and healthcare system performance.

Keywords: Emotional Intelligence, Healthcare, Healthcare Quality, Bibliometric Analysis.

INTRODUCTION:

The cognition-emotion nexus is a fundamental principle of emotional intelligence, which implies that emotions play an intensive role in everyday life behavior, decision-making, and shaping of the relationships with others (Mayer & Salovey, 1993). The research of emotional intelligence within different professional paradigms has shown an observable increase in the past few years. Consequently, the significant impact of emotional intelligence on improving the overall well-being, social, and emotional growth, and increasing academic performance has been realized in all field of work (Gkintoni et al., 2023)).

Extensive studies have been conducted as a consequence of the scholarly literature highlighting more about emotional intelligence, especially in the field of healthcare. Indicatively, research has indicated the efficiency of interventions aimed at strengthening emotional intelligence amongst the healthcare practitioners (Romanelli et al., 2006). Emotional intelligence of physicians in the healthcare sector has turned out to become more and more relevant (Dott et al., 2022). Together with academic knowledge and clinical skills, healthcare professionals should be compassionate and ethical providers who can recognize the emotional needs of their patients and create a positive change (Larin

et al., 2013), which unambiguously suggests that patients tend to respect the interpersonal aspects of a physician, as well as his/her professional experience (Manzoor et al., 2019).

Patient happiness has emerged as a top priority for hospitals (Manzoor et al., 2019). Therefore, medical professionals are responsible for patients' physical and mental well-being (Frajo-Apor et al., 2016). Simultaneously, Healthcare providers' overall performance, which affects their burnout levels, is significantly influenced by their emotional intelligence (Unal, 2014). Furthermore, healthcare professionals need to be conscious of their own and others' emotions to operate at their best. Unlike intelligence quotient (IQ), EI can be learned, developed, and enhanced (Sharp et al., 2020), as there is a positive correlation between emotional intelligence and learning, and they are mutually dependent (Zhylin et al., 2024). Targeted interventions effectively raise the emotional quotient; thus, it can be regarded as a key area for healthcare professionals' further development (Skarbaliene, 2019). In addition, research reveals that by raising emotional intelligence, it is possible to alleviate stress, avoid burnout, and increase the feeling of work satisfaction, which are the most significant factors when healthcare policies and practices advocate patient-centered care (Sharp et al., 2020).

In addition, emotional intelligence is projected to be the leading indicator of performance in the healthcare sector (Birks & Watt, 2007). Hence, a bibliometric analysis of research identifying emotional intelligence as a theme is a timely and necessary undertaking. This approach provides a detailed explanation of the existing literature, reveals the main tendencies of research, and design the intellectual framework of the discipline. Besides, it offers profound insights for future studies to be conducted and advocacy to make emotional intelligence an essential part of healthcare research and practice. Moreover, Bibliometric analysis also serves as a tool for the healthcare sector to systematically evaluate the evolution of a focus on emotional intelligence and its incorporation into the healthcare context (Ellegaard & Wallin, 2015).

Background of the Study

Emotional Intelligence in Health care

Emotional intelligence (EI) is essential for social and spiritual competence across all fields, but it is particularly vital in healthcare, where emotions significantly impact both individual and organizational well-being (Segal et al., 2023). The practice of emotional intelligence skills plays a crucial role in strengthening social relationships and significantly contributes to improving healthcare and health education (Basem Abbas Al, 2018; Rahmati & Mohebbi-Dehnavi, 2018). Aligned with the importance of EI in healthcare, it fosters six essential skills for healthcare workers: intrapersonal skills, interpersonal skills, adaptability, stress management, general mood, and self-motivation (Andal, 2021). Again, it is vital for primary health care providers (behvarz) to enhance their interactions, job performance, and satisfaction (Rahmati & Mohebbi-Dehnavi, 2018). It has also been found that all the elements of emotional intelligence contribute to the enhancement of emotions of personal achievement and that emotional intelligence itself has an effect on lowering burnout (Ünal, 2014). Moreover, enhanced emotional intelligence in healthcare providers develops leadership and non-technical skills, reduces stress and burnout, and improves patient interactions and care (Sharp et al., 2020). In the context of healthcare service quality, managers' emotional intelligence levels have an impact on hospital service quality, whether the hospital is private or public (Aldaod et al., 2019). For instance, integrating emotional intelligence into crisis leadership education for healthcare workers can enhance their ability to adapt, collaborate, and communicate effectively during crises, such as the COVID-19 pandemic (Farmer et al., 2020; Hurley & Barker, 2012; Hurley & Stansfield, 2018; Larsen & White, 2025). Additionally, research underscores emotional intelligence as a key factor in the relationship between constructive innovation and its implications for healthcare (Thajil & Al-Abrow, 2024). It helps protect against Compassion Fatigue (CF), while decision-making styles influence its onset (Filipponi et al., 2022) and, therapies targeting burnout and Compassion Fatigue (CF) in healthcare workers should emphasize emotional intelligence, particularly clarity of emotions (Jowsey et al., 2024).

Recent research highlights the vital role of Emotional Intelligence (EI) in tele-medicine. It is also essential for

building resilience during global health crises. The fast shift to digital healthcare requires high EI to maintain empathy. This helps bridge the “digital divide” between providers and patients. Strong rapport is harder to maintain in virtual environments without these skills.

EI serves as a foundation for both individual and organizational resilience. During the COVID-19 pandemic, it helped professionals adapt to extreme stress. It also helped mitigate burnout and sustain high-quality care. Healthcare systems should integrate EI into crisis leadership and digital literacy. This will better equip the workforce for future disruptions. Ultimately, EI ensures that medical practice remains human-centric.

Bibliometric Analysis

Bibliometric analysis is a quantitative technique that can be used to identify and categorize scientific publications, authors, and institutions in a particular area (Lazarides et al., 2023; Merigó & Yang, 2017; Passas, 2024). It involves sourcing data from various databases, cleaning it, and then applying different bibliometric methods to the data to obtain substantive insights and spot the trends that are rising (Merigó & Yang, 2017). In addition, bibliometric analysis plays an important role in understanding research dynamics and trends in different areas, which eventually leads to insights about scholarly productivity, impact, and thematic development of a discipline. Specifically, Bibliometric research provides a detailed comprehension of the academic environment by dissecting the trends of publications, patterns of authorship, influence of citations, occurrences of keywords, and even the locations from where the research is coming (Biju et al., 2024; Hassan & Duarte, 2024; Moreira & Vidor, 2024; Rahman et al., 2024; Simion et al., 2023). The medical field, operations research, and management science literature have progressively embraced this method, which has been used as a base for AI studies to identify the most influential papers, authors, and emerging trends more easily, effectively, and quickly (Lazarides et al., 2023; Nur'aeni & Zalsahra, 2024; Passas, 2024).

Employing instruments like VOSviewer, Bibliometrix, CiteSpace, and pyBibX, researchers can realize their goals by presenting and scrutinizing the data that delineates the progression and authority of the studies in different fields (Nur'aeni & Zalsahra, 2024). In addition, bibliometric analysis plays a very important role in technology forecasting, as it helps in making decisions that involve uncertainties and in exploring future research directions (Daishiro Yoshida, 2010).

Aligned with this methodological approach, the present study aims to address the following research questions:

RQ1: What trends can be observed in the publication of Emotional Intelligence (EI) in healthcare research articles from 2000 to 2023?

RQ2: Which journals, countries, and institutions have contributed most actively to EI on Healthcare research?

RQ3: Who are the most productive and most influential authors based on publication count and citation impact?

RQ4: What emerging themes and recent research hotspots can be identified in the field of EI on Healthcare?

Through a methodical inquiry into these questions, this bibliometric study intends to exhaustively map the present scenario of Emotional Intelligence (EI) research in the healthcare sector and outline its direction in future development and practical implementation. The ultimate objective of this work is to establish the relationships among unexplored dimensions in the “emotional intelligence–healthcare” conversation and to endorse cross-disciplinary research, which, in turn, will facilitate more nuanced and significant implementation in the clinical, educational, and organizational healthcare environments.

Methodology

Searching strategy and Data collection

The literature search was carried out in Scopus using the following query: TITLE-ABS-KEY (“Emotional Intelligence”) AND (“Health Care” OR “health care sector” OR “Health Personnel” OR “Patient satisfaction”). The search was limited to English-language articles published between 2000 and 2023. To be more relevant to the disciplines, the search was additionally filtered to include only those documents that are under the categories of Medicine, Nursing, Social Sciences, Psychology, Business, and Health Professions. In addition, only original research articles (DOCTYPE: ar) were considered. Such an exhaustive query scheme was intended to pinpoint the publications that theoretically contribute to, empirically substantiate, or critically examine the role, application, and impact of emotional intelligence in different healthcare scenarios, including provider–patient interactions, healthcare personnel competencies, organizational performance, and patient satisfaction.

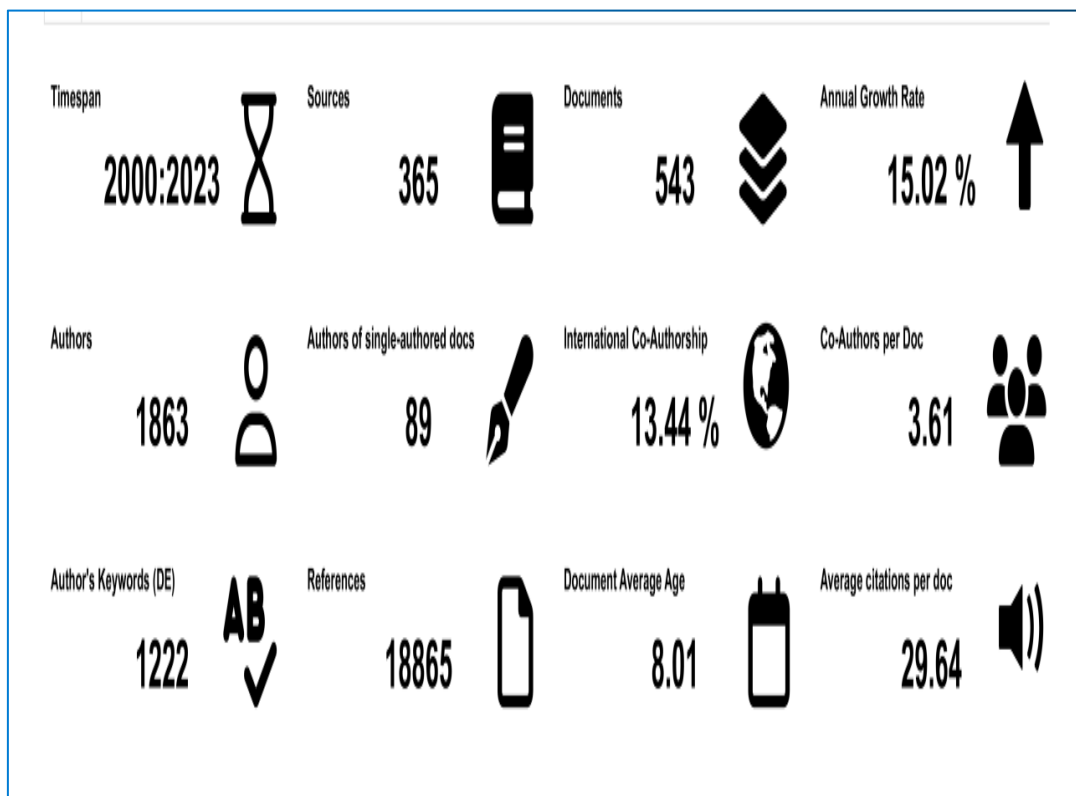


Figure 1. The overall visualization of retrieved database

The extracted data (Figure-1) represents 1863 authors’, of which 89 were single-author papers. In addition, the average number of co-authors per paper is 3.61; thus, a collaborative research environment is implied. International collaboration accounted for 13.44% of the total publications, indicating a moderate yet significant level of global engagement. The dataset comprises 1,222 different authors’ keywords and 18,865 total references, indicating the breadth of the literature in the researched field. The average of 29.64 citations per paper shows that the research has made a considerable academic impact, while the average paper age of 8.01 years demonstrates a good balance between the integration of both foundational and recent research. Overall, the analyzed database depicts the increasing cross-disciplinary interest in

emotional intelligence as a crucial factor in healthcare delivery and patient outcomes, thus leading to its positioning as a slowly changing and influential academic research domain.

A total of 543 documents were extracted, published across 365 unique sources, indicating a steady growth of scholarly focus with an annual growth rate of 15.02%. The analysis also revealed that the average number of co-authors per paper is 3.61, thus, the collaborative nature of the research environment is stressed. The publications accounted for 13.44% of international collaborations, reflecting a moderate but significant degree of global engagement. An average of 29.64 citations per paper indicates significant academic influence, and the average paper age of 8.01 years shows a good mix of both

foundational and recent research. The database, in general, paints a picture of the growing interdisciplinary interest in emotional intelligence as a main factor in healthcare delivery and patient outcomes, which is leading to its recognition as a gradually developing and prominent area of academic research.

Data Analysis and Visualization (Tools and Methods)

The analysis of the extracted bibliometric dataset demanded the deployment of an extensive methodological framework, which basically covered descriptive statistics, bibliometric indicators, and computational tools. All data handling, statistical analysis, and plotting were accomplished in Python and R, mainly using the bibliometrix package by (Aria & Cuccurullo, 2017). The hybrid approach of utilizing two programming languages provided a thorough and scalable analysis, thus making quantitative measurement and insightful visualization of scholarly trends feasible.

To evaluate the impact of the research works, citation analysis was employed using basic metrics such as citation counts and the h-index, a famous indicator introduced by (Hirsch, 2005) that represents the degree of interaction between the productivity and citation impact of a scholar. Mathematically, the h-index is represented as:

$$h - Index = \max \left\{ h: \sum_{i=1}^h c_i \geq h \right\}$$

Where, c_i = Citation count of the i^{th} most cited publication

This measure provides a reliable estimation of the impact generated by publications in the dataset.

The authorship productivity trend was also analyzed using Lotka's Law (Lotka, 1926), which refers to an inverse square relationship between the number of authors and their publication counts. The functional form of Lotka's law is as follows:

$$f(n) = \frac{C}{n^2}$$

Where, $f(n)$ = Proportion of authors with n publications

C = Normalizing Constant

This analysis evaluated the extent to which the observed data aligned with the expected theoretical distribution.

This analysis estimated the discrepancy between the real data and the theoretical distribution that would be expected.

The contribution of each institutional and geographical unit to scholarly output was determined using affiliation data. Local trends and collaboration patterns were represented using choropleth and connection maps, respectively, in which the sizes of the nodes reflected research output and the thickness of the links showed the strength of collaboration. Temporal trends were also studied based on the yearly development of publications and citations. This chronological study revealed the

pattern of growth, newly emerging areas of interest, and shifts in the research focus. Citation burst detection and trending topic analysis could be performed with the help of pyBibX, which enabled the identification of time intervals that attracted the most intense scholarly attention to specific themes.

For example, bibliometric networks, such as keyword co-occurrence and institutional collaboration, have been visibly represented with the support of VOSviewer's force-directed layout. The latter algorithm minimizes the interaction energy, which is mathematically defined as:

$$E = \sum_{i < j} w_{ij} \|x_i - x_j\|^2$$

Where, w_{ij} denotes the strength of association between nodes i and j ,

And x_i, x_j are their spatial coordinates.

The optimization of this energy function results in a spatial configuration where related nodes are situated closer together, enhancing the understanding of the network structures.

Together, these tools and methods formed a robust analytical framework, capable of delivering deep insights into the structure, evolution, and impact of the scientific literature under investigation.

Results and Interpretations

Trend in Publications pattern

The mean number of publications from 2000 to 2023 was 22.625 (SD = 15.18). The total percentage of relative growth was 15.02%. The highest percentage of relative growth was observed in 2023 with a total of 50 publications and the lowest productivity was observed in 2003 with just 1 publication. The table-1 shows the total number of publications in relative journals over time. The total number of journals increased significantly over time as indicated by a simple linear regression $p < 0.01$ and R^2 is 0.94 (Figure-2). Further, the annual number of publications, annual growth rate (AGR), and relative growth Rate (RGR) presented in Table-1. The AGR indicates the percentage of change in the number of publications over one year. The AGR is calculated by the following equation: $AGR = [(TP \text{ ending value} - TP \text{ beginning value}) / TP \text{ beginning value}] * 100$, where TP is total number of publications per year. The RGR was calculated based on the following equation: $RGR = [\log_e W_2 - \log_e W_1] / (T_2 - T_1)$, where $\log_e W_2$ is the log of the final number of publications after a specific period of interval whereas $\log_e W_1$ is the log of the initial number of publication and $(T_2 - T_1)$ is the unit difference between the final time and initial time.

Table 1. Annual number of Publications, AGR, RGR

Year	Frequency	Cumulative Total	Log _e W	AGR	RGR
2000	2	2	0.69	0	0
2001	3	5	1.61	50	0.92
2002	3	8	2.08	0	0.47
2003	1	9	2.2	-66.67	0.12
2004	5	14	2.64	400	0.44
2005	8	22	3.09	60	0.45
2006	8	30	3.4	0	0.31
2007	8	38	3.64	0	0.24
2008	13	51	3.93	62.5	0.29
2009	13	64	4.16	0	0.23
2010	19	83	4.42	46.15	0.26
2011	27	110	4.7	42.11	0.28
2012	32	142	4.96	18.52	0.26
2013	34	176	5.17	6.25	0.21
2014	29	205	5.32	-14.71	0.15
2015	30	235	5.46	3.45	0.14
2016	26	261	5.56	-13.33	0.1
2017	31	292	5.68	19.23	0.11
2018	38	330	5.8	22.58	0.12
2019	39	369	5.91	2.63	0.11
2020	43	412	6.02	10.26	0.11
2021	41	453	6.12	-4.65	0.09
2022	40	493	6.2	-2.44	0.08
2023	50	543	6.3	25	0.1

Note: AGR: Annual Growth Rate, RGR: Relative Growth Rate

From the retrieved data base, there is an overall growth in the number of publications across all the contextual areas of research in the fields of Emotional Intelligence as a primary determinant factor in the field of health care with the overall growth rate of 15.02%. The growth in publication in the field of Emotional Intelligence is also evident from the applicability of it in numerous other industries along with health care as burnout and job satisfaction (Bru-Luna et al., 2021). Undoubtedly, the increasing quantity of research indicates the significance of emotional intelligence and uncovers a previously untapped aspect of human potential.



Figure 2. Growth of Publications over time

Analysis of Journals

Figure 3 presents the leading and most productive research sources based on publication count (NP), total citations (TC), and Total Citations per Year (TCpY). The visualization demonstrates that Journal of Nursing Management and International Journal of Environmental Research and Public Health emerged as the most productive sources, each contributing 11 publications.

However, their citation influence differed substantially, with International Journal of Environmental Research and Public Health achieving a considerably higher TCpY (37.71) compared to Journal of Nursing Management (13.83), indicating stronger annual scholarly visibility.

Among the remaining highly productive journals, Medical Education exhibited the greatest citation impact overall, recording the highest TC (780) and TCpY (43.33) despite publishing only eight articles. Similarly, BMC Medical Education and Midwifery, each with seven publications, demonstrated notable citation influence with TCpY values of 19.94 and 18.80, respectively. Health Care Manager and Journal of Surgical Education also contributed seven publications, although their annual citation influence remained comparatively lower.

Moderately productive sources such as Journal of Clinical Nursing, Journal of Professional Nursing, and BMJ Open displayed balanced publication output and citation performance. In contrast, journals including Leadership in Health Services, Gerontology and Geriatrics Education, and Nurse Education Today exhibited relatively lower TCpY values, suggesting limited annual citation impact despite their presence within the research domain.

Overall, the analysis indicates that publication productivity alone does not determine scholarly influence, as several journals with comparatively fewer publications achieved substantially higher annual citation impact, reflecting stronger academic visibility and research significance.



Figure 3. Most Productive and impactful Journals

Citation Analysis

Table-3 indicates that the retrieved documents accumulated a total of 16,095 citations, with an average

citation count of 39.94 per document (SD = 42.50). The year 2011 marked the peak in citation activity, amassing 5,189 citations, corresponding to a mean of 192.19 citations per document. Conversely, 2003 experienced the lowest citation impact, with only 9 citations, yielding a mean of 9 citations per document. Figure-4 illustrates the temporal evolution of the average total number of citations.

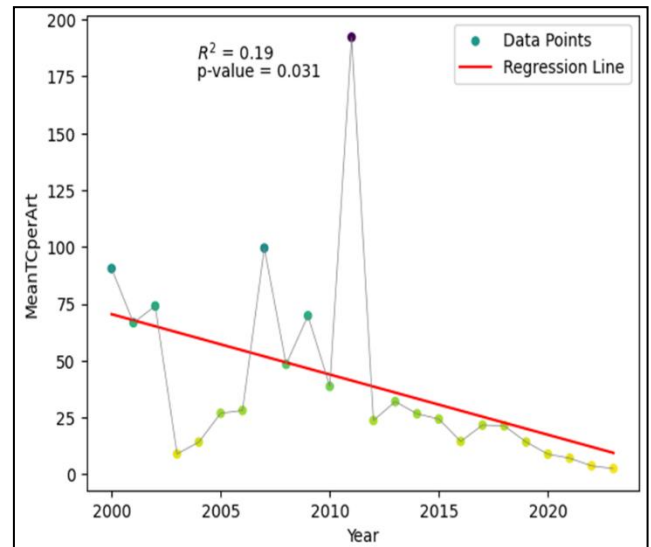


Figure 4. Growth of Citations over time

In fact, the years 2011 and some other years demonstrated a significant increase in the number of citations; however, according to a simple linear regression analysis, the rise in average citations over the period studied was not statistically significant. The model resulted in an R^2 value of 0.19 and a p-value of 0.031 (Figure-4), which means that the model has a relatively weak explanatory power though the trend is statistically significant. This means that while some years reached a higher citation activity, the differences did not result in a significant or sustained upward trend of average citation rates over time. Therefore, the citation landscape can be considered as a series of peaks that have appeared from time to time rather than a consistent, gradual increase throughout the period. This pattern may be linked to the field's rapid shift toward systemic crisis management during global disruptions, particularly the COVID-19 pandemic. As healthcare management research became increasingly reactive and problem-oriented, topics such as emergency leadership, workforce resilience, telehealth, and hospital preparedness received heightened attention. Consequently, a small number of crisis-focused studies accumulated exceptionally high citations, resulting in structural citation spikes rather than a steady longitudinal trend.

Table 3. Summary of the Citation Analysis

Year	N	TC	MeanTCperArt	MeanTCperYear	CitableYears
2000	2	181	90.50	3.62	25
2001	3	200	66.67	2.78	24
2002	3	222	74.00	3.22	23
2003	1	9	9.00	0.41	22
2004	5	71	14.20	0.68	21
2005	8	215	26.88	1.34	20
2006	8	225	28.12	1.48	19
2007	8	796	99.50	5.53	18
2008	13	629	48.38	2.85	17
2009	13	907	69.77	4.36	16
2010	19	735	38.68	2.58	15
2011	27	5189	192.19	13.73	14
2012	32	758	23.69	1.82	13
2013	34	1088	32.00	2.67	12
2014	29	773	26.66	2.42	11
2015	30	730	24.33	2.43	10
2016	26	377	14.50	1.61	9
2017	31	672	21.68	2.71	8
2018	38	811	21.34	3.05	7
2019	39	555	14.23	2.37	6
2020	43	382	8.88	1.78	5
2021	41	292	7.12	1.78	4
2022	40	150	3.75	1.25	3
2023	50	128	2.56	1.28	2

Tables 4 and 5 present the top 10 most cited articles and authors, respectively, within the retrieved body of literature. The article that received the highest number of citations is titled “*Associations Between Emotional Intelligence and Doctor Burnout, Job Satisfaction, and Patient Satisfaction*,” authored by Weng H-C, 2011. This publication amassed a total of 182 citations, averaging 15.17 citations per year, underscoring its significant influence and relevance in the field.

Table 4. Top 10 cited articles

Author	year	TI	SO	TC	TCpY
WENG H-C	2011	ASSOCIATIONS BETWEEN EMOTIONAL INTELLIGENCE AND DOCTOR BURNOUT, JOB SATISFACTION AND PATIENT SATISFACTION	MEDICAL EDUCATION	182	13
WENG H-C	2011	THE EFFECT OF SURGEON EMPATHY AND EMOTIONAL INTELLIGENCE ON PATIENT SATISFACTION	ADVANCES IN HEALTH SCIENCES EDUCATION	97	6.929
JAMSHED S	2019	RELATIONSHIP BETWEEN TEAM CULTURE AND TEAM PERFORMANCE THROUGH LENS OF KNOWLEDGE SHARING AND TEAM EMOTIONAL INTELLIGENCE	JOURNAL OF KNOWLEDGE MANAGEMENT	96	16
FRESHMAN B	2002	EMOTIONAL INTELLIGENCE: A CORE COMPETENCY FOR HEALTH CARE ADMINISTRATORS	HEALTH CARE MANAGER	95	4.13
WENG H-C	2008	DOCTORS' EMOTIONAL INTELLIGENCE AND THE PATIENT-DOCTOR RELATIONSHIP	MEDICAL EDUCATION	87	5.118
WENG H-C	2008	DOES THE PHYSICIAN'S EMOTIONAL INTELLIGENCE MATTER?: IMPACTS OF THE PHYSICIAN'S EMOTIONAL INTELLIGENCE ON THE TRUST, PATIENT-PHYSICIAN RELATIONSHIP, AND SATISFACTION	HEALTH CARE MANAGEMENT REVIEW	85	5
PÉREZ-FUENTES MC	2018	BURNOUT RISK AND PROTECTION FACTORS IN CERTIFIED NURSING AIDES	INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	73	10.429
CODIER E	2008	MEASURING THE EMOTIONAL INTELLIGENCE OF CLINICAL STAFF NURSES: AN APPROACH FOR IMPROVING THE CLINICAL CARE ENVIRONMENT	NURSING ADMINISTRATION QUARTERLY	68	4
PÉREZ-FUENTES MC	2018	THE ROLE OF EMOTIONAL INTELLIGENCE IN ENGAGEMENT IN NURSES	INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	60	8.571
BRADLEY EH	2001	DEVELOPING LEADERSHIP IN HEALTHCARE ADMINISTRATION: A COMPETENCY ASSESSMENT TOOL	JOURNAL OF HEALTHCARE MANAGEMENT	47	1.958

Note. TI: Title of the article, **SO:** Source, **TCpY:** Total Citation per Year

Table 5. Top 10 cited authors (Arranged in the order of h-index)

Author	h_index	g_index	m_index	TC	NP	PY_start
PÉREZ-FUENTES MC	5	5	0.714	186	5	2018
WENG H-C	5	6	0.278	465	6	2007
ASIAMAH N	3	3	0.375	32	3	2017
BRADLEY EH	3	3	0.125	55	3	2001
FRESHMAN B	3	3	0.13	126	3	2002
JURADO MMM	3	3	0.429	104	3	2018
LINARES JJG	3	3	0.5	54	3	2019
MÁRQUEZ MMS	3	3	0.429	104	3	2018
ANAGNOSTOPOULOS F	2	2	0.182	89	2	2014
BENZO RP	2	2	0.222	50	2	2016

Note. TC: Total Citations, **NP:** Number of publications

Again, Weng distinguishes himself as the most cited author within the dataset, with his body of work—comprising six publications—accumulating a total of 465 citations. Notably, his scholarship includes the highest-cited individual article in the corpus. These metrics underscore his substantial influence within academic discourse, particularly in advancing research on emotional intelligence and its applications in healthcare contexts. The sustained citation impact of his contributions attests to their enduring significance and continued relevance in shaping contemporary scholarly and practical paradigms in the field.

Analysis of Country: Productivity, Geographical distribution and collaborations

The analysis of the extracted literature reveals contributions from researchers across 61 distinct countries. Table-6 presents the countries with a minimum of five publications, which indicates their publication frequency, total citation count, and a breakdown of single-country publications (SCP) versus multiple-country publications (MCP). With 147 publications and 8,006 citations, the United States comes first with an average of 54.5 citations per article followed closely by the United Kingdom with 42 publications and 887 citations, averaging 21.1 citations per publication.

Table 6. Countries with a minimum productivity of five publications

Country	Articles	Articles %	SCP	MCP	MCP %	TC	Average Article Citations
USA	147	27.07	136	11	7.48	8006	54.5
UNITED KINGDOM	42	7.73	38	4	9.52	887	21.1
SPAIN	26	4.79	18	8	30.77	665	25.6
AUSTRALIA	25	4.60	19	6	24.00	544	21.8
CANADA	19	3.50	15	4	21.05	420	22.1
IRAN	17	3.13	17	0	0.00	170	10
CHINA	16	2.95	12	4	25.00	578	36.1
INDIA	12	2.21	12	0	0.00	64	5.3
ISRAEL	6	1.10	3	3	50.00	234	39
ITALY	6	1.10	6	0	0.00	65	10.8
KOREA	6	1.10	6	0	0.00	47	7.8
FINLAND	5	0.92	5	0	0.00	35	7
GREECE	5	0.92	3	2	40.00	72	14.4
IRELAND	5	0.92	4	1	20.00	112	22.4
NETHERLANDS	5	0.92	4	1	20.00	115	23
PAKISTAN	5	0.92	4	1	20.00	65	13
POLAND	5	0.92	5	0	0.00	32	6.4
TURKEY	5	0.92	5	0	0.00	203	40.6

Note. TC: Total Citations, SCP: Single-Country publications, MCP: Multi-Country publications.

Research on Emotional Intelligence (EI) is expanding beyond developed nations. Many studies now focus on healthcare systems in developing countries like Pakistan and India. These studies show that a physician’s behavior directly affects patient satisfaction. In resource-constrained environments, EI helps primary healthcare providers manage high patient volumes. It serves as a vital tool for improving interpersonal interactions and service quality. Promoting EI will help to mitigate provider burnout in under-resourced public health sectors. These

findings suggest that EI is a strategic necessity for humanizing care in developing regions. It bridges the gap between limited medical resources and quality patient outcomes.

Moreover, Figure-5 shows how these publications are distributed among various geographical locations, which was generated by pyBibx, a Python-based Bibliometric package, using the same collection of data set in BibTeX format.

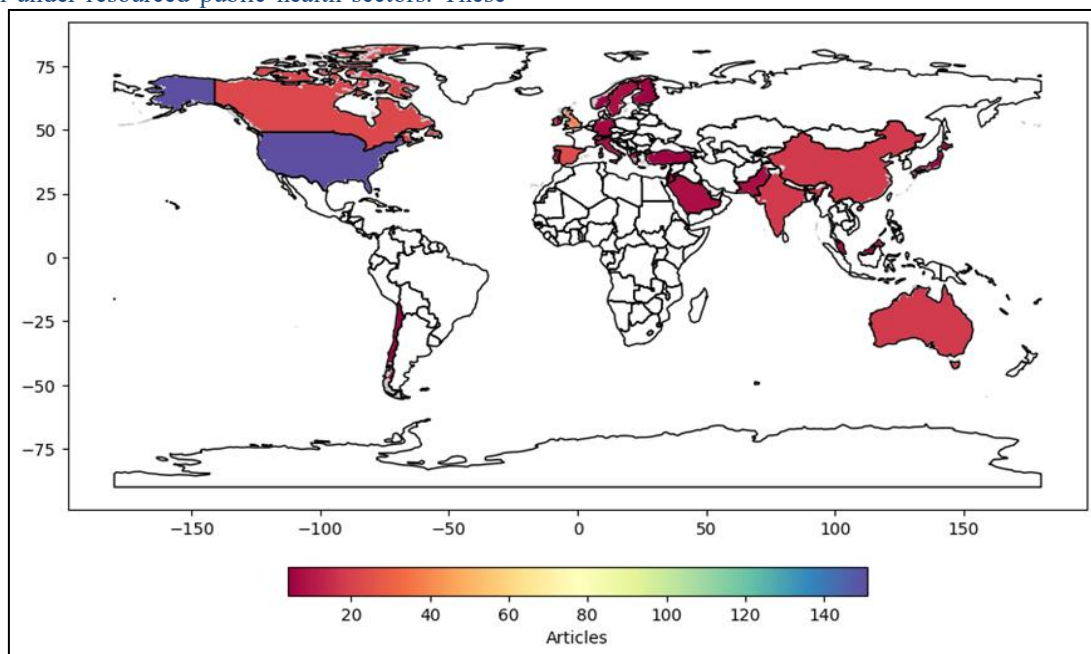


Figure 5. Country-wise publications distribution

In the intervening period, a network depiction of global partnership is displayed using Figure-6, where the correlation of countries is measured by the number of co-authored publications. The countries that have at least 100 citations and five international collaborations are noted, resulting in 6 clusters presenting 14 countries clubbed together based on their Bibliometric cohesion whereas Figure-7 reflects the overall international collaboration with any number of publications.

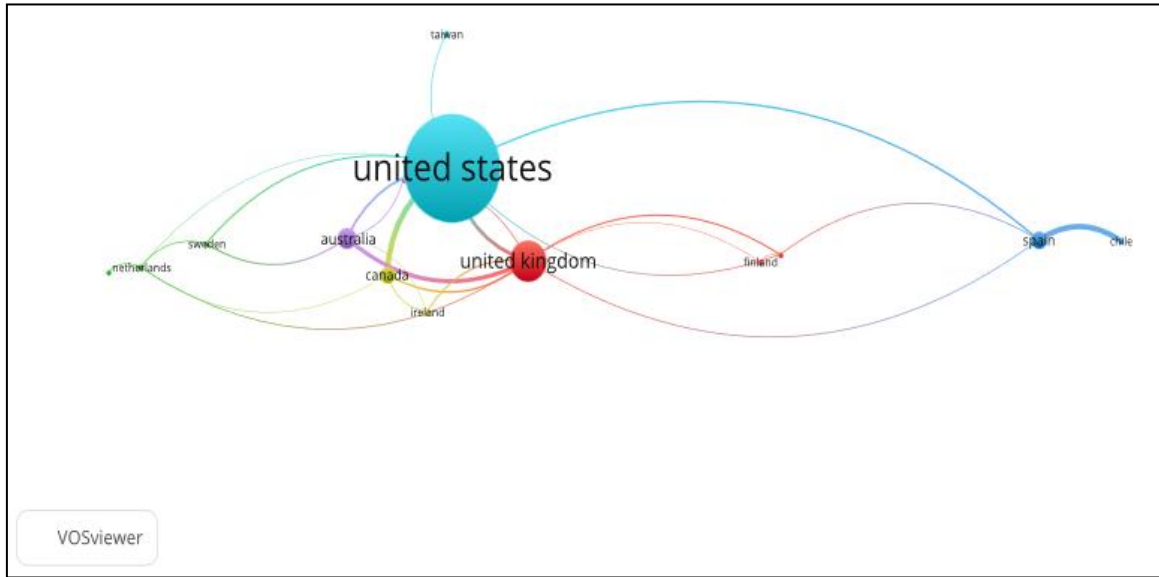


Figure 6. Country Collaboration network

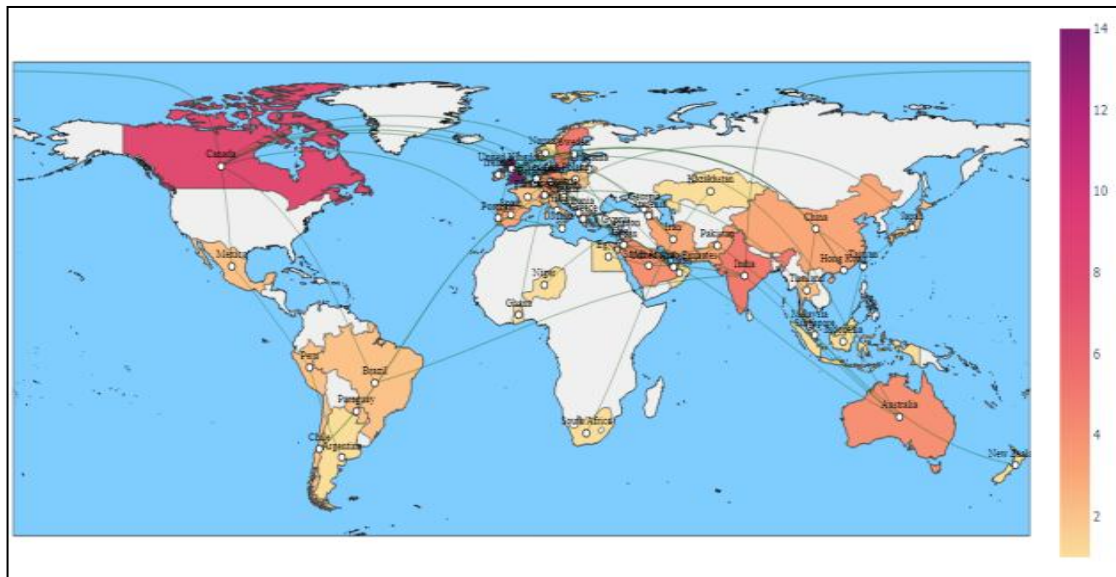


Figure 7. Collaboration map

The collaboration network not only capitalizes the eminence of the US and the UK but also reinforces the UK's larger international partnerships. Even though the US precedes in publications and citations the United Kingdom as a member of European Union found to be more encouraging in case of cross-country collaborations (Anglada-Tort & Sanfilippo, 2019).

Analysis of Authors: Productivity, Lotka's Law, and Collaborative works

The analysis encompasses a total of 1,863 distinct authors identified from the retrieved literature, yielding an average of 3.4 authors per article and an author productivity rate of 0.29 articles per author. Table-7

provides essential insights into the authorship, encompassing metrics such as the average number of authors per publication, overall author productivity, and the collaboration index (CI). Over time, there has been noticeable upward trend in the average number of authors per publication. The mean of authors per document increased from 2.65 during 2000-2010 to 3.74 in the subsequent period from 2011-2023. This growth is statistically significant (Figure-8) by an R^2 value of 0.26 and a p-value of 0.012 ($p < 0.05$). These findings signifies that the growth in co-authorship is not merely product of random variation but represents a significant trend towards enhanced collaboration in academic publishing over time.

As for publication pattern, Table-7 describes the single-authored publication (SAP) and multi-authored publication (MAP) pattern. Single author contributed 96 documents

Table 7. Overall Authors data with Collaboration Index

Year	TA	Avg TA	SAP	MAP	ASAP	AMAP	CI
2000	5	2.50	1	1	1	4	4.00
2001	15	5	0	5	0	15	3.00
2002	9	3	0	9	0	9	1.00
2003	1	1	1	0	1	0	-
2004	10	2.00	1	4	1	9	2.25
2005	15	1.88	4	4	4	11	2.75
2006	18	2.25	5	3	5	13	4.33
2007	18	2.25	2	6	2	16	2.67
2008	39	3.00	4	9	4	35	3.89
2009	40	3.08	3	10	3	37	3.70
2010	60	3.16	6	13	6	54	4.15
2011	116	4.30	2	25	2	114	4.56
2012	112	3.50	7	25	7	105	4.20
2013	104	3.06	4	30	4	100	3.33
2014	100	3.45	4	25	4	96	3.84
2015	108	3.60	5	25	5	103	4.12
2016	96	3.69	3	22	3	93	4.23
2017	104	3.35	8	23	8	96	4.17
2018	149	3.92	7	31	7	142	4.58
2019	165	4.23	6	33	6	159	4.82
2020	173	4.02	6	37	6	167	4.51
2021	155	3.78	2	39	2	153	3.92
2022	151	3.78	6	34	6	145	4.26
2023	198	3.96	9	41	9	189	4.61

Note. TA: Total Authors, SAP: Single-Authored Publications, MAP: Multi- Authored Publications, ASAP: Total No. Of Authors in SAP, AMAP: Total No. Of Authors in MAP, CI: Collaboration Index

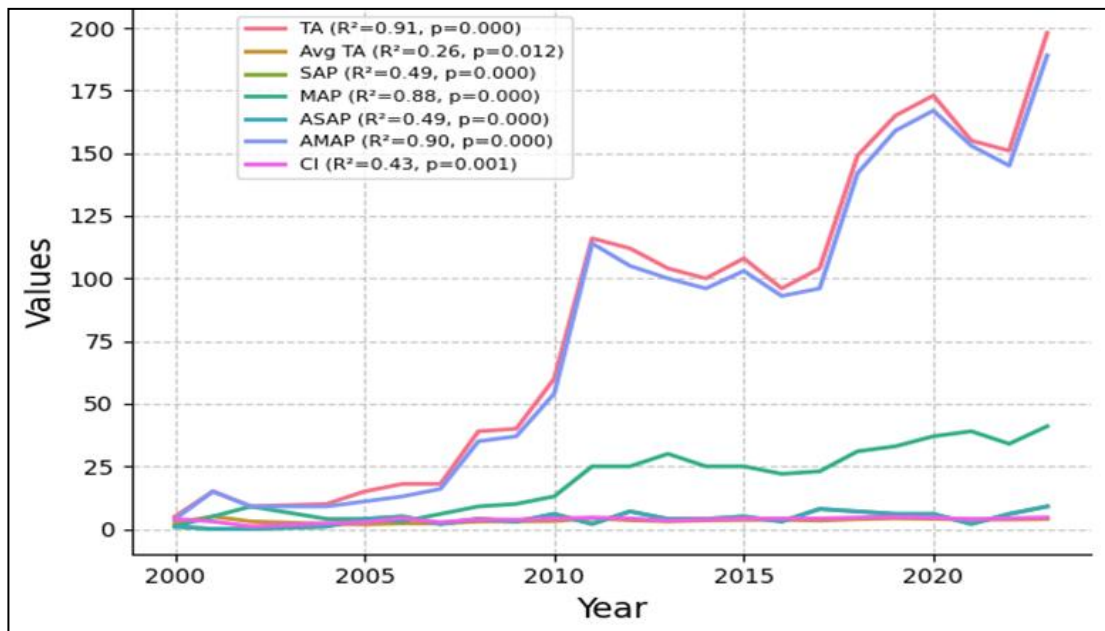


Figure 8. Authors Productivity Analysis

(17.68%) and 454 documents (83.60%) were contributed by multiple authors in total documents. According to Figure 8, both SAPs and MAPs increased significantly over the study period with $R^2 = 0.49$ and $P = 0.000$ for SAPs and $R^2 = 0.88$ and $P = 0.000$ for MAPs. However, *Advances in Consumer Research*

the increase was more pronounced for multi-authored publications. This may reflect the increasing complexity of modern research, involving larger author groups who individually contributes a share of the research effort. These changes may be occurring due to the increasing

linkages between all fields of science and the need for other expertise in answering more complex research questions.

Further, the collaboration index (CI), which is the ratio of the number of authors in multi-authored publications to the number of multi-authored articles, increased significantly too. The Collaborative Index (CI) rose from 4.00 in the year 2000 to a score of 4.61 in 2023, $R^2=0.43$, $p\text{-value} = 0.001$ as shown in Figure-8, which indicates improvement in collaborative research activities.

Figure-9 displays Lotka’s law of scientific productivity (Lotka, 1926), whereby the theoretical (orange) and the observed distribution (blue) are indicated based on the retrieved literature. Lotka’s law says that the frequency of publication by authors in any specific field follows an inverse square law. According to this law, there is an inverse proportion between the number of authors contributing exactly n articles and the square of n . Thus, most authors publish a single paper, while only a few are very prolific. Using the Lotka function included in the R package “Bibliometric” (Aria & Cuccurullo, 2017), the observed frequency table was obtained.

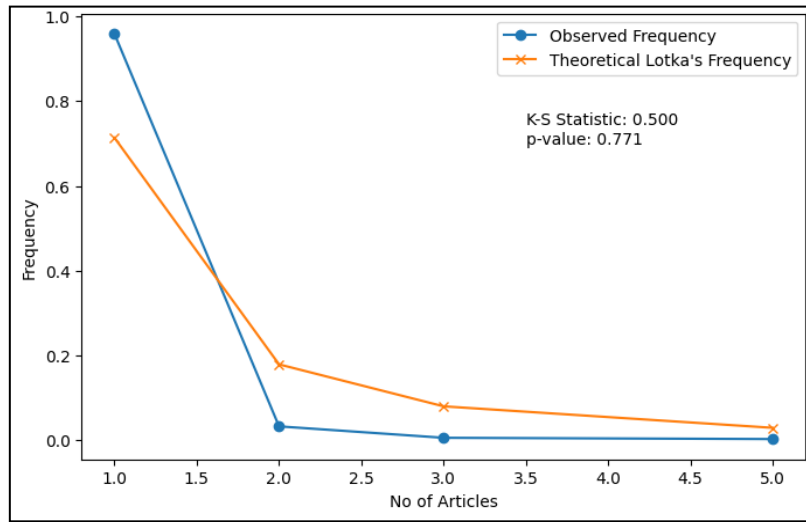


Figure 9. Comparative Lotka’s distribution

The Beta coefficient was then estimated to be $\beta=3.8$, rather than the theoretical value of 2. The deviation may be attributed to the dominance of single-contribution authors, interdisciplinary research characteristics, collaboration patterns, dataset limitations, and field-specific publication behavior. Such deviations are common in contemporary bibliometric studies and indicate that the observed author productivity distribution only partially conforms to the classical Lotka inverse power law. Although the estimated beta coefficient ($\beta=3.8$) far from from the theoretical Lotka value ($\beta=2$), the goodness of fit, $R^2 = 0.50$, is reasonably good.

In addition, it’s been compared the observed distribution to the theoretical distribution using a kolmogorov-smirnov two-sample test. The result of the test showed p-value to be 0.77 which is not significantly different; this supports the concern that the author’s productivity conforms to Lotka’s law.

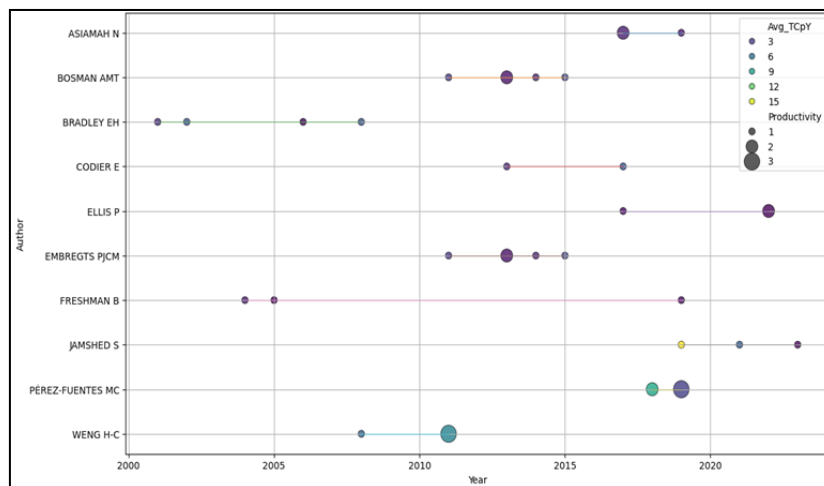


Figure 10. Authors Productivity with Avg TCpY

As illustrated in Figure-10, a bubble chart provides a temporal analysis of the top 10 prolific authors that have contributed to the discipline of emotional intelligence in healthcare. Every author is arranged along the vertical axis, and time (publication year) is on the horizontal axis. The bubbles vary in size which represents classifying productivity (number of publications on a given year). The color intensity provides a measure of Avg_TCpY, the average total citations per year (total citations is the researcher impact).

The most productive and influential authors are Bosman, Embrechts, and Weng (Bosman, 2003; Embregts et al., 2012; Weng et al., 2008). Bosman has a consistent output for the period 2013-2017 with a relatively large bubble size and moderate citation intensity. Similarly, Embregts shows sustained productivity, in particular between the years 2012 and 2018, displaying a balanced mix of publication quantity and citation impact.

Weng’s prominence around 2010 is depicted by a large greenish-blue bubble, indicating high research productivity coupled with strong citation performance (Avg_TCpY > 12). In turn, Pérez-Fuentes and Jamshed have emerged recently (post-2018) as contributors with promising citation trends despite their smaller number of publications. Bradley and Codier, although less prolific in recent years, contributed impact fully early work, particularly between 2003 and 2015. Codier’s work shows a longer active span with consistent output and moderate citation influence. Ellis and Asiamah are more recent contributors, with Ellis showing a spike in activity and citation performance around 2020.

The visualization not only shows who the leading researchers are but also when their most important work was published. The literature in emotional intelligence and health care is on the change as new authors are becoming more prominent while older authors are still impacting the literature.

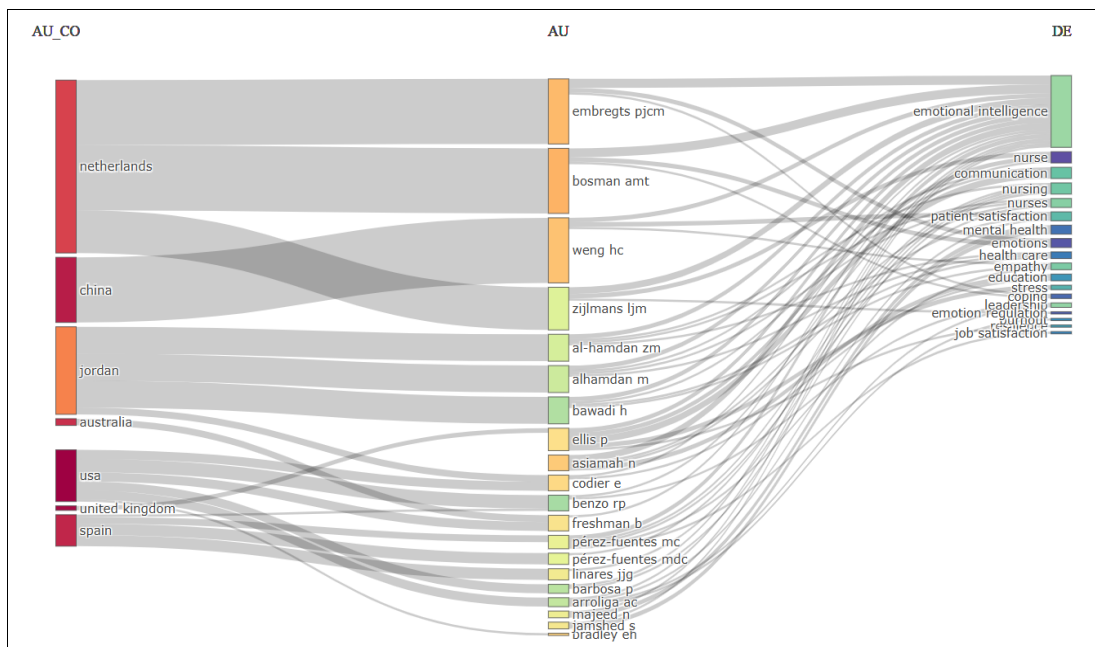


Figure 11. Three-Fold Sankey Diagram

Regarding the conceptual works of the authors, the three-fold sankey diagram (Figure-11) illustrates the connection among the counties (AU_CO), authors (AU) and research themes (DE – Descriptors/Keywords) relating to emotional intelligence in the healthcare landscape. The flow of contribution to an individual author and respective theme of research by various nations is shown in the diagram.

The Netherlands is the most productive country, with authors such as Embrechts, Bosman or Zijlmans taking up the leading roles in this regard. The project involves mental health, nursing, communication, as well as emotional intelligence. China is another contributor. Weng and other authors explored a range of themes from feelings, health to stress. It suggests a broader connection to emotional intelligence in medical as well as organizational situations. Researchers from Jordan, particularly Al-Hamdan, Alhamdan, and Bawadi, have worked on empathy, job satisfaction and patient satisfaction, reflecting a human-centered focus in healthcare delivery. Countries such as Australia, USA, United Kingdom and Spain have also produced meaningful contributions. Some of the notable authors in this context are Ellis, Asiamah, Codier and Pérez-Fuentes. Their work is related to important themes like leadership, education, and emotion regulation.

Keywords, Concepts, and the Trend Analysis

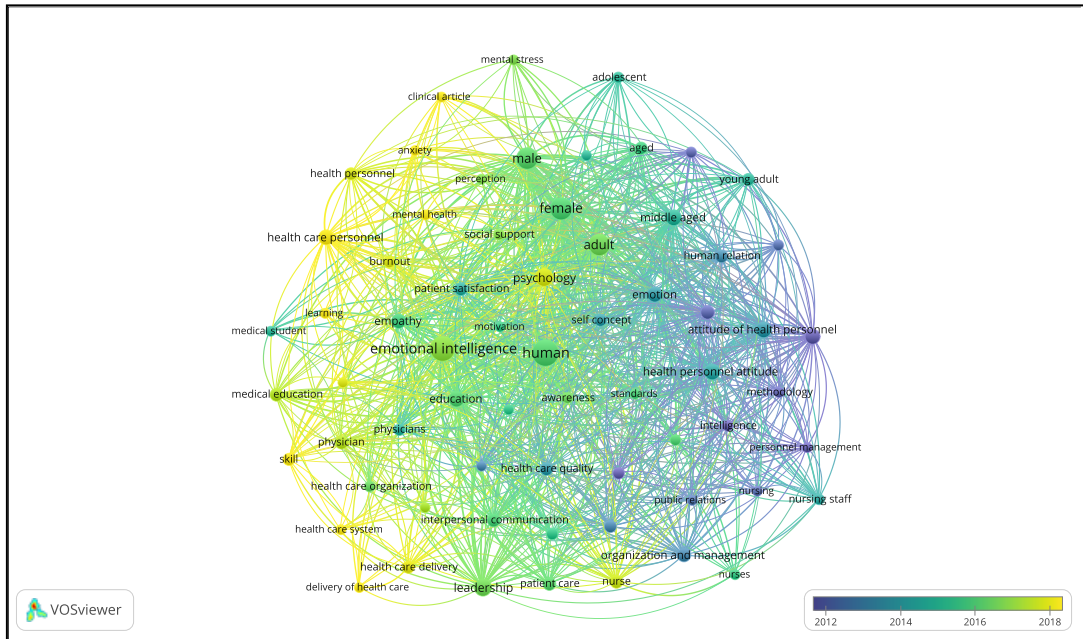


Figure 12. Overlay Visualization of Keywords

The Figure -12 shows the overlay visualization map of author keyword occurrences (i.e. keywords listed by the authors on each publication). Only keywords that occurred a minimum of 5 times were included, resulting in a total of 1222 keywords. The Scopus data which had been used in this research provides author keywords from 2000 onwards up to 2023. The overlay maps given here are similar to network maps but they are coloured based on the given strength. The dark blue–colored cluster of keywords represents terms that were predominantly used during an earlier time period, particularly around the year 2000. In the visualization map, the green-colored cluster of keywords indicates topics that were extensively researched around the year 2016, while the yellow cluster represents keywords that gained prominence in the most recent phase of the time period, particularly around the year 2018.

This Bibliometric study explores the evolving themes of emotional intelligence (EI) in healthcare through a keyword co-occurrence analysis using VOSviewer. Thematic cluster and temporal trend in research were extracted by performing co-word analysis. The study of co-occurrence network segments into three major clusters, which are highlighted in Figure 13. Each of them represents a different dimension related to the importance of emotional intelligence in the healthcare profession.

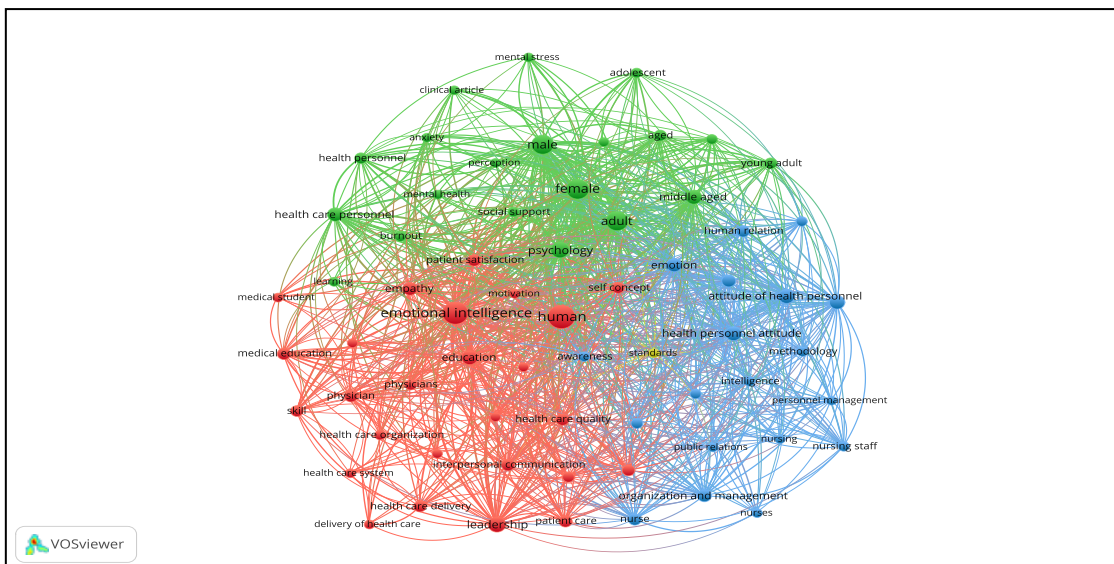


Figure 13. keywords Co-Occurrence

Emotional intelligence plays a crucial role in how effectively healthcare services are delivered. Various studies constantly highlight major concepts like empathy, burnout and quality of care, clearly demonstrating that the emotional and interpersonal competencies of healthcare

professionals are fundamental to healthcare outcomes. Empirical evidence clearly demonstrates that healthcare personnels having higher emotional intelligence experience lower levels of burnout, communicate more effectively with patients, and consequently achieve higher

patient satisfaction. For instance, Codier et al. (2009) reported that nursing staffs possessing greater emotional intelligence experienced less stress and had higher retention rates whereas Arora et al. (2010) observed that emotionally intelligent medical trainees were better skilled to manage workplace pressure.

Moreover, emotional intelligence is decisive factor in medical outcomes. For instance, Weng et al. (2011) reported that physicians with higher emotional intelligence communicated more effectively with patients, which in turn led to a reduction in diagnostic errors owing to enhanced clarity in clinical communication. Further, a meta-analysis conducted by Benson et al. (2010), demonstrated that emotionally aware practitioners are more effective to promote patient compliance with treatment recommendation. This cluster further emphasizes on the role of empathy as the core characteristics of emotional intelligence, especially in sensitive clinical contexts such as oncology and terminal care.

The subsequent thematic cluster explores the relationship between emotional intelligence and demographic as well as psychological factors, suggesting that gender, age, and psychological health influence emotional intelligence levels among healthcare professionals. Studies have come up with proof of differences in emotional intelligence between males and females also. For instance, Mikolajczak et al., 2007, determined that women, in general, scored better on emotional awareness and empathy, whereas men got higher scores on emotion regulation. Also, these differences still exist in the professional context influencing not only the styles of leadership but also the ways of communication. Bulmer Smith et al., 2009, reported that leadership in the nursing field by women was characterized by empathy more than in the case of men who exhibited analytical and goal-oriented characteristics. Furthermore, age and experience still play a significant role; moreover, healthcare professionals of old-aged patients are emotionally more mature as shown by (Stoller, 2009). Over and beyond demographic distinctions, emotional intelligence is strongly correlated to mental health and psychological resilience. According to Petrides et al., 2008, high trait EI aligns with low levels of anxiety and depression; thus, it could be considered that emotional intelligence is a source of protection against stress. (Slaski & Cartwright, 2003), demonstrated that EI training leads to emotional health of healthcare managers by evidently lowering work-related stress and bringing about their overall well-being.

The third cluster identifies the correlation between emotional intelligence and organizational behaviour as well as healthcare systems. Along with healthcare workers' attitude, organization, and administration, it is about the relationships of emotional intelligence with management, team dynamics, and leadership in the healthcare arena. (Freshwater & Stickley, 2004), put forward the idea that nurse leaders who possessed emotional intelligence through their leadership created a more supportive and effective environment at work. Further, recent research done by Cummings et al., 2018,

reveals that the emotional intelligence of managers results in higher levels of togetherness and more efficient communication in teams which finally brings about the improvement of patient care. Furthermore, institutions that invest in emotional intelligence training programs often report improved morale among staff, higher retention rates, and better performance. For instance, Görgens-Ekermans & Roux, 2021, argues that emotionally intelligent actions can lead to a reduction in hospital wards where there is a high turnover of staff due to the intensity of work. On the systemic level, one of the significant concerns has been the location of cultural competency in the area of healthcare. Again, emotionally intelligent healthcare provider would be able to deal with the diverse range of patients with utmost sensitivity and provide quality care regardless of culture differences (Kaur et al., 2015).

Examining the evolution of research in the domain of emotional intelligence in healthcare, the overlay visualisation developed through VOSviewer, offers revealing insights. For the period between 2012 and 2014, The main focus was on the fundamental aspects of organisational behaviour, interpersonal communication and merging EI into healthcare education. Researchers like AKERJORDET & SEVERINSSON (2008) were first among to investigate the integration of emotional intelligence training in nursing curricula. However, over the last four years it is witnessed a sharp growth in emphasis on the systemic issues that are affecting the healthcare industry, and a new set of keywords like burnout, health care quality and stress. This shift in emphasis is aligned with global health priorities, specifically, the impact of the COVID-19 pandemic has intensified the focus on burnout among healthcare workers, necessitating comprehensive mental healthcare interventions and strategies to maximize resilience resources within healthcare systems (Noluthando Zamanjomane Mhlongo et al., 2024; Tshering, 2022). The National Academies of Sciences, Engineering, and Medicine report in 2019 re-confirmed this pattern by connecting the well-being of healthcare workers directly to patient safety and organizational performance.

This Bibliometric investigation also highlights on the interdisciplinary underpinning of emotional intelligence research in healthcare. Instruments such as the Trait Emotional Intelligence Questionnaire (TEIQue) and the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) are now widely used to assess EI among healthcare professionals (Mayer et al., 2016; Petrides et al., 2008). Despite this progress, a number of gaps in the literature persist. Most notably, there is scant data regarding the role of EI in non-Western healthcare contexts, as well as its incorporation into newer service delivery modalities, such as tele-health. (Lee et al., 2022), recommended more inclusive research on how emotional intelligence functions across different healthcare settings and technological platforms. (Dugan et al., 2014) highlighted that evaluation of how EI training can improve not just individual-level outcomes but also broader institutional performance and healthcare access is important

2011) and clinical performance (Arora et al., 2010), while also appreciating its multidimensional aspect (Mayer et al., 2016). From 2018 to 2020, this turned to mental health and systemic challenges: burnout (Foster et al., 2018); the protective role of EI, which picked up after the World Health Organization’s classification of burnout in 2019; psychiatric care, including, for example, schizophrenia and the training of nursing students in EI. Since the year 2020, emerging topics have placed front and centre the role of EI in pandemic resilience (Greenberg et al., 2020), telehealth (Kwon & Lee, 2020), and health equity; Over two decades, EI research has moved from individual competency building to responding to systemic stresses in healthcare, underlining its value as an interdisciplinary field in improving clinician well-being, patient care, and organizational resilience.

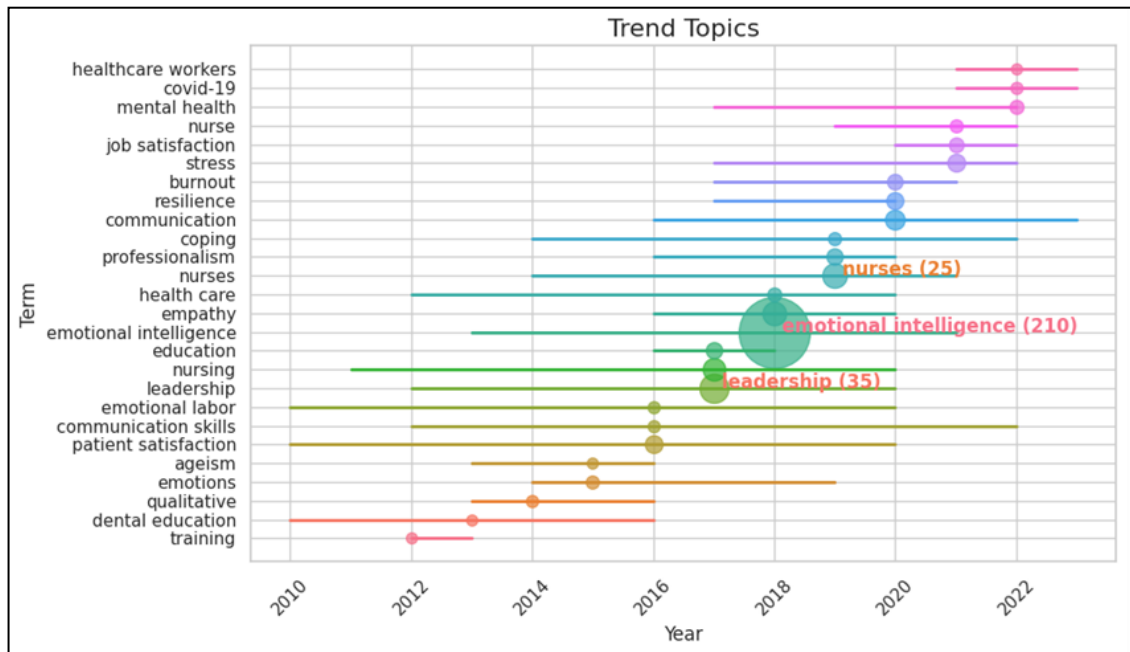


Figure 16. Trend Topics

Overall, as the figure-16 depicts the area of application of EI and the chronological advancement of its frequency from 2010 up to 2023. It clearly indicates Emotional Intelligence as the most trending subject followed by leadership and in the area of nursing between the year 2016 to 2020. Other subjects like patient satisfaction, communication, job satisfaction, mental health also played prominent role during the last decade.

5. Implications of the Study

5.1 Theoretical Implications

Establishing emotional intelligence (EI) as a construct that can be measured, gives it a stronger theoretical base in healthcare and indicates the influence of EI on professional performance and the standard of care. According to the contemporary research, the increase in emotionally intelligent behavior leads to the enhancement of job performance, stress resistance, and the making of moral decisions among various groups of people (Chatzidimitriou et al., 2025; Hashmi et al., 2024). Besides that, EI is presently a quantifiable psychological and behavioral characteristic that has an impact on the behavior of the workplace, leadership effectiveness, and the standard of care (Oweidat et al., 2024). The sum of the data pointing to the relationship between emotional regulation, communication, and clinical decision-making is a strong argument for the central role of EI in healthcare psychology.

5.2 Managerial Implications

Practically, healthcare institutions gain substantial benefits from employees’ emotional intelligence (EI) skill development programs, which forestall burnout, enhance emotional self-regulation, and strengthen team cohesiveness (Powell et al., 2024; Rossi et al., 2023). These initiatives are essential for addressing the pervasive issue of healthcare worker burnout, which has been exacerbated by the COVID-19 pandemic and continues to impact both individual well-being and the overall quality of patient care (Malik et al., 2025; Taylor et al., 2022). Additionally, such programs are vital for enhancing staff resilience and optimizing healthcare delivery through the development of effective stress management and interpersonal skills (Hashmi et al., 2024; Verma et al., 2025). Moreover, acknowledging the critical role of emotional intelligence in the healthcare sector, particularly among nurse managers, can enhance job satisfaction, higher retention, and enhanced organizational attributes such as leadership and conflict resolution abilities (Cisic et al., 2025). However, effectively integrating emotional intelligence and mindfulness education in medical training and the ongoing professional development requires a holistic approach that addresses both individual and organizational strategies for managing burnout and improving overall well-being in healthcare (Alan et al., 2023). Beyond individual level training, a comprehensive strategy that addresses the underlying causes of burnout

through more extensive structural reforms in healthcare organizations is, however, essential to achieve long term positive effect (Frias et al., 2025).

In particular, emotional intelligence can be implied in healthcare service quality through empathetic nursing practices and effective communication, enabling nurses to better understand patients' emotions, needs, and concerns (Sherlyna Prihandhani et al., 2024). Furthermore, social support is identified as a critical contributor to the resilience and retention of healthcare workers (Azriddin et al., 2024); accordingly, the provision of structured and adequate social support by management can strengthen workforce sustainability and enhance healthcare service quality. Concurrently, the effective use of emotional intelligence by leaders to develop constructive interpersonal relationships with subordinates is associated with enhanced employee job satisfaction and improved work effectiveness (Heckemann et al., 2015). Consequently, development of leadership skills enriched with emotional intelligence among hospital managers improves decision-making quality and enhances overall service delivery (Karimi et al., 2021).

Measures such as the Emotional and Social Competency Inventory (ESCI) are used to systematically assess and develop emotional and social competencies (Verma et al., 2025), whereas Social and Emotional Learning (SEL)-based initiatives are incorporated into educational and professional training frameworks to strengthen the interpersonal capabilities of healthcare workers, particularly nurses. Additionally, management may implement the Health Care Optimal Physician Empathy (HOPE) model, which reinforces physician-patient relationships by strategically managing the patient satisfaction and physician burnout, thereby promoting sustainable empathy and enhanced overall healthcare service quality (Cadet & Sainfort, 2023). Patient satisfaction, safety, and staff retention are the areas that get improved as a result of these changes. Hence, emotional intelligence training is not only necessary for the development of individual resilience and skills but also for the enhancement of institutional performance and the quality of care provided.

5.3 Policy Implications

Policymakers are, to a greater extent, recognizing the fact that health-care education, leadership training, and human-resource management through the use of emotional intelligence (EI) competency frameworks constitute a viable, as well as ethically sound, way of proceeding (Oweidat et al., 2024). Besides accrediting bodies that will be the main influencers, it is the duty of policymakers to encourage the EI assessment through hiring processes, competency evaluations, and professional development initiatives to be broadly adopted. These activities, which are aimed at promoting the development of staff, apart from being instruments of a caring and value-based medical practice, are also in line with the global goals set for mental health, staff well-being, and patient-centred healthcare (Naggar et al., 2025). When a broad range of formats and continuous skill assessment are accommodated, policy innovation around EI training may not only tackle accessibility and

effectiveness issues but also ensure the skills learned will be retained for a longer time (Chatzidimitriou et al., 2025).

The potential for applying EI in telehealth and AI-based healthcare systems is immense but mostly unexplored. The major benefit of an Emotional AI system that can understand and respond to human emotions is, among other things, the enhancement of patient engagement, empathy, and trust in remote care. The fusion of Emotional Intelligence and Artificial Intelligence can lead to the improvement of professional skills. By educating AI decision-support systems in the principles of EI, a balance of emotional and analytical intelligence is attained, which not only makes the clinical part accurate but also, compassionate interaction is facilitated (Karim & Vyas, 2023). These types of innovations not only raise the quality of patient care, but also, upon increasing the patient outcomes and clinician satisfaction, they nurture the patient's emotional intelligence and thereby, the patient's active involvement in a digitally advanced healthcare environment.

6. Future Research Scopes

The research focused on employee emotional intelligence has become a gateway to various emotionally intelligent behaviour-related research sectors in healthcare. Primarily, the research done in the west (e.g. US and UK) could be replicated in the east countries like in Africa, Asia, and South America, thereby identifying how both culture and the institutional factors influence the internalization and the practice of EI, yielding the implementation of healthcare models that are more culturally adaptable.

Secondly, there is a need for longitudinal studies that should be conducted from time to time to witness the long-term effects of emotional intelligence teachings in terms of burnout reduction, job satisfaction, and patient care quality. Third, as healthcare is getting digitized through the likes of tele-medicine and AI, the role of EI in fostering empathy, digital communication, and human-AI interaction should be investigated. Fourth, research on healthcare leader emotional intelligence components as a leadership trait may primarily result in comprehending their contribution to healthcare team performance, resilience, and healthcare quality.

Fifth, the interdisciplinary strategy comprising of Psychology, Public Health, and Management disciplines, in conjunction with up-to-date Bibliometric tools, can significantly enhance the understanding of the thematic evolution within the emotional intelligence (EI) research domain. Finally, enhanced worldwide collaboration through social network analysis should play a pivotal role in uniting global emotional intelligence research in healthcare and facilitating the insight exchange. Overall, these points lead to the integration of emotional intelligence into healthcare systems that are universal, resilient, and compassionate at the level of theory, practice, and policy.

6.1 Future Research Directions: Digital Health and Specialized Surgery

Research on Emotional Intelligence (EI) is shifting toward specialized clinical areas. Digital health and tele-medicine

are now key research hotspots. Future studies should examine how EI works in virtual environments. This includes developing “digital empathy” for screen-based patient interactions. Researchers should also investigate AI tools that help manage remote care stress.

More studies are also needed on EI in specialized surgery. Current data shows that surgeons with high EI are better leaders. Future research must link EI training to specific clinical outcomes. These outcomes include lower complication rates and faster patient recovery. Focusing on these areas will help integrate EI into high-pressure medical fields. It will bridge the gap between technical skill and modern digital innovation.

7. Limitations

The investigation was largely based on information from Scopus database only. As a result, research that is indexed by the Web of Science and PubMed, but not by Scopus, may not have been considered. The study focused solely on English language journal articles which exclude non-English research and grey literature, for example, conference papers or dissertations. Bibliometric indicators depend on the publication date, self-citations, and the journal’s prominence and thus, they can misrepresent the perceived influence. This work only covers up to 2023, so it is devoid of any recent developments in this rapidly changing field.

8. Conclusion

A Bibliometric review of Emotional Intelligence in healthcare unveils a rapidly changing interdisciplinary scientific area that next to psychological theory and has become closely linked with healthcare practice. The number of EI publications has gone up dramatically from 2000 to 2023 which reflects the major shift of the role of emotions as a core clinical and organizational skill. Based on the study findings, the U.S., U.K., and the Netherlands are the top countries not only in terms of the volume of publications and collaboration but also in the networks of highly influential authors like Weng, Codier, and Bosman whose concepts and theories have impacted the most the intellectual framework of the area. Apart from that, the transitioning discourse has found significant dissemination platforms in Medical Education and Nursing Education Today.

By theme analysis through clustering, three themes were identified reflecting the different facets of the importance of emotional intelligence in healthcare which are: EI and burnout alleviation, EI and mental health, and EI and organizational leadership. The trend of usage of keywords showed the progression from the starting point of emotional abilities and interpersonal communication towards the themes of the newest research like mental health resilience, telehealth, and leadership training. These transitions illustrate the evolution of EI as a skill at both the professional and systemic levels in the healthcare sector.

Summing up, emotional intelligence is not solely an individual capability but also a strategic organizational asset that promotes empathy, patient safety, and a workforce that is mentally healthy and thus, sustainable over time. Raising education in the fields of EI,

leadership, and institutional culture may therefore have a huge potential of enhancing healthcare delivery in the most emotionally challenging environments. Future studies should consider cultural factors, be in agreement with technological interventions, and investigate policy-driven applications of EI to contribute to a healthcare system that is seriously compassionate, resilient, and emotionally intelligent.

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