ORIGINAL RESEARCH   ORİJİNAL ARAŞTIRMA

Patient Empowerment and Care in Nursing Research on Scientific Themes of Bibliometric Analysis: A Descriptive Study

Bibliyometrik Analizin Bilimsel Temaları Üzerine Hemşirelik Araştırmalarında Hasta Güçlendirme ve Bakım: Tanımlayıcı Bir Çalışma

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ABSTRACT Objective: This bibliometric analysis was conducted to analyze the thematic trends, focal points, and development processes of studies on patient empowerment and care in nursing. **Material and Methods:** This study was performed using descriptive and bibliometric analyses. The study data included 916 articles on patient empowerment and care obtained from the Web of Science (WoS) database. Data analysis and graphics processing were performed using the Bibliometrix package in R Studio, which is a programming language for statistical analysis and graphics. **Results:** Articles that were obtained from 361 sources written by 3,407 authors between 1992 and 2022 were examined. In this bibliometric analysis, 2,260 author keywords were identified. The concepts of "empowerment," "patient empowerment," "nursing," and "patient" were among the most frequent author keywords. Recently, the keywords "healthcare", "burnout", "management", and "satisfaction" have been used frequently. While "medical," "malpractice," and "informed consent" were popular in the early years, the keywords of "guidelines" and "meta-analysis" were popular recently. **Conclusion:** Studies on the concepts of patient empowerment and care in the field of nursing have increased over the years, and this subject has been intensely studied in nursing. Additionally, while the theme of "empowerment" has been intensively investigated, it has been seen that the theme of "nurses' perceptions" has been studied less frequently. There is limited data on the research focus, available knowledge structures, thematic trends, and evolution of patient empowerment and care concepts in the field of nursing.

Keywords: Bibliometrics; care; empowerment; nursing; patient

ÖZET Amaç: Bu bibliyometrik analiz, hemşirelikte hasta güçlendirme ve bakımı alanındaki çalışmaların tematik eğilimlerini, odak noktalarını ve gelişim sürecini analiz etmek amacıyla yapılmıştır. **Gereç ve Yöntemler:** Çalışma tanımlayıcı ve bibliyometrik analizler kullanılarak gerçekleştirilmiştir. Çalışma verileri Web of Science (WoS) veri tabanından elde edilen hasta güçlendirme ve bakım kavramları ile ilgili 916 makaleyi içermektedir. Veri analizi ve grafik işlemleri, istatistiksel analiz ve grafikler için bir programlama dili olan R Studio'da Bibliometrix paketi üzerinde gerçekleştirilmiştir. **Bulgular:** Çalışmada 361 kaynaktan elde edilen ve 1992-2022 yılları arasında 3.407 yazar tarafından yazılan makaleler incelendi. Bu bibliyometrik analizde 2.260 yazar anahtar kelimesi tespit edilmiştir. "Güçlendirme", "hasta güçlendirme", "hemşirelik" ve "hasta" kavramları en sık kullanılan yazar anahtar kelimeleri arasında yer aldı. Son zamanlarda "sağlık", "tükenmişlik", "yönetim" ve "memnuniyet" anahtar kelimeleri sıklıkla kullanılmaktadır. İlk yıllarda "tıbbi", "malpraktis" ve "bilgilendirilmiş onam" popülerken, son yıllarda "kılavuzlar" ve "meta-analiz" anahtar kelimeleri popüler olmuştur. **Sonuç:** Hemşirelik alanında hasta güçlendirme ve bakım kavramları üzerine yapılan çalışmalar yıllar içinde artmış ve bu konu hemşirelikte yoğun olarak çalışılmıştır. Bunula birlikte "güçlendirme" teması yoğun olarak araştırılırken, "hemşirelerin algıları" temasının daha az çalışıldığı görülmüştür. Hemşirelik alanında hasta güçlendirme ve bakım kavramlarının araştırma odağı, mevcut bilgi yapıları, tematik eğilimleri ve evrimi hakkında sınırlı veri bulunmaktadır.

Anahtar Kelimeler: Bibliyometri; bakım; güçlendirme; hemşirelik; hasta

Patient empowerment means giving patients authority in healthcare and encouraging them to maximize their potential for autonomous self-management.[1-5] Care is among the most important building blocks of nursing interventions.[6-8] Therefore, nurses' application of care where trust and understanding are at the forefront of patient empowerment will be beneficial.[1,2,9]

The World Health Organization (WHO) defines patient empowerment as "a process where patients have a high degree of control over the actions and decisions that affect their health." Furthermore, the WHO emphasizes that patient empowerment should be viewed as a societal rather than an individual process.[10] Important roles of nurses in patient empowerment can include activities such as providing health education, encouraging patient participation in treatment planning, helping patients cope with their illness by providing emotional support, developing self-management skills, and supporting patients to make informed decisions about their care.[2,3] Empowerment of the patient in the nursing care, education, and counseling process provides benefits in areas such as improved health and quality of life, making informed choices about treatment and care, having better relationships with health professionals, taking more responsibility in care, benefiting from more cost-effective health care, and developing a collaborative, dynamic and equal relationship with health professionals.[3,5,6,11] The basis of the care concept is the patient.[11,12] Therefore, nurses can motivate patients to actively participate in self-care activities by establishing good communication with them and determining appropriate strategies to conduct the patient care process.[13-15]

Bibliometric analysis is a method used to analyze the stack of information in a specified field or subject.[16] Additionally, the bibliometric analysis provides an in-depth analysis of trending topics and current hotspots in fields such as nursing, medicine, and biology.[16,17] Therefore, there is a need to increase bibliometric analysis studies to develop and improve patient empowerment and care concepts. When the literature was examined, bibliometric analysis studies on the concept of nursing care were found.[18-20] How-

ever no bibliometric analysis has examined the concept of patient empowerment has been conducted. Therefore, this study examined the focal points, thematic trends, and development processes of patient empowerment and care in the field of nursing. There is a need to examine patient outcomes and potential treatment-related problems in studies addressing the concept of nursing care and that which will provide remedial and guiding contributions to the studies to be planned in the relevant field.

MATERIAL AND METHODS

DESIGN

In the study, descriptive and bibliometric analyses of the articles related to the concepts of patient empowerment and care in the field of nursing were performed. The bibliometric analysis method is essential because it offers a broad perspective to research, and researchers can identify trending topics that are likely to be published.[21] For this reason, the bibliometric analysis method was used in the study to examine and understand the concepts of patient empowerment and care in the field of nursing. The research questions are as follows:

- What is the annual number of publications and citations?

- What are the thematic maps (niche themes, basic themes, declining or emerging themes, and motor themes) of keywords used in research on patient empowerment and care in the field of nursing?

- What are the trending keywords used in research on patient empowerment and care concepts in the field of nursing?

- What has the thematic evolution of keywords used in research on patient empowerment and care in the field of nursing shown?

PARTICIPANTS/SAMPLE

No human participants were included in the study as the study data were obtained from the WoS database. The study was conducted by examining 916 studies in the field of nursing related to the concepts of patient empowerment and care.

DATA COLLECTION

The data were obtained from the WoS Core Collection database on September 11, 2023. To ensure the accuracy of the data, Medical Subject Headings (MesH) keywords were determined, and a search strategy was established for these keywords. First, the "nursing care management" or "nursing care" or "care" or "nursing management" or "patient care" keywords were used in the search. Then, the search was filtered using the "patient empowerment" or "patient empower*" keywords. As a result of the database search, 5,498 documents were obtained. Of these studies, 1,259 were in the field of nursing. Then, their document type was limited to articles and reviews. As a result, 916 study data were obtained.

The WoS category was selected as "nursing," and the WoS index category as "Science Citation Index Expanded," "Social Sciences Citation Index," "Emerging Sources Citation Index," and "Conference Proceedings Citation Index-Social Sciences and Humanities." The document type was filtered as "article," "editorial material," "meeting abstracts," "review," and "conference papers" were included. Book reviews, letters to editors, news items, corrections, notes to editors, early access, retraction, and retracted publications were excluded.

The Search, Appraisal, Synthesis, and Analysis (SALSA) method was used to determine the parameters for bibliometric analysis.[22] This methodology ensures accuracy, systematization, comprehensiveness, and reproducibility.[23] In most scientific studies, this approach has been used to reduce the possible risks of publication bias and increase research acceptability.[22,23] Therefore, the SALSA method was preferred in our research. In the study, the SALSA method was employed to produce unbiased data sets in the data SALSA process and to achieve the research objectives including the search and analysis steps (Figure 1).[24]

DATA ANALYSIS

All information about the documents selected, including bibliographic data, abstract and keywords, citations, and cited references, were exported. The raw data in the exported file were compressed in Bibtex format and made appropriate for analysis. The focus of the research, thematic maps in the development process of the studies, thematic trends, and trend topics, were analyzed using a formation map and thematic development analyses. The results of the bibliometric analysis were analyzed using the bibliometrix package of the R Studio (version 4.2.2) software.[25] The data uploaded in Bibtex format were
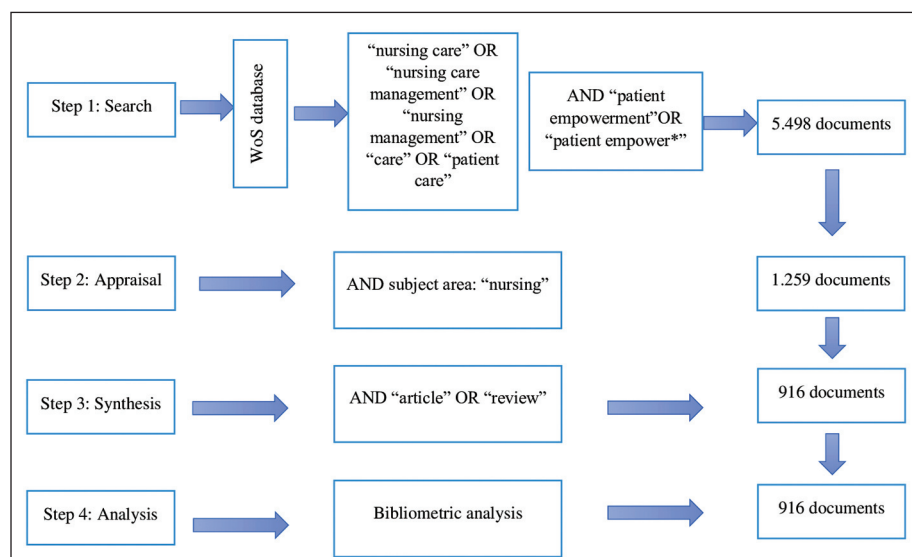

FIGURE 1: SALSA steps of data analysis and selection process.

visualized by selecting the parameters rotate "0," padding "1," and ellipticity "0.65," repeated at least 50 times in "WordCloud (Leiden University, Netherlands)." In the co-occurrence analysis of author keywords, isolated nodes "yes," the number of edges "2," and the number of nodes "50" were selected. In the thematic map section, the clustering algorithm "walktrap," the number of labels "3," and the number of words "250" were preferred. Finally, in the thematic evolution section, the number of words "250," min cluster frequency "5," and the number of labels "3" were chosen.

The four areas containing the thematic map are presented below.

- Niche themes: high-density and low-centrality clusters at the top left area. The ties of these clusters with other themes are not strong.

- Basic themes: too many relationships with other themes in the bottom right area. The themes are weak.

- Emerging or declining themes: themes that indicate clusters that have weak and few connections with other themes in the bottom left area.

- Motor themes: clusters in the top right area are among the most important and advanced themes. They consist of high-density and strong centrality clusters.[25,26]

ETHICAL CONSIDERATIONS

Ethics committee approval was not obtained in this study as it had no direct effects on humans and was a bibliometric analysis.

VALIDITY, RELIABILITY, AND RIGOUR

It is essential to ensure the validity and reliability of the bibliometric analysis results. Therefore, the study was conducted with SALSA steps. Additionally, two independent researchers selected some studies randomly from the dataset and checked their suitability. No inconsistency was found between these researchers.

RESULTS

The results obtained from the WoS database showed that there were 916 documents conducted between 1992 and 2022 in 361 sources related to the concepts of patient empowerment and care in the field of nursing. Of these documents, 805 (87.9%) were articles and 111 were reviews. The articles reviewed had been produced by 3.407 authors. It was determined that 95 of the documents had a single author (10.4%) and 821 had multiple authors (89.6%). The mean number of co-authors for all studies reviewed was 4.2. The average number of citations was 3.50, and the annual growth rate was 9.15%.

The most productive authors were identified as Laschinger HKS (18 publications), Leino-Kilpi H (9 publications), and Graffigna G (7 publications). Most of the studies had been produced in the USA (209 articles), the United Kingdom (118 articles), and Canada (88 articles). The included studies were published in 138 different journals. The journals with the highest number of publications on this subject were the Journal of Advanced Nursing (n=159), Journal of Clinical Nursing (n=128), and Journal of Nursing Management (n=54). The top three institutions in the included studies were the University of Turku/ Finland (68 publications), the University of Western Ontario, Canada (55 publications), and Griffith University/Australia (30 publications). When the international collaborations of the included studies were examined, it was determined that the highest number of collaborations was with the USA. The USA, United Kingdom (n=7), Canada (n=4), and France (n=3) were found to have published articles (Figure 2).

According to the studies included, the first article was published in 1992, and an accelerated increase has been observed since 2005. When the annual number of publications was examined, it was determined that the annual growth rate was 15.7% and the most productive year was 2022 with 79 studies (Figure 3).

Additionally, it was determined that 2.260 author keywords were used in studies on the concepts of patient empowerment and care in the field of nursing. The most frequently used keyword cloud of 100 authors is given in Figure 4a. Words that appear in a large font in the word cloud indicate that they have a high frequency. Accordingly, it was determined that the most frequently used author keywords were em-
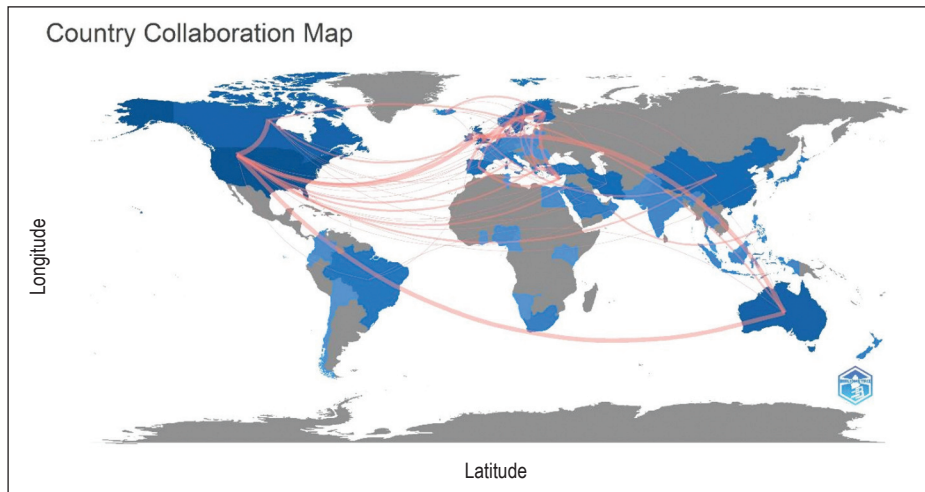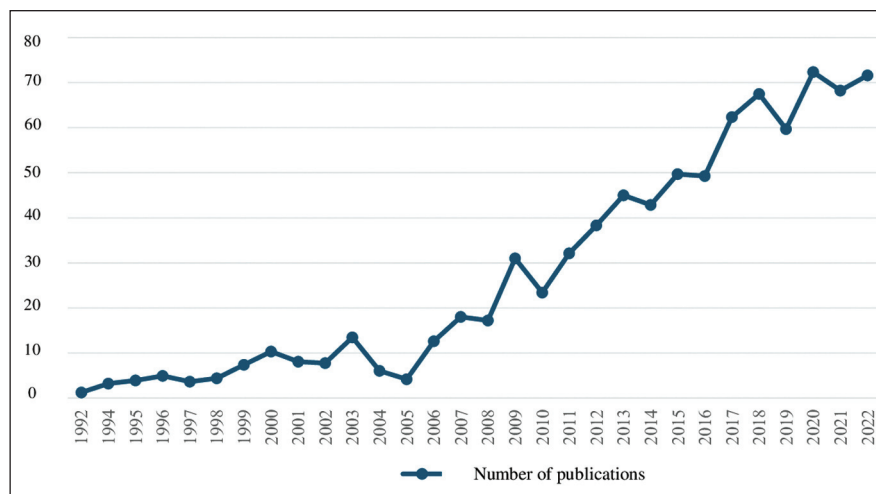
FIGURE 2: Country collaboration map.

FIGURE 3: Distribution of the number of publications by years.

powerment (195 times), patient empowerment (94 times), nursing (74 times), and patient (66 times).

In the formation map process of author keywords, the number of nodes was accepted as 25 and the co-occurrence rate of words as 2. As the co-occurrence rates of words increase, the size ratios of nodes and words also increase. The nodes and the colors of the nodes between the words show the co-occurrences of words. As a result of the co-occurrence network, it was determined that the first three most frequently used words were "empowerment," "nursing," and "patient," respectively (Figure 4b).

The co-formation network of studies on the concepts of patient empowerment and care in the field of nursing was categorized under three clusters. The first cluster (red) consisted of ten-word networks, including patient empowerment (Betw=30.58), patient participation (Betw=4.69), self-management (Betw=1.57), patient activation (Betw=1.53), patient engagement (Betw=1.02), shared decision-making (Betw=0.89), patient involvement (Betw=0.56), patient-centered care (Betw=0.32), communication (Betw=0.20) and primary care (Betw=0.16). The second cluster (blue) included eight-word networks, in-
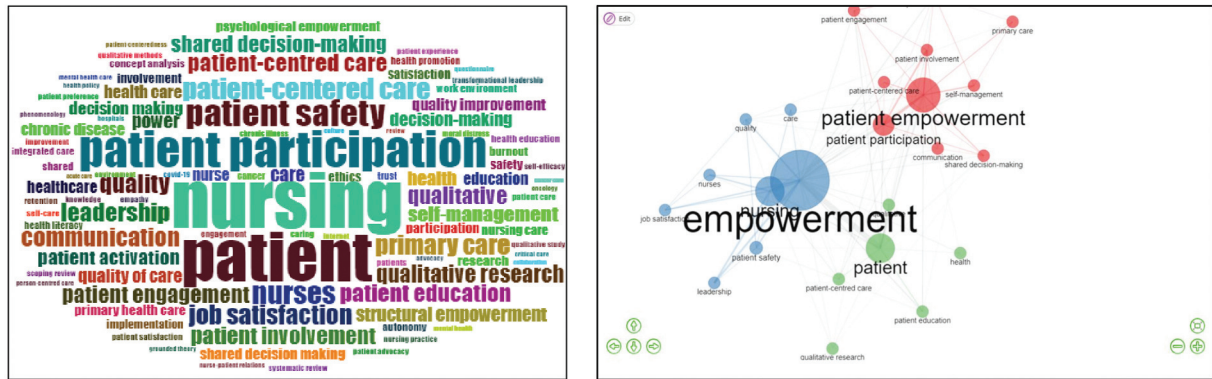
FIGURE 4: a) Word cloud graph of author keywords; **b)** The co-occurrence map process of author keywords.

cluding empowerment (Betw=102.55), nursing (Betw=18.85), quality (Betw=4.76), patient safety (Betw=0.45), job satisfaction (Betw=0.18), nurses (Betw=0.04), leadership (Betw=0.02), and care (Betw=0.01). The third cluster (green) consisted of six-word networks, including patient (Betw=18.12), patient-centered care (Betw=0.37), patient education (Betw=0.11), qualitative research (Betw=0.06), health (Betw=0.2), and qualitative (Betw=0.01). The first cluster was related to patient-centered empowerment studies, the second to nursing practices, and the third to patient education processes.

For the thematic map of the studies on the concept of patient empowerment and care in the field of nursing, the number of words was chosen as 1,000 and the minimum cluster frequency was 5 (Figure 5a). In the thematic mapping analysis, concurrent network clusters were displayed as bubbles on a graph

according to Callon's centrality and density ranking.[27] The word occurrences in the cluster determine bubble size. The x-axis depicts the network cluster centrality or degree of interaction with other graph clusters and measures the importance of a study theme. The y-axis represents density, which is a metric of the internal strength of a cluster network, and theme growth.[28] The engine themes at the top right area indicate high density and centrality and consist of one word, which is empowerment. The top left area consists of the word's opportunities, advocacy, patient satisfaction, and disparities. This area contains low centrality and high density. Therefore, it shows word groups of limited importance related to empowerment and care. The bottom right area denotes the words with low density and high centrality. For this reason, the words care, health care, experience, and validation indicate key themes. The bottom left area shows word groups
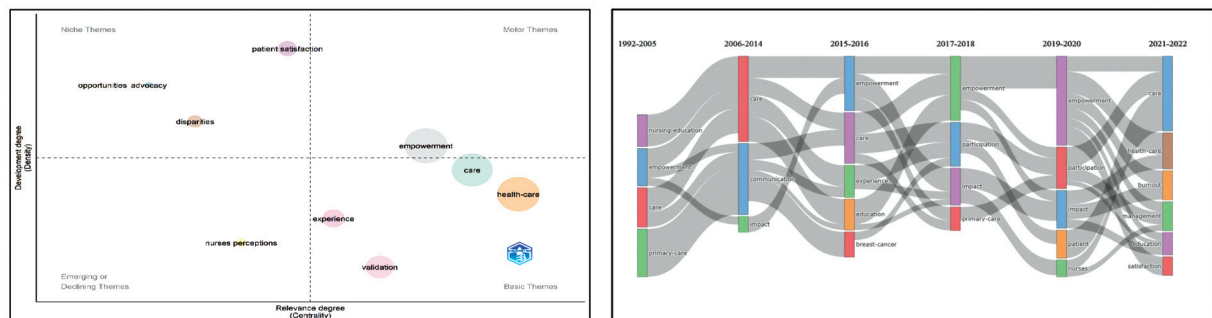

FIGURE 5: a) Thematic map; **b)** Thematic evolution.

with low centrality and density. The phrase nurses' perceptions has a low density and centrality in studies of patient empowerment and care. These themes are vital to interdisciplinary research. In the visual representation, the determination of the trajectory is shown by dividing the time into segments. In other words, a movement towards the top right indicates an ascending trend, whereas a path towards the bottom left indicates a descending trend.

The included studies provided dramatic coherence in that the majority of themes identified were grouped under one thematic area and came from a theme that existed in the previous period. The thematic development process for keywords was carried out in five stages. Thematic evolutionary analysis helps identify evolutionary trends of thematic contexts and correlations and evolutionary trends of structures.[28] Figure 5b shows the progress processes with different themes. An average time interval of 30 years was divided into five groups: 1992-2005; 2006-2014; 2015-2016; 2017-2018; 2019-2020; 2021-2022. It was determined that the frequently used keywords were "nursing" in the early days, "care" between 2006 and 2014, and "empowerment" between 2015-2016, 2017-2018, and 2019-2020. Recently, the keywords "health care", "burnout", "management", and "satisfaction" had frequently been used. While the figure focuses on the evolution of critical issues, key developments between periods can be observed. From to 1992-2020, the topic "Empowerment" was divided into two clusters: "impact" and "communication". From 2006-2020, the topic "impact" became part of the topic "empowerment". In 2015-2016, the cluster "care" merged with the cluster "primary-care," while the cluster "education" merged with the cluster "impact." In 2017-2018, the cluster "empowerment" merged with "participation," while the cluster "participation" merged with "patient." "Primary-care" cluster merged with "participation" cluster. Some clusters were split between the two time periods and merged with others. In 2019-2020, there were changes in the clusters. "Empowerment" cluster started to merge with "health-care," "burnout," "management," and "satisfaction" clusters. In recent years, the "empowerment" cluster has helped the "management" and "education" clusters

grow, the "participation" cluster has helped the "education" cluster grow, and the "nurses" cluster has helped the "management" cluster grow.

To examine the trend topics related to the concepts of patient empowerment and care in the field of nursing, the minimum word frequency was determined as two and the number of words per year as one. When trending topics were examined, the most frequently used topics were "care", empowerment", "healthcare", and "perceptions." While "medical", "malpractice", and "informed consent" were popular in the early years, it was determined that the topics of "guidelines" and "meta-analysis" were popular recently.

DISCUSSION

Nurses have important roles in the field of patient empowerment and care.[9,11] This bibliometric analysis was planned to examine research focuses, research development processes, and thematic trends in patient empowerment and care concepts in the field of nursing. It is thought that the results of the study will strengthen the literature on the concepts of patient empowerment and care in the field of nursing and shed light on the gaps in the relevant literature for researchers.

After 2005, there was a rapid increase in the concepts of patient empowerment and care in the field of nursing, and it was seen that the most effective year was 2022. Patient empowerment is an important concept that concerns all countries and causes an increasing interest in the field with the developments that will occur in this process.[5,29] It is thought that empowerment of patients will lead to the prevention of repeated admissions, alleviation of symptom burden, and reduction of the burden of care.

Publications on the concepts of patient empowerment and care were conducted by authors from 57 different countries, with the USA having the highest number of publications. As the USA is a developed country, the rapid change and development of current information strengthens knowledge production skills. It was observed that universities were among the top 10 institutions that contributed to publications. These universities have published effective studies on team

collaboration. When the results of the country collaboration analysis were analyzed, it was found that the USA collaborated the most with other countries. The concepts of the USA, empowerment, and care represent key points.

It was found that the studies reviewed had been published in journals such as Journal of Advanced Nursing (n=159), Journal of Clinical Nursing (n=128), and Journal of Nursing Management (54 publications), which have a high impact according to the SCImago Journal & Country Rank criteria. The publication of the reviewed studies in high-impact health journals demonstrates the importance and pervasive impact of the concepts of patient empowerment and care.

Popular topics are essential because they address significant issues in a particular field and provide insight into topics that need to be explored.[30] As a result of the keyword analysis, it was seen that the hotspot topics in the fields of patient empowerment and care were concepts such as "self-management" and "patient activation." Self-management plays a key role in increasing patient involvement in care, reducing the burden of health services, and strengthening the role of patients.[31,32] Therefore, the studies reviewed showed that there was an important relationship between the concepts of patient empowerment and care.[31,33,34] Improving the self-management levels of patients is a very difficult process.[32]

However, improving self-management levels is achieved through education, phone calls, and the monitoring of disease-specific parameters. Strengthening patient self-management will improve the quality of care and patient outcomes. In this context, it can be said that the motivation source that directs researchers to the concepts of patient empowerment and care is an effort to increase the quality of care. In the thematic analysis results, our findings were supported by the prominent themes. The concepts of "healthcare," "satisfaction," and "management" were found to be prominent themes. In healthcare management, respecting the patient's autonomy and adopting cooperation within the healthcare relationship are at the forefront in the patient empowerment process.

In the thematic map analysis of the studies related to the concepts of patient empowerment and care, it was determined that the motor theme was empowerment. Additionally, the studies reviewed focused on empowerment in chronic diseases, such as cancer and diabetes.[1,8,34] Individualized patient empowerment increases patients' health literacy levels, strengthens self-care, facilitates clinical decision-making initiatives, and improves patient safety. Nurses' perceptions play an important role in the care and empowerment process of patients.[12] Therefore, evaluating nurses' perceptions and organizing training programs will contribute to improving the quality of care.

Thematic subject analysis reveals how often a subject has been investigated over the years. It was determined that the concepts of "guidelines" and "meta-analysis" were quite popular recently. Meta-analysis and guidelines are included in important research groups with high levels of evidence.[35] Therefore, guidelines should be established to strengthen the level of evidence to bring evidence-based practices together, and the use of existing guidelines should be expanded. Planning randomized controlled trials in the future may strengthen the level of evidence on the subject.

According to the results of the study, the concepts of empowerment and care were among the trend topics. One of the important points is that the concepts of patient empowerment and care have not been adequately integrated. Therefore, it is necessary to conduct comprehensive studies in which the outputs of patient empowerment and care concepts are integrated.

STRENGTHS AND LIMITATIONS

The strength of this bibliometric analysis is that it is on the investigation the research focuses, thematic trends, and developmental processes of the concepts of patient empowerment and care in nursing. However, it has some limitations. First, the study data were limited to a certain period. Second, the study was limited to the WoS database. Additionally, the inclusion of only English studies and the use of keywords accordingly are other limitations. Performing

searches by identifying keywords in other languages may yield different results.

CONCLUSION

With this bibliometric analysis, important data related to patient empowerment and care concepts in the field of nursing were presented. Patient empowerment and care concepts are emerging areas of study in the nursing field. "Guidelines" and "meta-analysis" topics have remained up to date recently. These topics have focused on evidence-based applications. "Care", empowerment", "healthcare", and "perceptions" themes are among the most frequently used topics. Therefore, guiding targeted interventions to increase efficiency and visibility in research on the concept of patient empowerment and care in nursing, leading researchers to conduct research on this topic, increasing research productivity, focusing on patient empowerment issues, and integrating it with care will help fill the gaps. It is considered important to ensure that all patients, especially those with common chronic diseases, are constantly supported and strengthened with face-to-face and online applications in line with technological developments in the hospital and at the patient's home and that they can maintain their self-care and self-management in the best way.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: Merve Gözde Sezgin; *Design:* Merve Gözde Sezgin, Hicran Bektaş; *Control/Supervision:* Hicran Bektaş; *Data Collection and/or Processing:* Merve Gözde Sezgin; *Analysis and/or Interpretation:* Merve Gözde Sezgin; *Literature Review:* Merve Gözde Sezgin; *Writing the Article:* Merve Gözde Sezgin, Hicran Bektaş; *Critical Review:* Merve Gözde Sezgin, Hicran Bektaş; *References and Fundings:* Merve Gözde Sezgin; *Materials:* Merve Gözde Sezgin, Hicran Bektaş.

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