The Big Picture on Professional Values in Nursing: A Bibliometric Analysis

Hemşirelikte Profesyonel Değerlere İlişkin Büyük Resim: Bibliyometrik Analiz

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ABSTRACT Objective: The aim of this study is to examine the trends, thematic orientations, research focus and development of studies on professional values in nursing. **Material and Methods:** In this study, descriptive bibliometric analysis method was used. Data were obtained from Scopus and Web of Science databases on September 17, 2023. The search was conducted in the topic with the keyword "professional values". The results were restricted to the nursing research field. PRISMA guidelines were followed in the screening process. 566 documents were included in the study. R-based biblioshiny program was used for data analysis. Various elements such as number of publications, journals, keyword analysis, productive journals, core journals, productive countries, trending topics, thematic maps were analyzed and visualized. **Results:** The studies were produced between 1981-2023 and were 88.3% article. The average annual growth rate of the field was 8.68%. Publication production has increased since 2009. The studies were produced by 1,465 different authors. The most productive and influential authors were Weis and Schank. The most studies in this field were published in the journal "Nursing Ethics". The most productive country was determined to be the USA. The most frequently used author keywords are "professional value", "nursing students" and "nursing education". The most trending topics were "coronavirus disease-2019", "dignity" and "professionalism". Motor themes are professional ethics, dignity and social values. **Conclusion:** Academic interest in professional values in nursing has increased over the years. However, there is a need for more research in this field, especially in areas such as leadership, patient safety and professional socialization. Existing studies have mostly focused on nursing education. Future research should strengthen the literature and improve nursing practice by focusing on nurses' work environment dynamics and leadership. The development of professional values in these areas will contribute to the advancement of patient care quality.

Keywords: Bibliometrics; nursing; professional values; thematic map; values

ÖZET Amaç: Bu çalışmanın amacı, hemşirelikte mesleki değerler üzerine yapılan çalışmaların eğilimlerini, tematik yönelimlerini, araştırma odaklarını ve gelişimini incelemektir. **Gereç ve Yöntemler:** Bu çalışmada, bibliyometrik analiz yöntemi kullanılmıştır. Veriler, 17 Eylül 2023 tarihinde Scopus ve Web of Science veri tabanlarından elde edilmiştir. Tarama "profesyonel değerler" anahtar kelimesi ile yapılmıştır. Sonuçlar, hemşirelik araştırma alanı ile sınırlandırılmıştır. Tarama sürecinde PRISMA kurallarına uyulmuştur. Çalışmaya 566 doküman dâhil edilmiştir. Veri analizi için R tabanlı biblioshiny programı kullanılmıştır. Yayın sayısı, dergiler, anahtar kelime analizi, üretken dergiler, çekirdek dergiler, üretken ülkeler, trend konular, tematik haritalar gibi çeşitli unsurlar analiz edildi ve görselleştirildi. **Bulgular:** Çalışmalar, 1981-2023 yılları arasında üretilmiştir ve %88,3'ü makaledir. Alanın yıllık ortalama büyüme oranı %8,68'dir. Yayın üretimi 2009 yılından bu yana artış göstermiştir. Çalışmalar 1.465 farklı yazar tarafından üretilmiştir. En üretken ve etkili yazarlar Weis ve Schank olmuştur. Bu alanda en çok çalışma "Nursing Ethics" dergisinde yayınlanmıştır. En üretken ülke ise ABD olarak belirlendi. En sık kullanılan yazar anahtar kelimeleri "profesyonel değer", "hemşirelik öğrencileri" ve "hemşirelik eğitimi" oldu. En çok trend olan konular ise "koronavirüs hastalığı-2019", "haysiyet" ve "profesyonellik" oldu. Motor temalar ise mesleki etik, saygınlık ve toplumsal değerlerdir. **Sonuç:** Hemşirelikte profesyonel değerlere yönelik akademik ilgi yıllar içinde artmıştır. Ancak bu alanda özellikle liderlik, hasta güvenliği ve mesleki sosyalleşme gibi alanlarda daha fazla araştırmaya ihtiyaç vardır. Mevcut çalışmalar, çoğunlukla hemşirelik eğitimine odaklanmıştır. Gelecekteki araştırmalar, hemşirelerin çalışma ortamı dinamiklerine ve liderliğe odaklanarak literatürü güçlendirmeli ve hemşirelik uygulamalarını geliştirmelidir. Bu alanlarda profesyonel değerlerin geliştirilmesi hasta bakım kalitesinin ilerlemesine katkı sağlayacaktır.

Anahtar Kelimeler: Bibliyometrik; hemşirelik; profesyonel değerler; tematik harita; değerler

Professional values are defined as a set of ethical principles, beliefs and attitudes that shape nurses' behaviors, decision-making processes and the quality of patient care. These values form the core of nursing practice and play a critical role in the formation of nurses' professional identities.[1] Professional values form the ethical framework of nursing practice and guide the professionalization of the profession. An in-depth understanding of the role and impact of these values in nursing practice enables correct decisions to be made when faced with ethical dilemmas and contributes to the promotion of excellence in patient care.[1]

The literature on professional values in nursing has examined the role these values play in the professional and personal development of nurses from a broad perspective.[2,3] However, no study has been found that comprehensively assesses the existing body of scientific knowledge in this field and the gaps in the literature. More specifically, the aim of this study was to examine the literature on professional values in nursing using bibliometric analysis. By analyzing and synthesizing the existing literature, this study will provide an overview of research trends on professional values, identify gaps in the literature and suggest potential directions for future research. The study results will aid in the development of nurses' professional values and the advancement of the nursing profession.

Background

Professional values are the main resource of nursing practices and guide the interaction of nurses with patients, colleagues and society.[4] These values provide an ethical roadmap for nurses to respect and protect patients' needs and rights. The 7 core values identified by the American Nurses Association and the International Council of Nurses-altruism, aesthetics, equality, freedom, human dignity, justice and integrity-form the ethical framework of nursing practice. Weis and Schank shape the evaluation of nurses' professional values through 5 factors including caring, activism, trust, professionalism and justice.[5]

Developing professional values starts with the formal nursing education and continues with professional practice.[6] Professional values are fed by professional and individual ethical values. The level of education of nurses, participation in postgraduate education and scientific activities, and the support of institutions for education and academic studies positively affect professional values.[7]

Studies show that professional values positively affect nurses' performance in patient care processes their ability to provide patient-centered care collaboration with colleagues and professional quality of life.[8-11] For example, nurses with high perceptions of professional values have been found to take individuality into account more in patient care and achieve a higher level of professionalism.[12] In addition, having strong professional values has been found to increase job satisfaction, decrease turnover intention and support professional development.[13,14]

Strengthening the professional values of nurses and sustainability of these values will only be possible with a better understanding of the subject. For this, there is a need to reveal the existing scientific knowledge structure on the subject and the gaps in the field. In this context, bibliometric analysis can be used as an effective tool to understand the literature on professional values in nursing and identify opportunities for further research, policy development and practice development

Bibliometric analysis is an innovative research method used to identify gaps in the literature and guide future research in a particular field. This method is used to measure, examine and evaluate the characteristics of scientific literature. The use of this method in nursing research is relatively new. Recently, bibliometric analysis method has been used to examine the topics of leadership and care in nursing, the use of ChatGPT in nursing education and the use of generative artificial intelligence in bibliometric analysis.[15-17]

MATERIAL AND METHODS

RESEARCH DESIGN

Descriptive bibliometric analysis method was used in this study.

THE AIM OF THE RESEARCH

The aim of this study is to examine the trends, thematic orientations, research focus and development of studies on professional values in nursing.

DATA COLLECTION

The data for this study were obtained using the international citation indexes Scopus and Web of Science (WoS). The search was conducted on September 17, 2023. The keyword "professional values" was used. No language restrictions were imposed. Moher et al. reporting steps for systematic reviews were used as a guide to minimize the risk of bias in the data selection and analysis process and to conduct a systematic analysis of the existing literature (Figure 1).[18] One thousand seven hundred and forty four documents were accessed from the WoS database and 2,649 documents from the Scopus database. The search in both databases was limited in terms of nursing discipline. In the next stage, documents that were not related to the field of professional values were removed by 2 independent researchers by examining the titles and abstracts. As a result of these reviews, 317 documents were obtained from the WoS database and 563 documents from the Scopus database. Using the open source R program, 2 separate data files were merged and 251 duplicate documents were removed from the data file by the researchers. At the end of the search, 566 documents were included in the bibliometric analysis.

DATA ANALYSIS

The data obtained (566 documents) were converted into appropriate text format and transferred to the "biblioshiny for bibliometrix" application, an R program tool running in RStudio Version (1.4.1717). The number of publications, journals, keyword anal-
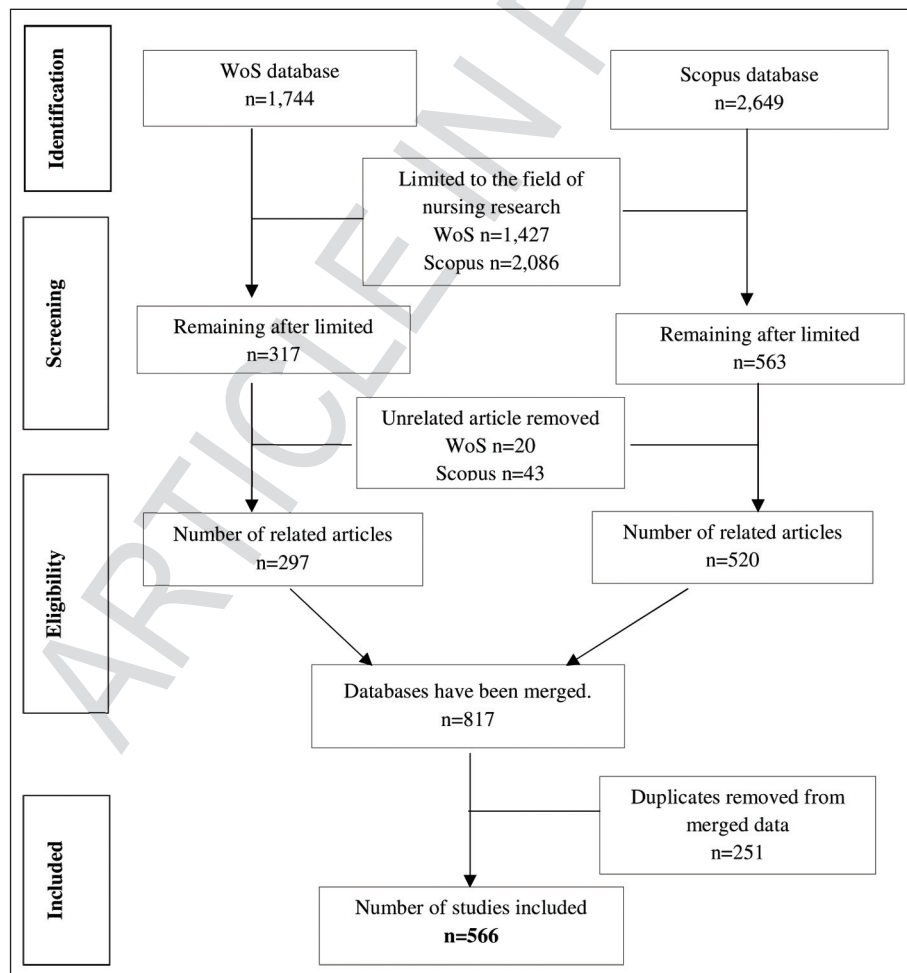

FIGURE 1: Flow chart of literature search and selection process
WoS: Web of Science

ysis, most productive countries, author collaborations between countries, thematic map formation, most cited studies, compliance with Lotka and Bradford's Law were analyzed and visualized.

Validity and Reliability

The accuracy and consistency of the results are considered important for scientific research. In this respect, validity and reliability are the two most commonly used criteria in research. In order to ensure validity and reliability in our study, we used Moher et al.'s reporting steps for systematic reviews (PRISMA guidelines) as a guide.[18] In addition, 2 independent researchers separately reviewed the studies included in the study for eligibility and reached a consensus.

ETHICS COMMITTEE APPROVAL

Since the study had no direct effect on humans and/or animals, ethics committee approval was not required. The study was conducted in accordance with the Declaration of Helsinki.
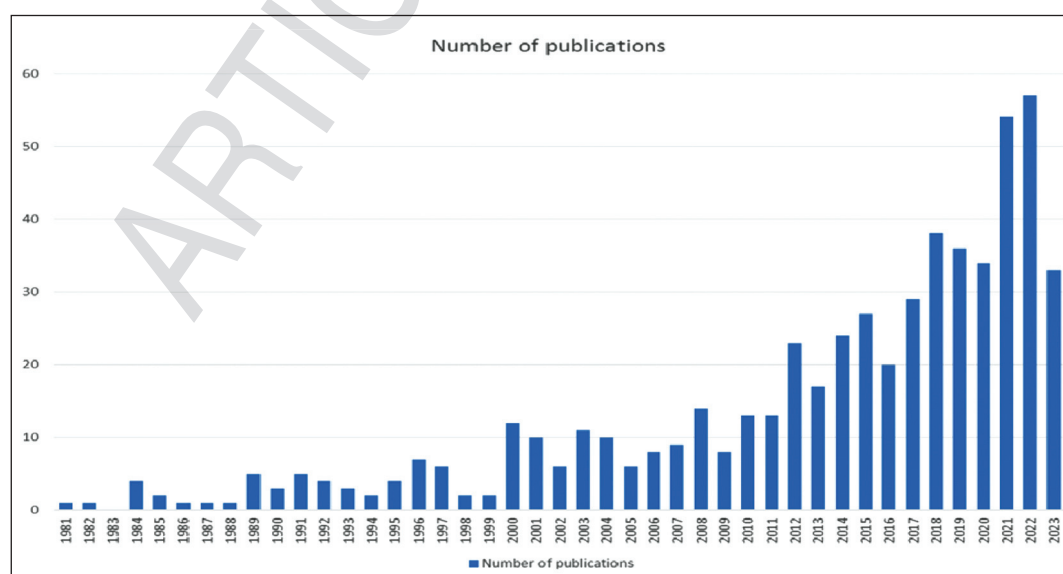
RESULTS

STUDY CHARACTERISTICS

This research showed that there were 566 documents on professional values in WOS and Scopus databases between 1981-2023, of which 88.3% were articles (500 studies), 7.24% were reviews (41 studies), 0.88% were notes (5 studies), 0.70% were editorials (4 studies), 0.53% were conference papers (3 studies), 0.35% were books (2 studies). These documents were produced by 1,465 different authors. 132 documents were single-authored and 434 documents were multi-authored. The average citation per document was 14.97 and the annual growth rate of the field was 8.68%. Furthermore, the co-author collaboration per document was 2.96%.

Graphic 1 shows the distribution of the number of studies by year. While the 1st study on professional values was produced in 1981, the most studies were produced in 2022 (57 studies). The number of studies has been increasing since 2009. As seen in the graphic, the number of studies has been on an upward trend over the years, albeit not regularly.

The studies were produced by 1,465 different authors. Table 1 shows information about the 10 authors with the highest number of publications. Weis (13 studies, 530 citations) and Schank (12 studies, 502 citations) were the most prolific and influential authors in the field of professional values.

In our study, author productivity was analyzed based on Lotka's law. Lotka's law predicts that 60%

GRAPHIC 1: The number of publications by years

TABLE 1: Most prolific and influential authors					
Author	h_index*	g_index*	m_index*	TC**	NP***
WEIS D[5,28]	12	13	0.343	530	13
SCHANK M[5,28]	11	12	0.314	502	12
ALFRED D	5	7	0.238	236	7
MARTIN P	5	7	0.238	236	7
YARBROUGH S	5	7	0.238	236	7
KAYA A	4	5	0.571	105	5
LIN Y	4	4	0.267	127	4
WANG L	4	4	0.286	124	4
ACAROGLU R	3	3	0.300	59	3
ALTUN I	3	3	0.136	187	3

*h_indeks, g_indeks ve m_indeks: measures of productivity and citation impact of publications; **TC: Total number of citations; ***NP: Total number of articles

of authors contribute one article, 15% contribute 2 articles, and 7% contribute 3 articles in a field.[19-21] In the field of professional values in nursing, 91% of the authors (1,327 authors) contributed one article, 7% (104 authors) contributed two articles and 2% (23 authors) contributed three articles. In this case, it is seen that the distribution of authors in the field does not comply with Lotka's law.

MOST PRODUCTIVE AND INFLUENTIAL JOURNALS

Studies on professional values were published in 204 different sources. Table 2 shows the journals that published the most studies. Nursing Ethics (69 studies) was the journal with the highest number of studies, followed by Nurse Education Today (39 studies), Journal of Professional Nursing (18 studies), Journal of Clinical Nursing (15 studies) and Nurse Education in Practice (15 studies).

Bradford's law is a bibliometric law that describes the distribution of scientific articles on a given topic across journals.[22] According to Bradford's law, journals in the 1st zone (Zone 1), called the core group of journals, should contain one third of all publications, journals in the 2nd zone (Zone 2) should contain the other third of all publications, and journals in the 3rd zone (Zone 3) should contain the last third of publications.[23] The Bradford's law core journals on professional values are shown in Figure 2.

There are 8 journals in Zone 1. Nursing Ethics, Nurse Education Today, Journal of Professional Nursing, Journal of Clinical Nursing, Nurse Education in Practice, Journal of Nursing Management, journal of education perspective and Journal of Advanced Nursing are included in this core group of journals. These journals are the most influential sources on professional values. There are 41 journals

TABLE 2: Most influential journals					
Journals	h_index*	g_index*	m_index*	TC**	NP***
Nursing Ethics	24	38	0.828	1,665	69
Nurse Education Today	19	29	0.704	876	39
Journal of Professional Nursing	11	18	0.314	404	18
International Journal of Nursing Studies	9	9	0.321	409	9
Journal of Clinical Nursing	9	15	0.529	298	15
Nurse Education in Practice	8	14	0.571	201	15
Journal of Advanced Nursing	7	11	0.206	245	11
Journal of Continuing Education in Nursing	6	10	0.182	188	10
Journal of Nursing Education	6	9	0.222	93	9
Journal of Nursing Management	6	9	0.250	96	13

*h_indeks, g_indeks ve m_indeks: measures of productivity and citation impact of publications; **TC: Total number of citations; ***NP: Total number of articles
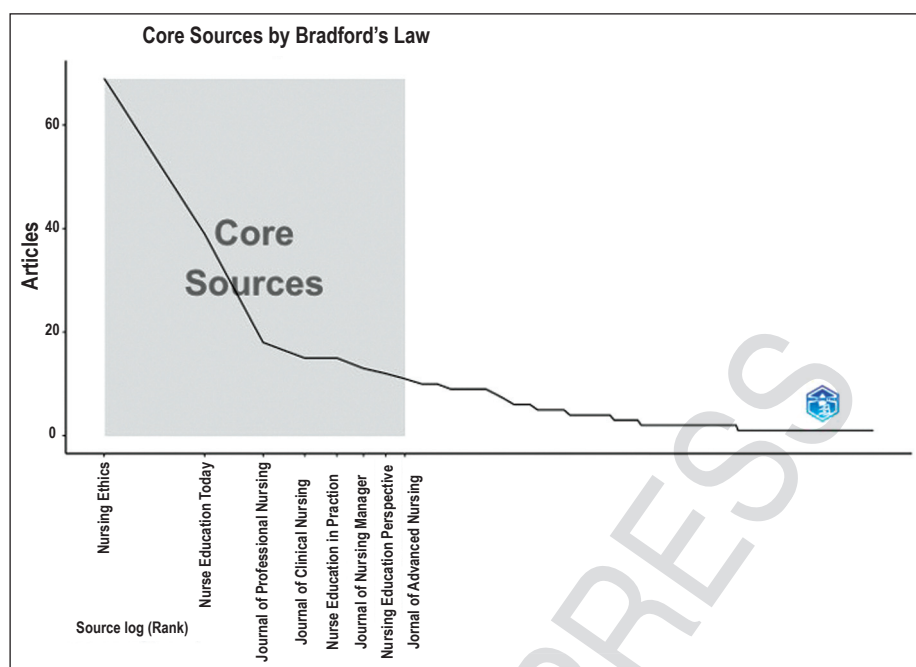
FIGURE 2: Bradford's law

in Zone 2 and 155 journals in Zone 3. Journals in Zone 1 comprise 33.9% of all publications, journals in Zone 2 comprise 33.3% of all publications and journals in Zone 3 comprise 33.8% of all publications. In this case, it is seen that the distribution of studies in the field complies with Bradford's law.

KEYWORD ANALYSIS

It was determined that 1,175 author keywords were used in the studies on professional values in nursing. The words "nurse; nurses" and "professional value; professional values; professional nursing values; professional nursing values; value; values; values; nursing values" and "nursing education; education" were combined and included in the analysis. The 100 most frequently used author keywords in publications are visualized in Figure 3 through word cloud graphs. The size of the keywords in the visualization was directly proportional to the frequency of their appearance in the dataset. The most frequently used author keywords are professional value (195 times), nursing (128 times), nursing students (106 times), nursing education (68 times).

The co-occurrence network of author keywords is given in Figure 4. It is seen that the author keyword

network consists of 2 different clusters. The most frequently used words in the 1st cluster, symbolized in red, are nursing student, nursing education, ethics, professionalism and autonomy. The words in the blue cluster are nurse, professional, attitudes, collaboration, care and leadership. The 1st cluster (red) is related to nursing education, while the 2nd cluster (blue) is more relevant to nursing practice.

TREND TOPIC

Figure 5 shows the trending topics of research in the field of professional values in nursing for over 42 years. Today, the keywords "Coronavirus Disease-2019 (COVID-19)", "dignity" and "professionalism" are used. The keyword "professional values" reached the highest usage volume in 2019.

THEMATIC MAP

The thematic map of the studies on professional values in nursing is given in Figure 6. In this map, X axis symbolizes centrality and Y axis symbolizes intensity. Centrality shows the importance of the theme and intensity shows the development of the selected theme. This thematic map expresses four different theme typologies based on the 2 basic dimensions of intensity and centrality. These are "Motor themes",
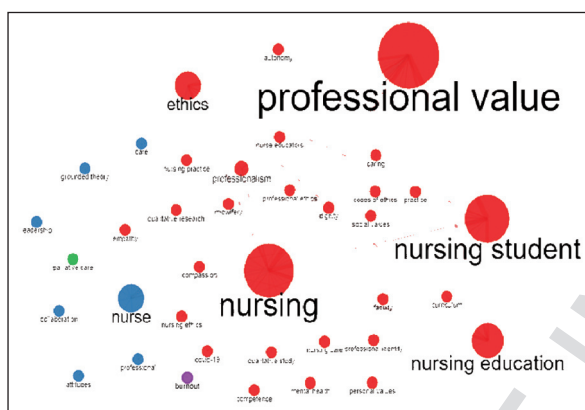
FIGURE 3: Visualized word clouds of author keywords

FIGURE 4: Overview of co-occurrence map of author keywords

"Niche themes", "Basic themes" and "Emerging or Declining themes".

Motor themes refer to themes with high centrality and intensity. They are both important and well-developed themes for the research field. Motor themes in the field of professional values in nursing are professional ethics, dignity and social values.

Niche themes have low centrality and high density. They are important and not well developed themes for the research field.[24] Niche themes in the
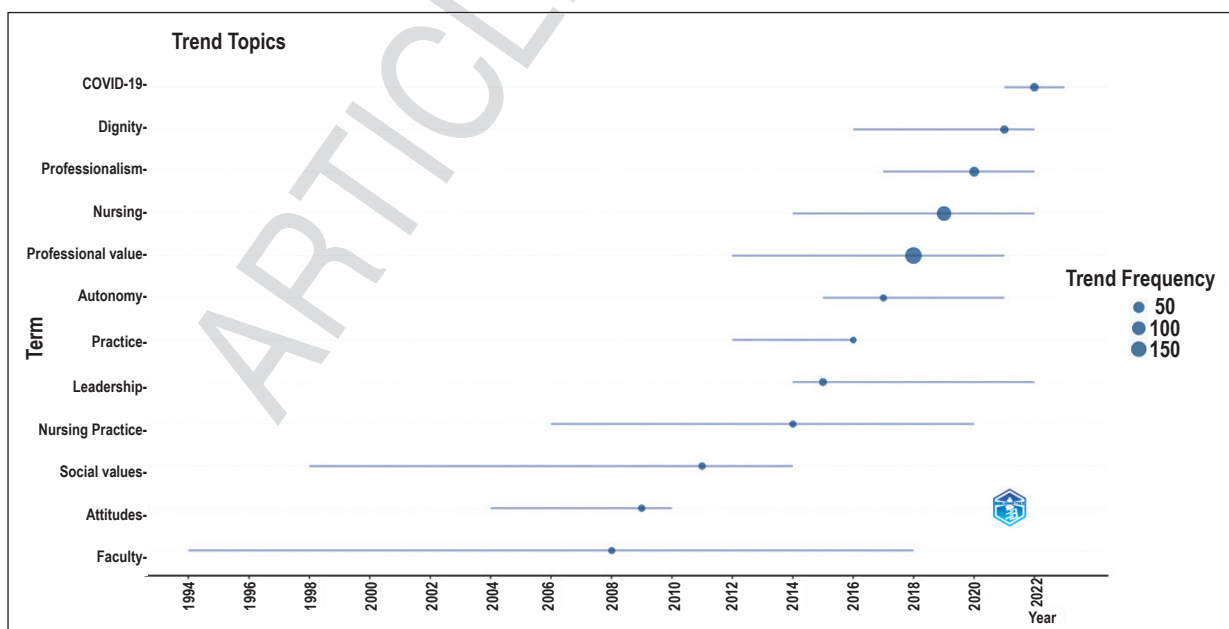

FIGURE 5: Trend topics
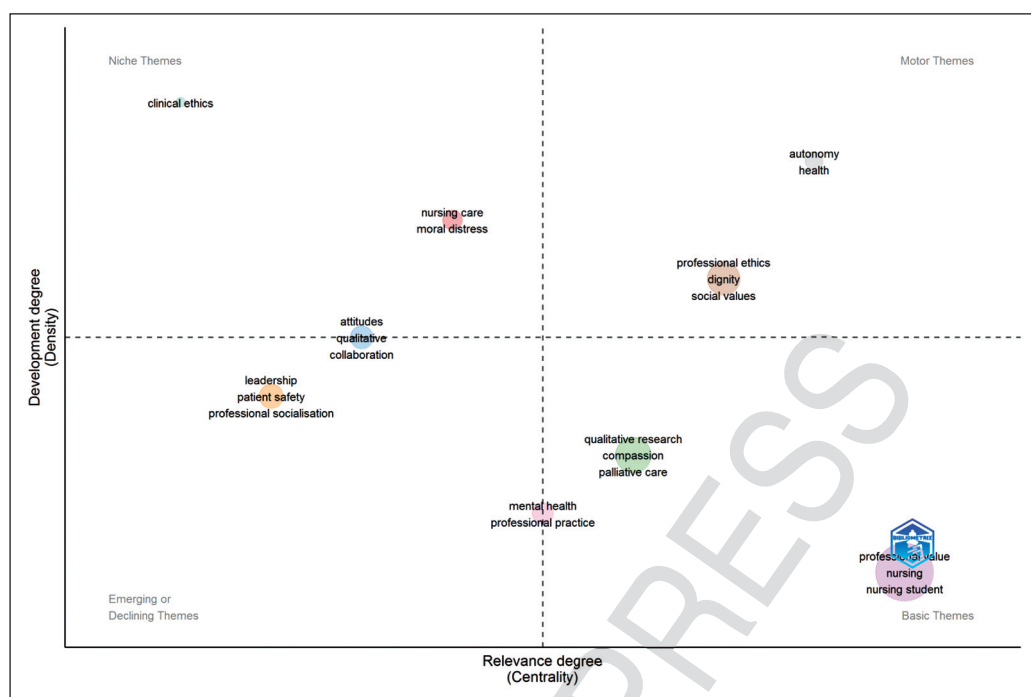COVID-19: Coronavirus Disease-2019

FIGURE 6: Thematic map

field of professional values in nursing are nursing care, moral distress and clinical ethics.

The basic themes have high centrality and low intensity. After the motor themes, it includes the basic themes that are very important for the research field.[25] These are professional values, nursing students, professional practice, qualitative research, palliative care and compassion.

Emerging or Declining themes have low centrality and low intensity. They are themes that have been used but are experiencing a downward trend. They are also themes with low research activity.[26] These themes reveal potential areas for further research. These are leadership, patient safety and professional socialization.

MOST PRODUCTIVE AND INFLUENTIAL COUNTRIES/REGIONS

It was determined that 57 countries contributed to studies on professional values in nursing. Figure 7 shows the country collaboration map. Countries marked in dark blue color in the figure are the countries that have produced more articles. The thickness of the line between the countries in the figure indi-

cates more international cooperation. The most productive country on professional values in nursing was the USA with 211 studies. 37.2% of the studies were produced by this country. This was followed by Türkiye (125 studies), China (91 studies), the UK (86 studies) and Iran (62 studies). It was also found that the most international collaborations were from the USA to China (n=5) and from the UK to Ireland (n=4).

STUDY CITATIONS-THE TOP 10 MOST CITED PUBLICATIONS

The most cited studies at the global level are given in Table 3. Accordingly, the most cited study is Turale's study titled "Challenging times: ethics, nursing and the COVID-19 pandemic" published in the International Nursing Review journal in 2020. The study received 144 citations and the annual number of citations was 36.

THE CO-CITATION NETWORK ANALYSIS

Co-citation clusters are often used to outline the knowledge structure for readers of co-cited and source articles.[27] Figure 8 shows the co-citation network. The node size in the figure indicates the num-
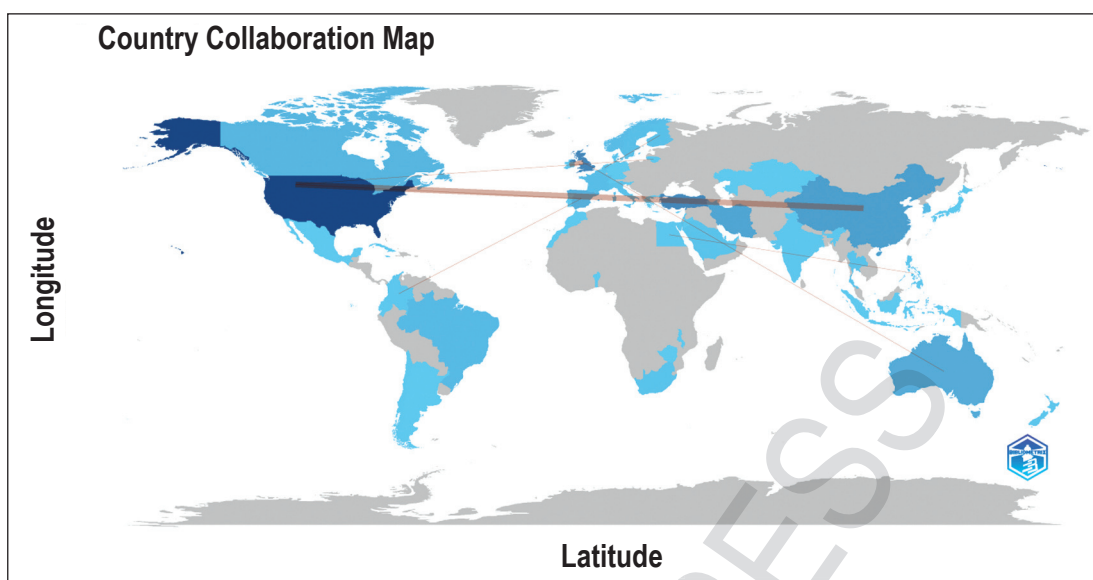
FIGURE 7: Country collaboration map

TABLE 3: The most cited studies			
Paper	**Article title**	**Total citations**	**TC per year**
Turale S, 2020, Int Nurs Rev	Challenging times: ethics, nursing and the COVID-19 pandemic	144	36,00
Gallagher A, 2004, Nurs Ethics	Dignity and respect for dignity--two key health professional values: implications for nursing practice	136	6,80
Rassın M, 2008, Nurs Ethics	Nurses' Professional and Personal Values	135	8,44
Weis D, J Nurs Meas[5]	Development and psychometric evaluation of the Nurses Professional Values Scale--Revised	121	8,07
Weis D, J Nurs Scholarsh[28]	An instrument to measure professional nursing values	119	4,96
Huffman Dm, 2012, Crit Care Nurs Clin N Am	How professional nurses working in hospital environments experience moral distress: a systematic review	103	4,68
Thorne Se, 2000, Int J Nurs Stud	Attitudes toward patient expertise in chronic illness	112	9,33
Bıgwood S, 2008, Int J Ment Health Nurs	'It's part of the job, but it spoils the job': a phenomenological study of physical restraint	99	6,19
Fahrenwald Nl, 2005, J Prof Nurs	Teaching core nursing values	94	4,95
Feng Rf, 2012, J Clin Nurs	Socialisation of new graduate nurses to practising nurses	89	7.42

ber of citations a reference has received, while the line thickness represents the strength of the co-citation. Each cluster in the network is represented by a different color.[26] It was determined that the most frequently cited studies in which the co-citation network consisted of 2 clusters (blue-red) were Weis "Development and psychometric evaluation of the Nurses Professional Values Scale-Revised" and Weis "An Instrument to Measure Professional Nursing Values".[5,28]

DISCUSSION

The number of studies on professional values has increased since 2009 and has reached its highest point in recent years. This shows us that professional values are an emerging field in nursing. The increase in the number of studies may be related to the increased awareness of the impact of professional values on the solution of ethical problems.[29] In recent years, developments in fields such as artificial intelligence, genetic engineering and biotechnology, demographic and social changes, increasing cost of health services, scarcity of resources, and increasing inequalities in health services have increased ethical problems.[29] The effort to find effective solutions to ethical problems may have encouraged nurses to gain a deeper understanding of their professional values. However, the fact that professional values are an emerging field
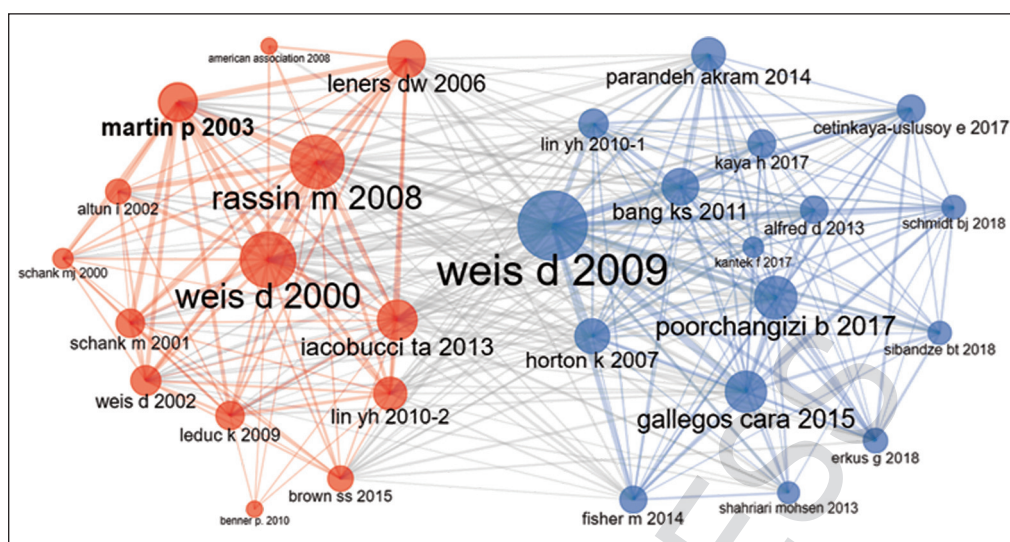
FIGURE 8: The co-citation network

indicates that more research is needed. The fact that the distribution of authors did not comply with Lotka's law supports this view. The authors preferred to conduct research on professional values only once, and the number of authors who specialized on the subject remained limited. In this sense, it can be said that the authors' interest and productivity on the subject are open to improvement. This shows that the field has the potential to expand in the future.

The most productive and influential journal on professional values was Nursing Ethics. Similarly, Blažun Vošner et al. determined that Nursing Ethics was the most productive journal in a bibliometric study examining trends in nursing ethics research. Nursing Ethics is a journal that focuses on ethical issues in nursing.[30] Therefore, it is not surprising that it is the most influential journal on professional values.

The core journals on professional values in nursing were Nursing Ethics, Nurse Education Today, Journal of Professional Nursing, Journal of Clinical Nursing, Nurse Education in Practice, Journal of Nursing Management, Journal of Education Perspective and Journal of Advanced Nursing. According to Journal Citation Reports, these journals have high impact factors. This confirms the importance of research on professional values. It can also be said that it encourages researchers in this regard. Researchers are more inclined to publish their work in journals with high impact factors to achieve maximum impact. It would be useful for researchers and readers interested in the subject to follow these journals. On the other hand, this should be taken into account in planning the collections of university and research libraries and care should be taken to subscribe to these journals.

The most prolific country in the field of professional values in nursing is the United States. The most prolific authors originate from the United States. Similarly, many bibliometric studies conducted on different topics reveal that the USA is the most productive country.[31,32] Considering the high budgets allocated to scientific studies (United Nations Educational, Scientific and Cultural Organization Institute for Statistics, 2018) and the high number of scientists, it can be interpreted as an expected situation that the USA is the most productive.[33] Increasing the budgets of countries for scientific studies can increase the productivity of publications on professional values and the number of researchers interested in the subject.

When the country collaborations were analyzed, it was determined that the countries with the highest number of collaborations were the USA and China. However, it is seen that the cooperation between these countries is quite limited. Every society has unique cultural characteristics. These characteristics may be compatible or incompatible with professional

values. Examining professional values in different cultural settings and making comparisons can contribute to better understanding and developing professional values.

The co-occurrence network of keywords and thematic map provides a graphical overview of key research themes, subtopics and connections, allowing researchers to identify emerging pathways, interdisciplinary commonalities or research gaps. Keyword analysis and thematic map findings show that professional values research focuses more on nursing education. Studies show that there is an important relationship between professional values and nursing education.[6,34] The nursing education process plays an important role in the development of professional values. In this process, students learn and internalize the basic values and ethical principles of the nursing profession. Thus, students transfer these values to practice in their professional lives.[7] Therefore; it can be interpreted as an expected situation that studies on professional values focus on nursing education.

However, it should not be overlooked that the nurse work environment has a great influence on the development and maintenance of professional values. While a supportive, ethical and collaborative work environment encourages nurses to adopt and practice professional values, adverse working conditions may negatively affect these values. Therefore, future studies on professional values should focus on different topics. The thematic map showed that the topics that need to be developed in the field of professional values are leadership, patient safety and professional socialization. This means that there is a gap in the literature on professional values and leadership, patient safety and professional socialization. Future research focusing on these topics will contribute to the strengthening of the professional values literature and to a better understanding of professional values.

LIMITATIONS

It is suggested that the results of this study should be interpreted taking into account certain strengths and limitations. The strength of this study is that it used both WoS and Scopus databases. Thus, the inclusiveness of the data is increased. In addition, it is the 1st bibliometric study on professional values. However, this study has some limitations. The study data is limited to the time period in which the literature review was conducted. Different results may be obtained when a similar study is conducted in a different time period. Also, although there were no language restrictions in the literature review, the search keywords were in English; therefore, the search was semi-limited. Using keywords in other languages may provide more comprehensive results.

CONCLUSION

This study presents a bibliometric analysis of the research on professional values in the field of nursing and reveals important findings. The findings of our study show that although there is an increasing interest in research on professional values in recent years, the field needs to develop. Existing research on professional values focuses more on nursing education. Future studies focusing on areas such as nurse work environment dynamics and leadership will strengthen the literature and contribute to the development of nursing practice.

REFERENCES

1. Liebig D, Embree JL, Lough C. Values and ethics domain for professional identity in nursing. J Contin Educ Nurs. 2024;55(6):279-81. PMID: 38815242.

2. Hussein AHM, Abou Hashish EA. Relationship between nurses' ethical ideology, professional values, and clinical accountability. Nurs Ethics. 2023:9697330231172282. PMID: 37260020.

3. Dellafiore F, Rosa D, Udugampolage NS, Villa G, Albanesi B. Professional values and nursing self-efficacy in the Italian context. Correlational descriptive study. Scand J Caring Sci. 2022;36(1):142-9. PMID: 33751624.

4. Kantek F, Kaya A. Professional values, job satisfaction, and intent to leave among nursing managers. J Nurs Res. 2017;25(4):319-25. PMID: 28683021.

5. Weis D, Schank MJ. Development and psychometric evaluation of the Nurses Professional Values Scale--Revised. J Nurs Meas. 2009;17(3):221-31. Erratum in: J Nurs Meas. 2010;18(1):70-2. PMID: 20069950.

6. Kantek F, Kaya A, Gezer N. The effects of nursing education on professional values: a longitudinal study. Nurse Educ Today. 2017;58:43-6. PMID: 28866254.

7. Sibandze BT, Scafide KN. Among nurses, how does education level impact professional values? A systematic review. Int Nurs Rev. 2018;65(1):65-77. PMID: 28657173.

8. Babaee ZK, Loghmani L, Boozaripour M, Borhani F. Correlation between professional values and burnout of nurses working in hospitals affiliated to Shahid Beheshti university of medical sciences in 2017. Astra Salvensis. 2018;6(1):33-7. https://www.ceeol.com/search/article-detail?id=625167

9. Ashehry AS, Inocian EP, Alharbi HA, Alanazi NH, Adalin NM, Carsula RP, et al. Professional values and self-reported clinical competence of acute care nurses in Saudi Arabia: a cross-sectional study. Eur J Investig Health Psychol Educ. 2023;13(11):2697-708. PMID: 37998076; PMCID: PMC10670218.

10. Torabizadeh C, Darari F, Yektatalab S. Operating room nurses' perception of professional values. Nurs Ethics. 2019;26(6):1765-76. PMID: 29929423.

11. Başoğul C, Baysan Arabaci L, Mutlu Satıl E, Büyükbayram Aslan A. Professional values and professional quality of life among mental health nurses: a cross-sectional study. Nurs Health Sci. 2021;23(2):362-71. PMID: 33433046.

12. Alshammari FF, Grande RAN, Berdida DJE. The correlates of social determinants to ethico-moral values on professional development of Saudi nursing students. J Taibah Univ Med Sci. 2020;16(2):240-6. PMID: 33897329; PMCID: PMC8046827.

13. Chang JC, Lin KM. Exploring the role of professional development motivation between work values and job satisfaction. IEEE International Conference on Industrial Engineering and Engineering Management: December 10-13, 2017; Singapore: 2017. p.2291-5.

14. Caricati L, Sala RL, Marletta G, Pelosi G, Ampollini M, Fabbri A, et al. Work climate, work values and professional commitment as predictors of job satisfaction in nurses. J Nurs Manag. 2014;22(8):984-94. PMID: 23890046.

15. Kantek F, Yesilbas H, Aytur Ozen T. Leadership and care in nursing research: a bibliometric analysis. J Adv Nurs. 2023;79(3):1119-28. PMID: 36464784.

16. Oermann MH, Bailey HE, Carter-Templeton H, Condy C, Wrigley J, Ledbetter LS. Bibliometric analysis of nursing education reviews. Nurse Educ Today. 2024;139:106217. PMID: 38676961.

17. Fijačko N, Creber RM, Abella BS, Kocbek P, Metličar Š, Greif R, et al. Using generative artificial intelligence in bibliometric analysis: 10 years of research trends from the European Resuscitation Congresses. Resusc Plus. 2024;18:100584. PMID: 38420596; PMCID: PMC10899017.

18. Moher D, Liberati A, Tetzlaff J, Altman DG; PRISMA Group. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. PLoS Med. 2009;6(7):e1000097. PMID: 19621072; PMCID: PMC2707599.

19. Potter WG. "Of Making Many Books There Is No End": Bibliometrics and Libraries. Journal of Academic Librarianship. 1988;14(4):238a-38c. https://eric.ed.gov/?id=EJ380485

20. Lotka AJ. The frequency distribution of scientific productivity. Journal of the Washington Academy of Sciences. 1926;16(12):317-23. https://www.jstor.org/stable/24529203?seq=1

21. Rowlands I. Emerald authorship data, Lotka's law and research productivity. Aslib Proc. 2005;57(1):5-10. doi:10.1108/00012530510579039/FULL/PDF

22. Debnath R, Singh SK. Assessment of Bradford's law in publications of central institute of plastics engineering and technology: a study based on Scopus database. Library Philosophy and Practice. 2021;2021:1-14. https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=10533&context=libphilprac

23. Goffman W, Morris TG. Bradford's law and library acquisitions. Nature. 1970;226(5249):922-3. PMID: 5467708.

24. Cobo MJ, Martínez MA, Gutiérrez-Salcedo M, Fujita H, Herrera-Viedma E. 25 years at knowledge-based systems: a bibliometric analysis. Knowl Based Syst. 2015;80:3-13. doi:10.1016/j.knosys.2014.12.035

25. Tao Y, Feng W, He Z, Wang B, Yang F, Nafsun AI, et al. REVIEW Open Access Utilization of cotton byproduct-derived biochar: a review on soil remediation and carbon sequestration. 2024;36(79). doi:10.1186/s12302-024-00908-7

26. Sinha DB, Sinha S, Anu GS, Islam MT, Sahoo D. Twenty-five years of research in the journal of special education technology: a bibliometric analysis. 2023;39(2):174-89. doi:10.1177/01626434231187095

27. Wei F, Zhang G. Exploring the intellectual structure and evolution of 24 top business journals: a scientometric analysis. 2020;;38(3):493-511. doi:10.1108/EL-12-2019-0279

28. Weis D, Schank MJ. An instrument to measure professional nursing values. J Nurs Scholarsh. 2000;32(2):201-4. PMID: 10887722.

29. Gassas R, Ahmed ME, Asloob M. Ethical decision-making confidence and professional values among nurse leaders. J Nurs Adm. 2024;54(6):353-60. PMID: 38767526.

30. Blažun Vošner H, Železnik D, Kokol P, Vošner J, Završnik J. Trends in nursing ethics research: mapping the literature production. Nurs Ethics. 2017;24(8):892-907. PMID: 27364534.

31. Jiang B, Hong N, Zhao F, Dong F. Visualization and analysis of mapping knowledge domains for optic neuritis: a bibliometric research from 2013 to 2022. Int Ophthalmol. 2024;44(1):57. PMID: 38342798; PMCID: PMC10859331.

32. Zhang C, Wang Y, Peng J, Wen X, Zhang Y, Li K, et al. Decoding trends in mRNA vaccine research: a comprehensive bibliometric study. Hum Vaccin Immunother. 2024;20(1):2355037. PMID: 38813652; PMCID: PMC11141478.

33. UNESCO [Internet]. Document Library. ©2025 UNESCO Institute of Statistics [Cited: June 9, 2024]. Available from: https://uis.unesco.org/en/documents

34. Poorchangizi B, Borhani F, Abbaszadeh A, Mirzaee M, Farokhzadian J. The importance of professional values from nursing students' perspective. BMC Nurs. 2019;18:26. PMID: 31312111; PMCID: PMC6610983.