



Health and Spirituality: relevance and challenges of research

RADIOLOGY: the importance of computerized tomography in COVID-19 diagnosis in Brazil

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ABSTRACT

Introduction: since the end of the 19th century, spirituality in health has been increasingly studied, especially in recent years. The degree of subjective understanding allows measuring the extent to which bibliometric studies can be identified, increasing their importance as a fundamental element for the quality of health of users of health services, as well as for improving the ambience and humanization in health. **Objective:** to identify and present the main characteristics of the evolution of global research on spirituality and health. **Method:** this is applied research with a quantitative and exploratory approach in which a bibliometric analysis is carried out. The Web of Science, PubMed, Sage Journal, Scopus and Scielo databases were used to search for studies with the theme of spirituality in all areas of knowledge. We searched for categories with a focus on health and defined the period as the initial year of the databases until July 2021. The mapping results included the number of publications over the years, the number of publications by country and university and their networks, the categories of the most studied research, authors, co-authors and the most cited keywords and their relationship networks. **Results and Final Considerations:** the results indicated significant growth in research on spirituality in health, especially in the years 2020 and 2021, as well as its main characteristics, proposing an effective contribution to the understanding of the state of the theme of spirituality applied to health.

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Keywords:
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Bibliometry; Health spiri-
tuality; Covid-19.*



INTRODUÇÃO

Although spirituality has historically been the object of study in the human sciences, more specifically, in the areas of philosophy and theology,^{1,2} nowadays, it has become the object of scientific study, gaining increasing attention in the social and health sciences, and commonly linked to the theme of humanization.^{3,4} Many researchers attribute spiritual care to specific areas of health, such as nursing and psychology, which are influenced by religion, science, and existentialism.⁵ The reformation of spirituality, as it relates to the health of patients mentally and physically, has been at the heart of health discussions since its genesis.⁶⁻²⁴

Accordingly, several studies have sought to understand the relationship between spirituality in health agents, e.g., physicians, nurses, and nursing technicians, and patients to improve patient care and better serve them through good practices.²² Moreover, in view of patient centrality, other studies have examined how to improve work performance.²⁵ Thus, thousands of scientific articles have taken spirituality as the focus over the years, having particularly potentiated in the last two years during the Covid-19 pandemic period.

Spirituality has become increasingly important, particularly in how healthcare is regarded and in its exercise in the restoration and quality of life of the sick.²⁶ To some extent, there is a consensus that the study of spirituality is relevant for education, practice, and research in health. The relationship between religion and spirituality is undeniably complex, with considerable representative variation given how it appears in the literature, indicating differences in how this relationship is conceptualized.^{11,12,27}

Thus, the conceptual definition of spirituality remains unclear in the nursing literature.^{6,8,11,14,27-29,31-36} The vast scientific literature on spirituality in health has contributed to a significant conceptual breadth over the last two decades.^{11,12,32,33} This large number of definitions points to a lack of conceptual clarity in this field,³⁶ so much so that the lack of conceptual clarity, which hinders its identification,³⁷ has been criticized.³²

Traditionally, in nursing, spirituality was rooted in religion, religious experience, and relationships with a transcendent, higher power, God.^{11,12,14,38}

Although there is no standard nor specific concept of spirituality in health, researchers have distinguished it from humanism, morals, values, and

mental health, linking it specifically by its connection with the transcendent, which can also be immanent. Western traditions refer to it as God, Allah, or a higher power while Eastern traditions call it the last truth or reality, Vishnu, Krishna or Buddha. Spirituality is closely linked to the supernatural and religion, although it also extends beyond religion (and begins before it). It includes a search for the transcendent, and therefore involves traveling along the path that leads from non-consideration to a decision not to believe in questioning belief, devotion, and finally surrender.³⁶

According to recent studies, knowing the nuances of spirituality, as well as its approaches and concepts, is fundamental for health professionals to improve and deliver services that are more focused on patients individual needs.^{7,9,10-12,14-17,39-41}

In this context, this article presents a general objective to identify the main characteristics of scientific research inherent to the theme spirituality in health, thus answering the following questions: Who are the main authors of the theme? What are the main areas of health research on the subject? Which are the main universities that promote research in this field? What is the quantitative historical series of research related to this subject? Which are the countries that promote research related to the subject? What are the main research aesthetics and influence networks? and Which main themes were added to the theme in the health area?

The results aim to provide future applied research with relevant and reliable theoretical bases by offering mapping of essential elements to support the logic of new theories. In addition, reinforcing the justification of the novelty and contribution of the approach of the present research, no studies inherent to the theme were identified throughout the historical series that broadly employ the bibliometry method in the present research approach.

METHOD

The research was categorized as applied, with quantitative and exploratory bibliometric approach. The data were collected through a keyword search in the Web of Science, PubMed, Sage Journal, Scopus, and Scielo databases. All fields that had themes of spirituality were included, and the thematic areas of the bases related to the study of health were selected. In this study, descriptors were used in combination with appropriate Boolean operators to obtain accurate

data. The time interval considered was from 1854 to July 2021, resulting in a sample of 56,454 studies that were delimited in the article category.

Operationally, the research took place through the following steps: (1) definition of the research strategy; (2) data collection utilizing the databases selected for the study and export of the data; (3) import of data into Mendeley; (4) integration of data from the five databases and data merging; (5) complementation of missing data; (6) data synchronization; (7) exporting data; (8) saving imported data; (9) importing data to Vosviewer; (10) rotating raw data; (11) preparing thesaurus files; (12) rotating data again with a Thesaurus; and (13) analysis of results, to identify scenarios, trends, and practical implications. The operational steps follow the guidelines of the research of Sandri *et al.*;⁴² Vilas Boas *et al.*;¹ Vilas Boas *et al.*² and Silva *et al.*⁴³

The bibliometric analysis was supported by the metadata and text data available in the databases selected for the study with the help of *Mendeley and Vosviewer* software (www.vosviewer.com, Universiteit Leiden).

CONCEPTUAL APPROACH: SPIRITUALITY IN HEALTH

Spirituality is considered an essential part of the human condition; spiritual care should be seen as a vital component of holistic patient care and as an important factor that influences the quality of care.^{7,16,18,20,21,44,45} Therefore, scientific studies already recommend and indicate spirituality as a curricular theme of fundamental study in the curricula of undergraduate health programs.²³ In addition, it is seen as a necessary constituent dimension of a health professional's life that serves as a means of obtaining greater satisfaction at work, increasing commitment to the healthcare organization, reducing burnout, promoting greater engagement among professionals, and, consequently, decreasing turnover.²⁵

In their conceptual analysis defined seven main attributes of spiritual care:⁴⁸ curative presence, therapeutic use of oneself, intuitive sense, exploration of spiritual perspective, centralization on the patient, centered meaning intervention, and the creation of a spiritually stimulating environment.⁴⁹

Although much research has been published on the subject, there are studies that indicate that health professionals still need training and instruction to professionalize their performance, given the

specific needs of their patients regarding the necessary spiritual care.⁵⁰ Such professionalization can enhance health treatment and patients' quality of life and recovery.^{37,51}

Although the theme has had a scientific association since 1854, as pointed out by the PubMed platform, in *studies of spiritual pathology (J Psychol Med Ment Pathol)*, health spirituality has increasingly gained notoriety and spiritual research has made great leaps in the last two years. In the survey of scientific bases, we evidenced the evolution year by year and in decades, since the beginning of official records. Results revealed exponential growth, especially in 2020.

Spirituality is a subject of multidisciplinary research and many papers on the subject are published in journals in areas such as theology, sociology, education, management, business, philosophy, anthropology, psychology, medicine, biomedicine and medicine itself with its various specialties. In this study, it is evident that the largest source of publications on telemedicine is the United States, although there is evidence of research in several countries across most continents.

The main authors investigated spirituality in health as it relates to the treatment of patients, the use of instruments for their identification, and the inclusion of the study of spirituality in curricula for the training of health professionals.

Throughout this research, the authors, their relationships, and the themes linked to the studies will be better identified and explored.

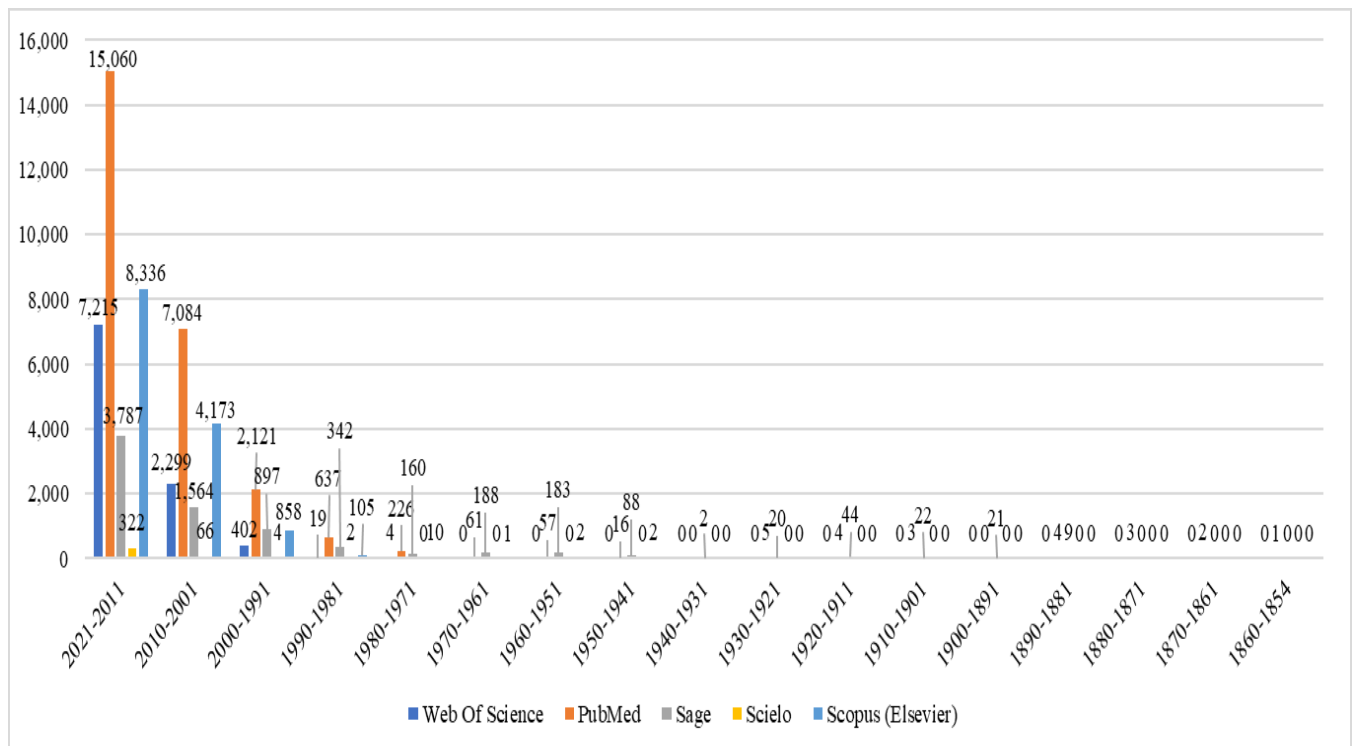
RESULTS

There was an exponential trend in the growth of publications about spirituality in health in the searched databases. Erro! Fonte de referência não encontrada. demonstrates the year-on-year developments from the initial history of each database to July 2021. It was observed that in the initial years, the publications on the bases were practically null, without any expressiveness, with the first studies appearing around 1992. The databases present many accumulated publications recorded in the Web of Science (1975–2021) 9,939 surveys, PubMed (1854–2021) 25,284 surveys, Sage Journals (1881–2021) 7,350 surveys, Scielo (1988–2021) 394 surveys, and Scopus (1947–2021) 13,487 surveys, totaling 56,454 published studies between 1856 and 2021.

Table 1 – First Authors, Article, and Year of Publication.

Authors	Article	Year
Koenig, HG; Cohen, HJ; Blazer, FH; Pieper, C; Meador, KG; Shelp, F; Goli, V; DiPasquale, B ⁵²	Religious coping and depression among elderly, hospitalized, medically ill men	1992
Pargament, KI; Koenig, HG; Perez, LM ⁴⁴	The many methods of religious coping: Development and initial validation of the RCOPE	2000
Davis, DE; Rice, K; Hook, JN, Van Tongeren, DR; DeBlaere, C; Choe, E; Worthington Jr, EL ⁴⁶	Development of the sources of spirituality scale	2015
Büssing, A; Balzat, H; Heusser, P ⁵³	Spiritual needs of patients with chronic pain diseases and cancer: Validation of the spiritual needs questionnaire	2010
Lucchetti, G; Aguiar, PRDC; Braghetta, CC; Vallada, CP; Moreira-Almeida, A; Vallada, H ¹⁵	Spiritist Psychiatric Hospitals in Brazil: Integration of conventional psychiatric treatment and spiritual complementary therapy	2012
Park, CL ¹⁶	The meaning making model: A framework for understanding meaning, spirituality, and stress-related growth in health psychology	2013
Taylor, EJ; Mamier, I ¹⁷	Nurse responses to patient expressions of spiritual distress	2013
Ferrel, B; Chung, V; Koczywas, M; Borneman, T; Irish, TL; Ruel, NH; Azad, NS; Cooper, RS; Smith, TJ ²¹	Spirituality in cancer patients in phase I clinical trials	2020
Fitchett, G; Pierson, ALH; Hoffmeir, C; Labuschagne, D; Lee, A; Levine, S; O'Mahony, S; Pugliese, K; Wait, N ²²	Development of the PC-7, a quantifiable assessment of spiritual concerns of patients receiving palliative care near the end of life	2020
Puchalski, C; Jafari, N; Buller, H; Haythorn, T; Jacobs, C; Ferrell, B ²³	Interprofessional spiritual care education curriculum: A milestone toward the provision of spiritual care	2020

Figure 1 – Basic Publications Timeline in 10-years increments



Source: Prepared by the authors, 2021.

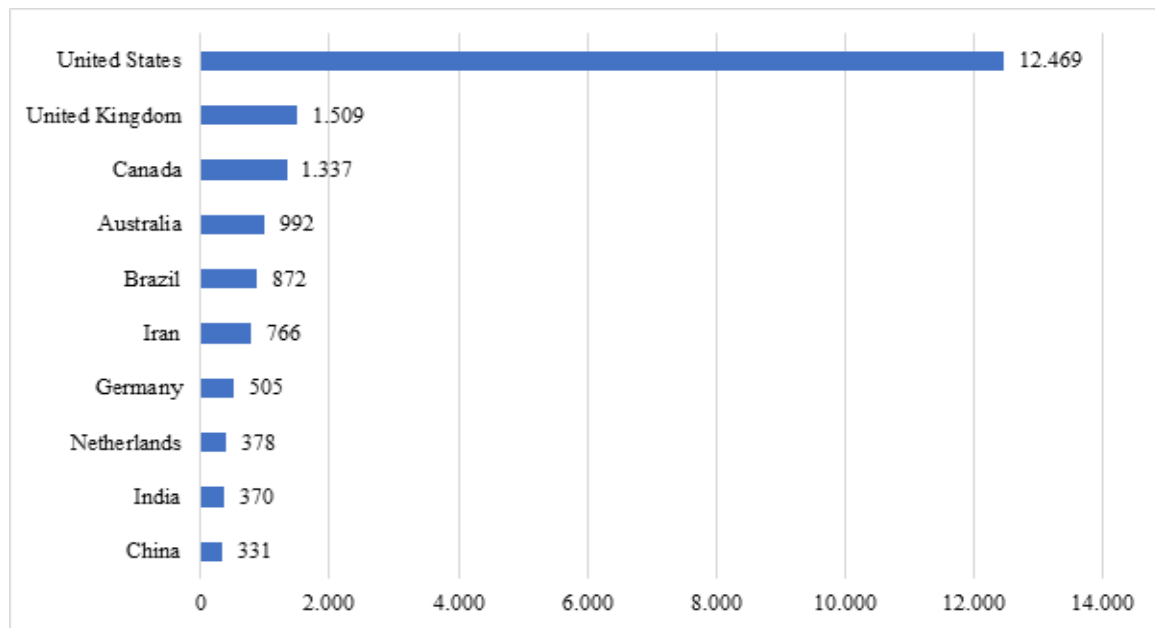
The databases show significant growth in recent years, particularly for the period 1991–2000. It is worth mentioning the remarkable increase in research that occurred in the last 20 years. However, it was in the years of 2019, 2020, and 2021 that there was, and continues to be, the largest evolution in the research and published articles linked to the object of study in these scientific databases. The year 2020, when the Covid-19 pandemic began, showed higher growth than 2019, with consequent vertiginous growth in the research related to spirituality in health.

Covid-19 can be seen as an accelerator of research and publications on spirituality in health, as evidenced by analyzing and compiling data from databases on spiritual studies, where growth from 2019 to 2020 is much higher than that of 2018 to 2019. Analyzing the development of research and publica-

tions from 2011 to 2021, it is evident that there is a substantial jump in research in 2020. According to Em (2021), research on health spirituality has grown since 2020 and is still being conducted as publications are considered until the time of the bibliometric survey (July 2021). This growth may be related to the growing relevance of humanization in the health field, which values patients' well-being and quality of life.

Regarding the countries of origin, according to the metadata analyzed from the databases that gather the information, the clear leader with the highest number of searches was the United States (12,469), followed by the United Kingdom (1,509), Canada (1,337), Australia (992), and Brazil (872). Figure 2 shows the top ten countries with the most publications.

Figure 2 – Top 10 Countries with the Most Publications



Source: Prepared by the authors, 2021.

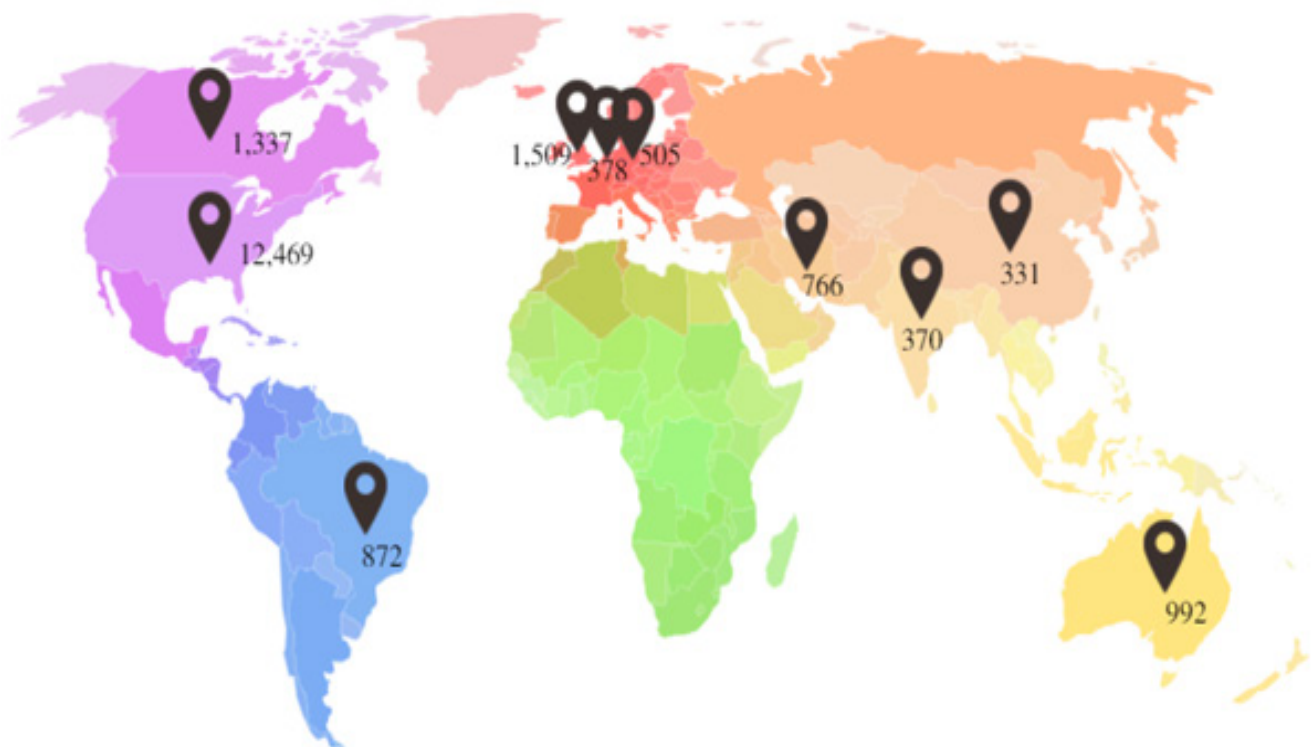
Figure 3 demonstrates the publications on the world map by country; it is possible to identify that some continents have clusters, with several nearby countries having a relevant number of publications while others stand out in isolation.

Just as it is relevant to identify the countries with the highest number of studies and, consequently, articles being published, it is of paramount importance to identify the universities that conducted the most research in this area.

In this sense, an analysis of organizations/universities

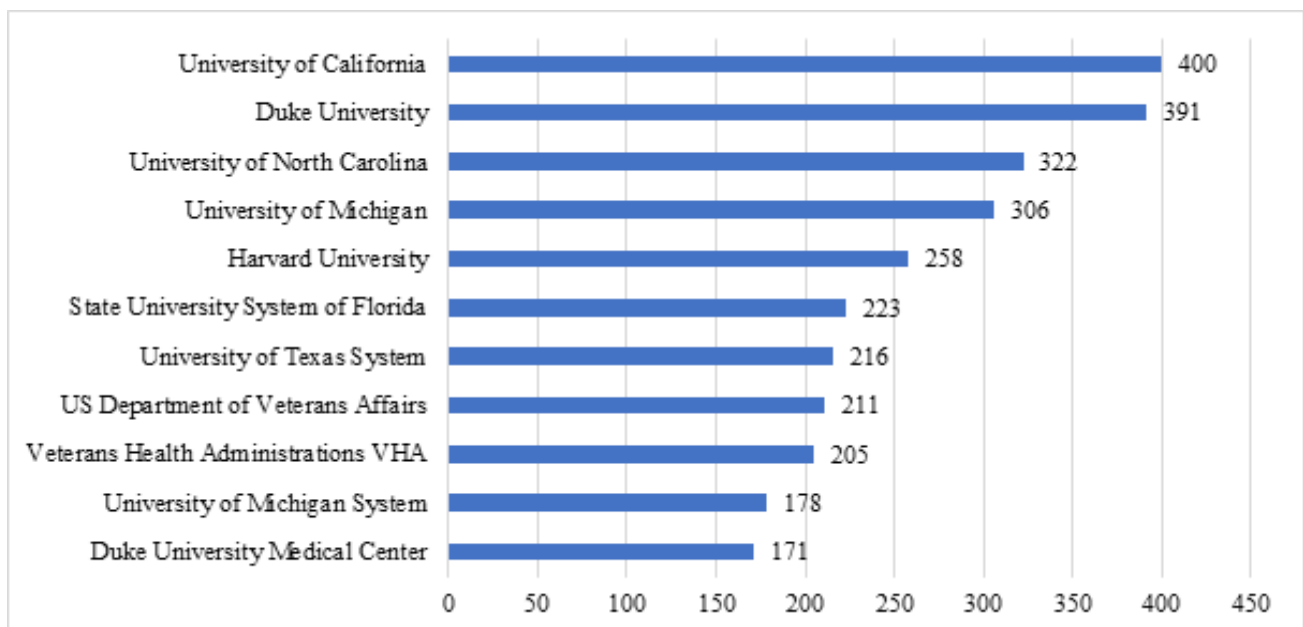
with the highest number of studies was performed according to the metadata provided by the databases. Results indicated that such organizations/universities are all located in the United States, which is renowned for its influential universities. Specifically, the top four universities were The University of California (400 publications), Duke University (391 publications), The University of North Carolina (322 publications), and The University of Michigan (306 publications). All of the aforementioned organizations/universities have more than 300 published articles.

Figure 3 – World Map of Publications



Source: Prepared by the authors, 2021.

Figure 4 – Research by Organizations/Universities

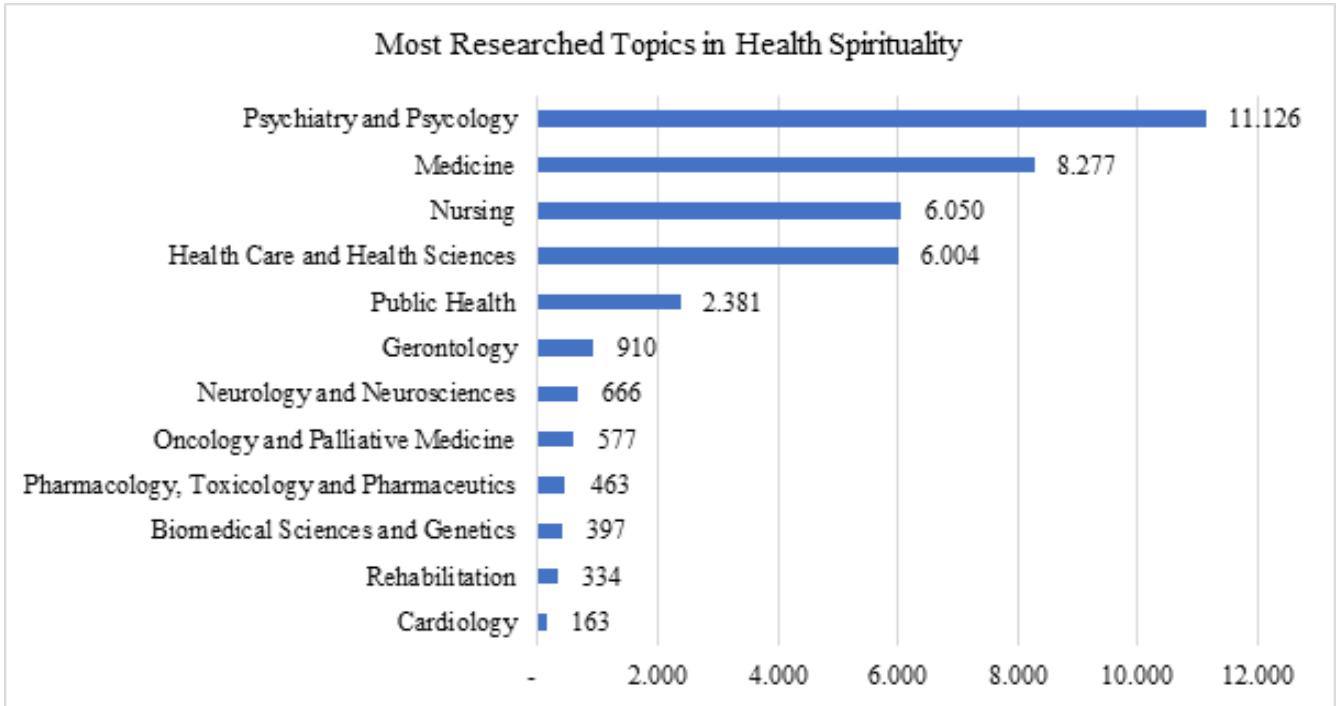


Source: Prepared by the authors, 2021.

With regard to the areas that developed the most research on the subject, as seen in Figure 5, there is a higher concentration in psychiatry and psychology, medicine, nursing, and health care and health

sciences, with areas that exceed 31,000 studies in the research period of each database. It was also apparent that the areas are characterized by being clinical and focused on the public adult care.

Figure 5 - Most Researched Thematic Areas in Health Spirituality

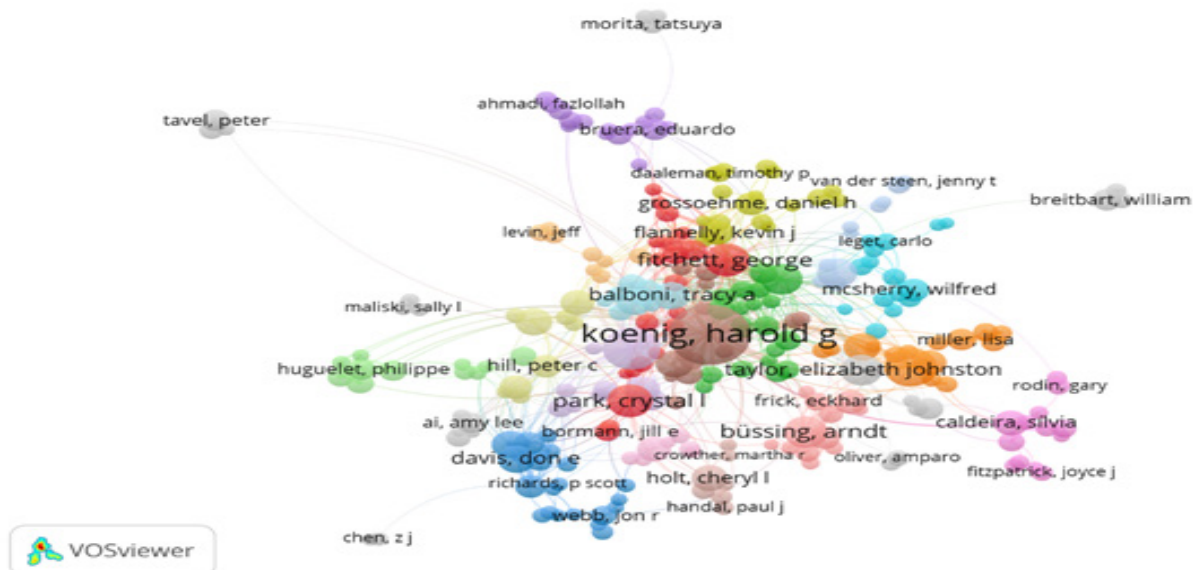


Source: Prepared by the authors, 2021.

Regarding the main authors, the data were analyzed considering a minimum of 20 articles per author. Finally, a total of 76,951 authors were identified, of which 377 met the applied rule and 258

formed consistent relationship networks. Figure 6 the network of authors (analysis item) with co-authorship (analysis criterion). For this analysis, all databases were unified into text files.

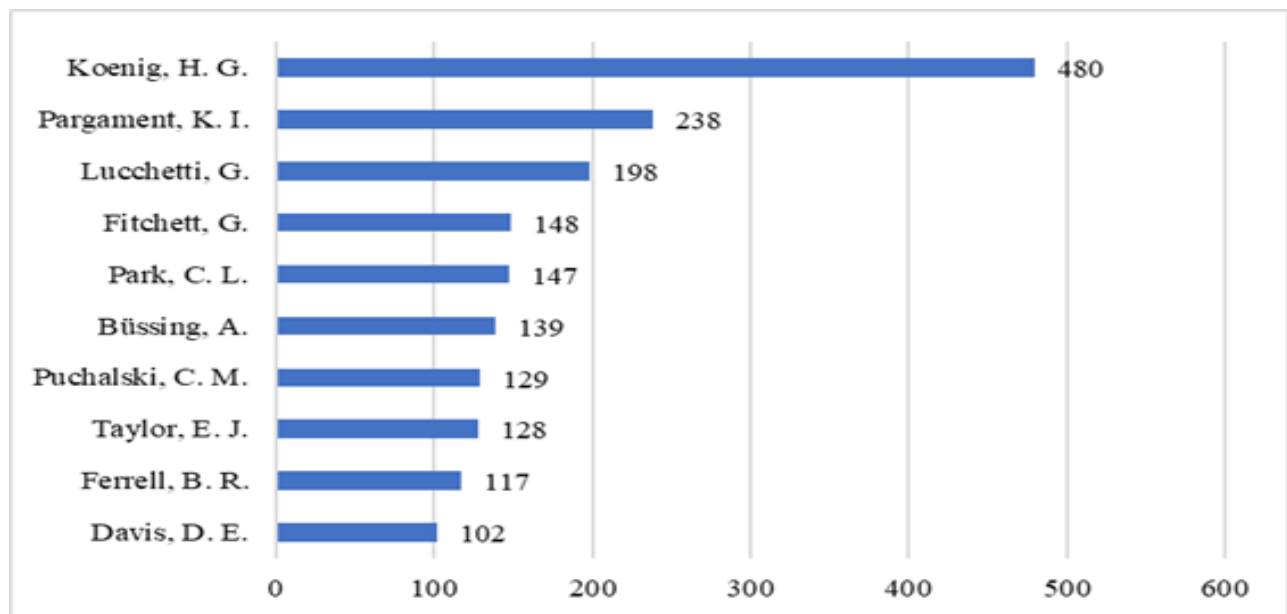
Figure 6 - Author Network



Source: Prepared by the authors, 2021.

It is possible to identify cluster formation in the author network. After combining information from all databases, the authors formed a total of 26 clusters with 258 items (authors), which then formed a total of 849 (links) connections. The number of authors in the top ten clusters was evident: Clusters 1 (21), 2 (20), 3 (20), 4 (18), 5 (15), 6 (15), 7 (15), 8 (14), 9 (13), and 10 (12). Such evidence of cluster formation denotes the existence of some integration among the authors of research related to spirituality

Figure 7 – Number of Articles by Author



Source: Prepared by the authors, 2021.

The keywords that are most cited by the authors in the research are shown *Erro! Fonte de referência não encontrada.*, where one can perceive evidence in the network of keywords (item of analysis) with competition (analysis criterion). For this analysis, all databases were unified and collectively analyzed, making necessary corrections to the structuring of the thesaurus of large areas of keywords. For the composition of the network, keywords with at least 50 occurrences were considered, and of the 18,051 keywords identified, 660 met the criteria required for the formation of the analysis network.

It is possible to identify the formation of a keyword network using colors and the formation of large clusters. The keywords comprise nine clusters with 660 items (keywords), which form a total of 96,749 (links) connections. The nine clusters are as follows: Cluster 1 (213), Cluster 2 (209), Cluster 3 (100), Cluster 4 (72), Cluster 5 (34), Cluster 6 (15), Cluster 7 (13), Cluster 8 (3), and Cluster 9 (1).

Looking at the agglomerations that make up

in health.

Figure 6 below evidences the number of articles published by the authors that gained greater notoriety in data analysis. The top five authors with the largest number of articles are as following: Koenig (480), Pargament (238), Lucchetti (198), Fitchetti (148) and Park (147). When analyzing the strength links (relationship/influence), the two authors with the highest number were Koenig (455), followed by Pargament (238).

the clusters, the most relevant top three clusters are **humans, spirituality, and psychology**. The cluster led by the **human** keyword had 31,104 occurrences while **spirituality** had 23,432 occurrences and **psychology** had 18,874 occurrences. These three keywords formed the top three search clusters. The keywords in the cluster led by humans are: attitudes (6,025), nursing (5,617), methodology (5,531), education (3,796), cultural (2,849), palliative care (2,807), organizations (2,433), terminal care (2,376), family (2,348), pastoral (2,119), and standards (2,018). The keywords in the cluster associated with **spirituality** were religion (15,067), health (7,467), mental health (4,716), social support (3,281), self (3,548), stress (3,001), qualitative research (2,766), articles (2,056), and children (2,036). The cluster led by the keyword **psychology** included female (17,558), gender identity (15,701), adulthood (12,802), survey (5,990), adolescence (4,040), youth (3,628), and cross-cultural (3,499).

The main authors of the themes related to spiritual health are Koenig (480 published articles), Pargament (238), Luchetti (198), Fitchetti (148), and Park (147), with Koenig being the most influential, followed by Pargament.

The identified keywords that led to the three main research clusters were **human, spirituality, and psychology**.

The growth of scientific publications has qualified health treatments through the humanization of patient care, improving the quality of healthcare and consequently mitigating the economic effects of the sector.^{43,54,55}

Further studies may contribute to the scientific advancement of spirituality in health to understand its impact on the quality of treatment and the need to identify tools to measure its efficiency, as well as curricular insertion of this object of study in programs for health students.

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