

# THE EVOLUTION AND RELEVANCE OF SPIRITUALITY OR RELIGION IN MEDICAL PRACTICE: A BIBLIOMETRIC STUDY

## A EVOLUÇÃO E A RELEVÂNCIA DA ESPIRITUALIDADE OU RELIGIÃO NA PRÁTICA MÉDICA: UM ESTUDO BIBLIOMÉTRICO

Matheus Henrique de Abreu Araújo<sup>1</sup>  
Beatriz Pereira Vilela<sup>2</sup>  
Felipe de Araújo Nascimento<sup>3</sup>  
Iasmin Ramos da Silva<sup>4</sup>  
Michelle Rocha Parise<sup>5</sup>

### Abstract

In the health area, the amount of research related to religion/religiosity/spirituality has been growing in recent years, however, the dimension of research and related publications needs to be better explored. This study aimed to present a bibliometric analysis of documents published on the topic of spirituality/religion in the medical field in recent years. There was an active search in the Scopus database with the terms: “health” OR “spirituality” OR “medicine” OR “medical practice”, obtaining 98 documents, of which 55 articles were published between 1988 and 2021. The analysis was presented through graphs, network and density maps.

**Keywords:** religion; spirituality; medical practice; medicine; bibliometrics.

### Resumo

Na área da saúde, o número de pesquisas relacionadas à religião/religiosidade/espiritualidade vem crescendo nos últimos anos, entretanto, a dimensão das pesquisas e publicações relacionadas precisa ser mais bem explorada. Este estudo teve como objetivo apresentar uma análise bibliométrica de documentos publicados sobre o tema espiritualidade/religião na área médica nos últimos anos. Foi realizada uma busca ativa na base de dados Scopus com os termos: “health” OR “spirituality” OR “medicine” OR “medical practice”, obtendo 98 documentos, dos quais 55 artigos, foram publicados entre 1988 e 2021. A análise foi apresentada por meio de gráficos, mapas de rede e de densidade.

**Palavras-chave:** religião; espiritualidade; práticas médicas; medicina; bibliometria.

## 1 Introduction

For a better understanding, it is necessary to clarify the definitions of religion, religiosity and spirituality, so that there are no exchanges between words and the concepts themselves. Religion can be understood as organizations or institutions with specific discourses and practices related to the transcendent. Religiosity, however, is the participation and adherence to

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<sup>1</sup> Discente do Curso de medicina, Universidade Federal de Jataí, Jataí, Goiás, Brasil. E-mail: matheusabreu@discente.ufj.edu.br

<sup>2</sup> Discente do Curso de medicina, Universidade Federal de Jataí, Jataí, Goiás, Brasil. E-mail: beatrizp.vilela@discente.ufj.edu.br

<sup>3</sup> Doutor pelo Programa de pós-Graduação em Genética e Biologia Molecular, Universidade Federal de Goiás, Goiânia, Goiás, Brasil. E-mail: fnascimentopt@gmail.com

<sup>4</sup> Biomédica, Doutoranda no Programa de pós-Graduação em Genética e Biologia Molecular, Universidade Federal de Goiás, Goiânia, Goiás, Brasil. E-mail: iasminramost@gmail.com

<sup>5</sup> Farmacêutica, Docente no curso de medicina, Universidade Federal de Jataí, Jataí, Goiás, Brasil. E-mail: microcha123@ufj.edu.br

practices that the individual believes in and follows, such as participation in religious cults or the study of books on the subject (Forti; Serbena; Scaduto *et al.*, 2020). Spirituality, on the other hand, is even more comprehensive, as it is associated with how each person seeks and establishes definitions concerning the meaning and purpose of life, as well as their relationship with the moment, with themselves, with nature and with the sacred (Menezes *et al.*, 2018).

About the healing and illness process, it is known that since ancient times the religious practices of each person and the monitoring of the health-disease process were directly linked. With the emergence of the Renaissance, medicine and spiritual aspects were distanced, which made them become distinct and unconnected areas in practice and academia (Oliveira, 2017). This separation continued in academia until the 1960s, when studies relating to spirituality and health were published, which led, in 1999, to the inclusion of the spiritual sphere within the concept of health by the World Health Organization (Campos *et al.*, 2020). In the following years, the number of studies relating spirituality to health increased, giving rise to the term “Evidence-based Spirituality”. In this way, the studies demonstrated how spirituality affects the clinic and the evolution of patients, as well as how it could be approached by the health professionals in clinical practice (Lucchetti *et al.*, 2010).

With the inclusion of spirituality in the concept of health, the importance of the spiritual aspect in the clinical picture of a patient became evident, which influenced many medical schools to introduce the theme in their curriculum. In the United States of America (USA), in 2006, more than one hundred of the 125 medical schools in the country had spirituality as a subject in their curriculum. In addition, the importance of this aspect is gaining increasing prominence among health professionals. Institutions, such as the Association of American Medical Colleges, reaffirm the need for physicians to understand the patient broadly, considering their beliefs and values to define the best treatment (Reginato; Benedetto; Gallian, 2016).

Regarding clinical practice, it is known that spirituality is related to an improvement in quality of life and health. Given this, based on the latest research, many patients like it when the doctor discusses their religion and spirituality, and this leads to greater empathy and trust towards the doctor, thus, an improvement in the doctor-patient relationship which becomes more holistic and humanized (Lucchetti *et al.*, 2010).

Thus, the present study aimed to analyze the scientific production about spirituality in medical practice in the Scopus database, seeking to provide a global view of active countries, the collaboration between countries, journals with the most relevant productions, words most used, as well as the evolution and importance of this theme in the context of health.

## 2 Methodology

### 2.1 Data source and research strategy

For the scientometric study, the Scopus<sup>®</sup> bibliographic database was used, which is a registered trademark of Elsevier BV Scopus, with a wide range of abstracts and citations from peer-reviewed literature: scientific journals, books and annals of conferences (www.elsevier.com). The search terms used were: “*health*” AND “*spirituality*” AND “*medicine*” AND “*medical practice*”. Publications from 1988 to 2021 were analyzed.

### 2.2 Data analysis

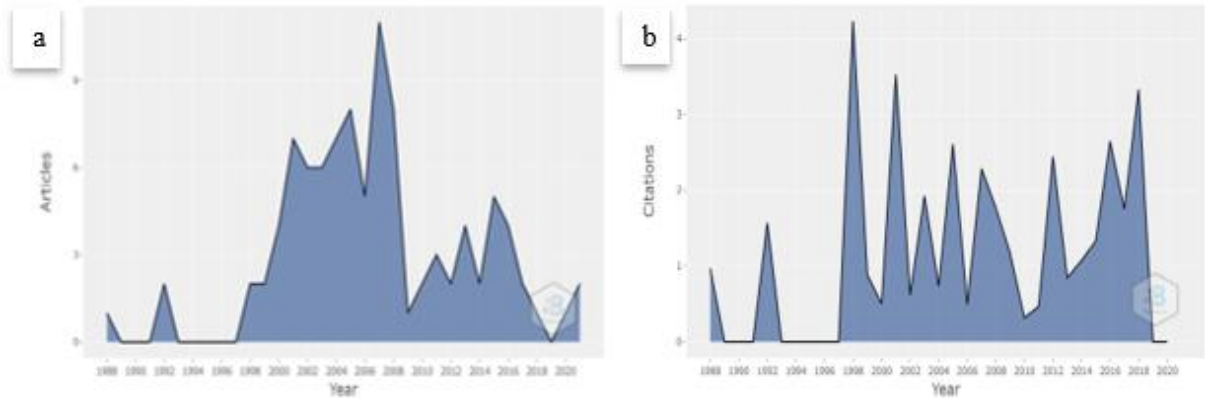
For data analysis, bibliometric parameters were evaluated, such as: the number of articles per year of publication, number of citations per year, the country publication (by affiliation of the first author) and their clusters, clusters of authors, most used abstract terms, journal name, affiliations, country of publication, subject area and relevant keywords compared to citation groups. The bibliometrix package (Aria; Cuccurullo, 2017) of the R software (R..., 2015) was used to analyze these bibliometric indexes. For analysis of co-authorship and reference clusters, the VOSviewer software was used (van Eck; Waltman, 2010).

## 3 Results

There were 93 publications between 1988 and 2021, with an average of 14.5 annual publications. Based on the data obtained and illustrated in Figure 1-a, there was a significant increase in the period from 1998 to 2008 (66 productions), with the highest productivity in 2007, followed by drops and peaks between 2009 and 2021 (27 productions).

Among all types of documents analyzed, the research found 55 articles, 2 book chapters, 7 editorials, 4 letters, 7 notes, 18 reviews and 5 short/brief surveys (Figure 1-b). When it comes to the average number of citations per year, there is a concentration of citations between 1998 and 2019, with annual peaks followed by declines. Over these years, the highest peak was in 1998 with an average of 4.23 annual citations.

**Figure 1:** Total annual production between 1998 (a) and 2021 and average citations per year for all documents between 1998 and 2021 (b)

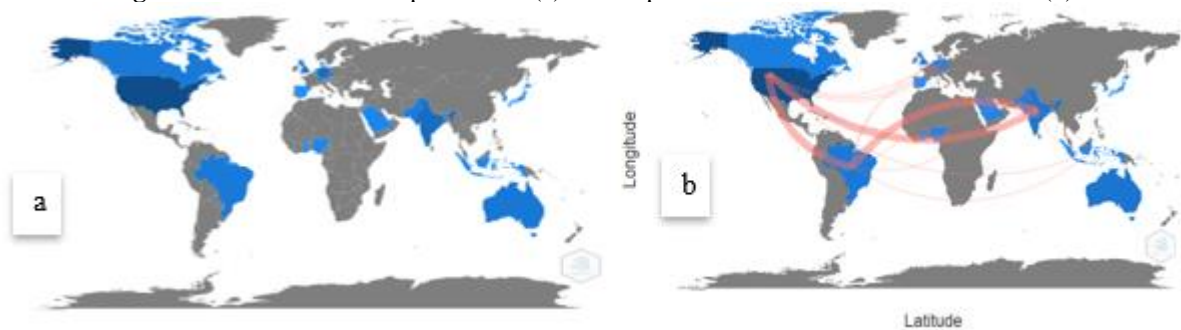


**Fonte:** created by the authors (2024).

Among the scientific productions by countries, considering the nationality of the researchers involved, there is a great predominance of the USA with 166 publications, followed by Germany and India with 13 productions, UK (8), Switzerland (7), Australia and the Czech Republic (6), Brazil, Canada and Denmark (5), Pakistan (4), Indonesia, Nigeria and Saudi Arabia (2), Ghana, Israel, Japan, Netherlands, South Korea and Spain (1) (See Figure 2-a).

When analyzing the relationship between co-authors of different nationalities, one can see a greater partnership between researchers from Brazil and the USA, Brazil and India; India and USA, as seen in Figure 2-b.

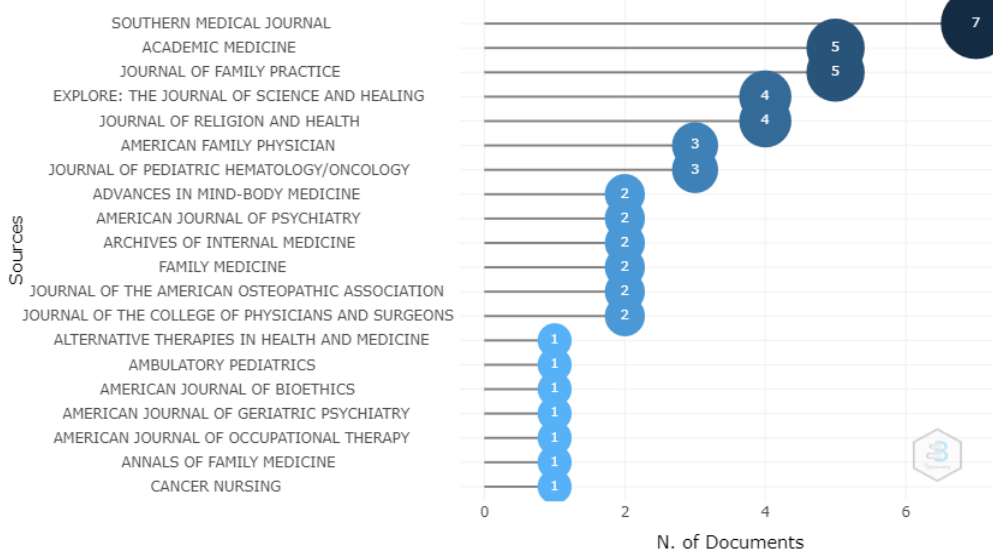
**Figure 2:** Annual scientific production (a) and map of collaboration between countries (b)



**Fonte:** created by the authors (2024).

Figure 3 shows the 20 active journals with the highest number of publications on the topic, according to the keywords used in our study. In this analysis, the journal with the largest number of publications was the *Southern Medical Journal*, with 7 publications, followed by *Academic Medicine* (5) and *Journal of family practice* (5). Other journals are provided in the figure below.

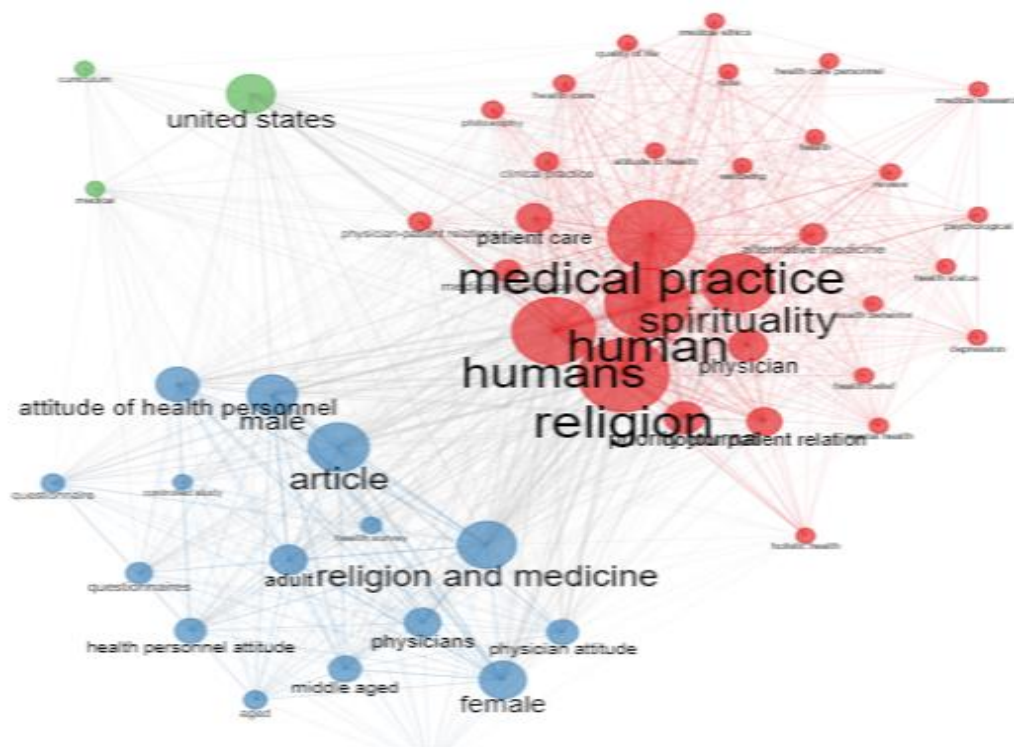
**Figure 3:** The journals with the highest number of publications on the topic



Fonte: created by the authors (2024).

In addition, by analyzing the main terms used in the studies (Figure 4), it is possible to group them and relate them into three clusters: red (spirituality, medical and human practices), blue (article, feminine, religion and medicine) and green (USA). This is corroborated by the greater number of publications in the USA related to medicine and spirituality, with a predominance of female participation in research.

**Figure 4:** Cluster chart of the most frequently occurring terms



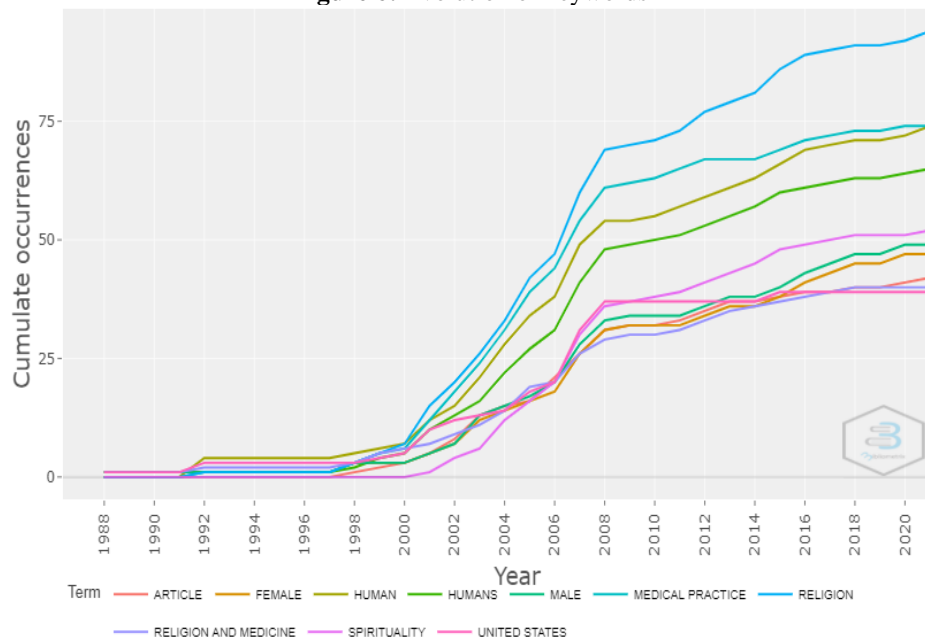
Fonte: created by the authors (2024).

Thus, the terms that stood out the most or were most relevant are presented in Figure 5:



When considering the evolution of the main terms (keywords) over time (Figure 6), it is possible to see that from the 2000s onwards there was a sharp growth in the use of terms [religion, medical practices, human, human, spirituality, United States (USA), male, female, article and religion and medicine] and a slower growth from 2008 onwards. This demonstrates a growing interest in this topic in studies. Among the terms, the frequent use of the word “religion” and “medical practice” stands out, presenting a positive correlation of occurrence between the terms. Furthermore, after 2008 there was a linear trend toward stability of the term “USA”.

**Figure 6:** Evolution of keywords



#### 4 Discussion

The growing search for complementary alternatives to traditional methods in medical practices, aiming at a global understanding of the patient, has promoted an increase in research on spirituality, religion and religiosity related to medicine. However, production in this area is still incipient, especially bibliometric studies that present a comprehensive view of productions worldwide, showing maps of connection in networks of countries, researchers, citations and publications.

Hereupon, it is possible to notice that the USA was the country that contributed the most with scientific production — 166 (approximately 13 times more than the runners-up, Germany and India). The expressiveness of North American publications on the subject is corroborated in other bibliometric studies, such as the study by Demir (2019) that evaluated spirituality, religion and health between 1975-2017 on the Web of Science (WoS) platform, pointing to the USA with 60.5% of the productions (495 articles). In another study, Ivanitskaya, Bjork and Taylor (2021) evaluated Catholic health care, between 1973-2019 on the Web of Science (WoS) platform, presenting the USA also in first place with 119 productions. In the Şenel (2018) study, that evaluated Abrahamic religions (Christianism, Islam and Judaism) and health, between 1975-2017 — using the Web of Science database, including WoS Collection Core Collection, the Korean Journal Database, the Russian Science Citation Index and the SciELO Citation Index —, the USA was also the country with the highest number of publications on the subject, even though these religions originated in the Middle East (non-Western). This is probably due to a pioneering historical factor and research interest in the subject in this country. In addition to the USA, it is also possible to note significant contributions from other countries on the subject with contributions from different research centers. In this article, there was a greater partnership between researchers from Brazil and the USA, Brazil and India; India and USA.

The result of the analysis of the keywords is shown in figures 4 and 6. The most used terms in the publications were: religion, medical practices, humans, spirituality, United States (USA), masculine, feminine, article and religion and medicine; with emphasis on “religion” and “medical practice”. This suggests that spirituality and religion are fundamental concepts of medical practice, seeking a more global understanding of the subjects. This can be evidenced in several studies, such as: patient treatment (Sajadi *et al.*, 2018); caregiver health (Borjalilu *et al.*, 2016; Geng *et al.*, 2019); pain management and palliative care (Peres *et al.*, 2007; Ferreira-Valente *et al.*, 2020); treatment of depression (Panier *et al.*, 2020); expression of biomarkers (Ohnishi *et al.*, 2017), among others.

Over the years, the study of spirituality and its relationship to health and well-being has become increasingly insidious. A meta-analysis study by Shattuck e Muehlenbein (2020), conducted from 87 studies and 618 results, analyzed the influence of spirituality/religiosity on markers of healthy and sick people (with AC, chronic heart disease, HIV). Despite the heterogeneity of the studies being high, it was evident that spirituality and religiosity are associated with an improvement in health measures such as lower cholesterol, lower BMI and lower inflammatory markers. It was also evident a positive relationship in the production of T cells in patients with HIV, which indicates remission of the disease.

In another study conducted by Bravin *et al.* (2019), the researchers observed that in patients with Chronic Kidney Disease there is a need to include spirituality and/or religiosity in the care of these patients, since they enabled an improvement in situational coping, in the development of hope and in coping with pain, a drop in the suicide rate and depressive symptoms in these patients, as well as a perception of improvement in quality of life and kidney function after transplantation.

In another cross-sectional study, carried out by Vitorino *et al.* (2018), with 1046 Brazilian adults, different levels of spirituality, religiosity and the influence on the quality of life, optimism, happiness and mental health were analyzed. In the study, it was evident that those who have a higher level of spirituality and religiosity tend to deal better with stress, fear, anguish, sadness, anger and anxiety, as well as better mental health and quality of life.

Furthermore, it is necessary to consider that we used the Scopus database, as suggested by Falagas *et al.* (2008), due to greater coverage of journals and citation analysis capacity, although it is currently limited to recent articles (published after 1995), unlike other bibliometric articles on the subject that used the Web of Science (Şenel, 2018; Demir, 2019; Ivanitskaya; Bjork; Taylor, 2021).

## **5 Strengths and limitations**

In our article, we highlight the importance of spirituality or religion in medical practice in the analysis of scientific production on the subject. This topic, of great relevance, has a lack of studies that can measure the benefits of spirituality from quantitative analysis. Thus, we highlight, as a limitation of this study, an in-depth analysis of the quantitative benefits of spirituality for human health. In the last 30 years, the amount of research related to this topic is considered very low compared to other studies in the medical field, concentrating enormously on empirical analyses, reviews and qualitative observational studies that make our quantitative



observation of these benefits difficult. Even so, we highlight the strength of this study for bringing unpublished bibliometric analysis to the literature, showing the relationship between authors and countries, and complementing the knowledge about this evolving topic.

## **6 Conclusions**

This research concluded that the USA is the country with the largest production and integrative network among countries in this theme. There was an increase in publications in 1998, with a peak in 2007, and an upward trend. Terms such as “religion” and “medical practice” showed a correlation, standing out from the other terms of the study.

Undoubtedly, Religion/Spirituality and Medicine/Medical Practice are fundamental concepts for improving the mental health and quality of life of health professionals, patients, families and caregivers. This study made it possible to show the evolution and importance of this theme in the context of health.

## **Ethical considerations**

This study does not involve human beings. The analysis was performed only on bibliometric data published in open databases. The ethical committee analysis is not applicable. The human subjects’ protections are guaranteed.

## **Authors contributions**

The authors contributed equally to the conception and the outline of the work, the writing, the critical review and the approval of the final version of the manuscript.

## **Conflicts of interest**

The authors declare that they have no conflicts of interest.

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**Submission date:** December 30, 2024

**Date of acceptance:** February 25, 2025