

# Scientometric Analysis of Global Scientific Publications in the Field of Spiritual Health: A Study of Trends, Scientific Collaborations, and Conceptual Evolution

Seied Younes Hosseini<sup>1</sup>, Mahnaz Mohseni<sup>2\*</sup>

<sup>1</sup> Faculty of Nursing and Midwifery, Tehran Medical Sciences, Islamic Azad University, Tehran, Iran

<sup>2</sup> Department of Knowledge and Information Science, Payame Noor University, Tehran, Iran

\* **Corresponding Author:** Mahnaz Mohseni, Department of Knowledge and Information Science, Payame Noor University, Tehran, Iran. E-mail: [mahnaz.mohseniii@gmail.com](mailto:mahnaz.mohseniii@gmail.com)

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## Abstract

**Introduction:** Spiritual health, as one of the fundamental dimensions of human health, has received significant attention from health researchers in recent years. This study maps spiritual health publications globally, identifies key trends and collaborations, and reveals their conceptual structure.

**Methods:** The present study is considered an applied type of research and was conducted using scientometric techniques and by employing Scopus. Data were retrieved on April 3, 2025, using a specific search strategy. After data preprocessing, analyses were performed using Bibliometrix software and the Biblioshiny graphical interface in the R environment. Moreover, some descriptive graphs were drawn using Microsoft Excel software.

**Results:** A total of 605 scientific documents related to spiritual health were identified, showing an increasing trend from 2000 onwards and a peak in 2024. Iran is at the top of scientific publications with 195 documents. Shahid Beheshti University of Medical Sciences in Iran is also the most active research institution in this field. Analysis of scientific collaborations between countries and institutions indicates the centrality of Iran and its strong links with Islamic countries. Synonym analysis of keywords indicates the close connection of spiritual health with concepts such as mental health, quality of life, anxiety, depression, and nursing.

**Conclusion:** The study highlights spiritual health as an expanding interdisciplinary field with religious, psychological, and social dimensions, crucial for holistic well-being. Enhancing global collaboration and practical applications are key to its advancement. Findings can guide future research priorities, promote cross-cultural collaborations, and support evidence-based policy-making in spiritual health.

**Keywords:** Spiritual Health, Bibliometrix, Scientific Collaboration, Quality of Life, Mental Health

## Introduction

Spiritual health is one of the key dimensions of human health, which, along with physical, mental, and social health, is known as one of the coordinating and promoting factors of health.<sup>1</sup> This dimension of health includes understanding and discovering the meaning of life and experiencing emotions like love, happiness, peace, and satisfaction, as well as achieving maximum individual capabilities despite facing adversity.<sup>2</sup> Spiritual health not only helps to create balance in life but also plays an important role in increasing an individual's adaptation to problems and diseases and is associated with improving mental and physical health.<sup>3</sup> The two main dimensions of spiritual health include religious health (connection with God or a higher

power) and existential health (connection with self, others, and the environment).<sup>4-6</sup> These dimensions create balance in life, peace, harmony, and closeness to self, God, society, and the environment.<sup>1</sup> In addition, spiritual health, by creating a sense of positivity, morality, and interconnectedness, has a significant impact on the quality of life of individuals.<sup>6,7</sup>

Indicators of spiritual health include a sense of identity, purposefulness, satisfaction, love, respect, positive attitude, peace, and inner balance, all of which contribute to promoting a person's overall well-being.<sup>8</sup> Research has demonstrated that spiritual health serves as an important resource for adaptation and coping, especially in critical situations like chronic illness,

severe stress, and global crises, such as the COVID-19 pandemic.<sup>9,10</sup>

In recent years, with the increase in psychological and social challenges, including stress, anxiety, and chronic diseases, attention to spiritual health as an effective strategy for promoting resilience and adaptation to problems has increased.<sup>11,12</sup> Accordingly, given the widespread impact of spiritual health on various aspects of life, scientific research in this field has increased in recent years. The analysis of the knowledge structure of this field through scientometric studies can help identify research trends, gaps, and future directions. Scientometric analysis, as an advanced method in the evaluation and examination of knowledge structure, can help understand research trends, scientific collaboration networks, and key concepts in this field. In this regard, scientometric analyses in religion, spirituality, and health indicate a significant growth in scientific publications over the past two decades. A study by Saberi et al. (2021) focusing on the Middle East and Iran indicated Iran's significant contribution to scientific publication in health. In addition, the prominent role of Iranian universities of medical sciences in producing spiritual health knowledge has been evident; however, international collaborations in scientific publications in this field have not been considerable.<sup>13</sup> On the other hand, a study conducted by D'Andria Ursoleo et al. (2025) on spiritual care at the end of life confirmed the growing global trend in this field. This research revealed that the COVID-19 pandemic has led to special attention to spiritual dimensions in palliative care. Moreover, the prominent role of nurses and clergy in providing spiritual care compared to physicians indicates interdisciplinary approaches in this field.<sup>14</sup>

Other analyses, including the research by Şenel and Demir (2018) on the bibliometric analysis of publications in the "Religion and Health" journal, indicated that the United States, by producing 1665 articles (62.45% of the total literature on the subject), has acted as a pioneer in research on the relationship between religion, spirituality, and health. This study also reported that the most important keywords used in scientific publications in the "Religion and Health" journal were "religion," "spirituality," and "mental health," which indicates the main focus of studies on the links among psychology, spirituality, and health.<sup>15</sup> In addition, Yaminfirooz et al. (2024), in a study on global research trends in religion, spirituality, and

health, revealed that the United States and the United Kingdom were recognized as leading countries in these fields. Moreover, the University of Toronto (Canada) and Harvard Medical School (United States) were found to be the leading scientific institutions in producing knowledge in these fields.<sup>16</sup> In a similar line of research, Öntürk Akyüz et al. (2025) conducted a bibliometric analysis on spiritual healing in nursing, revealing that since 2016, spiritual topics have significantly increased in the nursing literature. Their analysis of 878 articles from the Web of Science Core Collection showed that the United States led the field, with substantial contributions from Iran, the United Kingdom, and Brazil. Institutions such as Loma Linda University and the University of São Paulo were among the most productive. This study highlighted spirituality, nursing, patients, and palliative care as the most frequent keywords, reflecting the growing global integration of spiritual healing into nursing practice.<sup>17</sup>

Despite the increased research, a comprehensive scientometric analysis of global trends, collaborations, and conceptual evolution in spiritual health remains limited. The objective of this study is to conduct a comprehensive scientometric analysis of global spiritual health scientific publications by examining global publication trends, patterns of international collaboration, and the evolution of conceptual frameworks in this field. Using scientometric techniques, the study aims to map the scientific landscape of spiritual health and generate insights that can inform future research directions and policy-making.

## Materials and Methods

The present study is considered an applied type of research and was conducted using scientometric techniques. The statistical population includes all scientific publications related to the "spiritual health" topic indexed in the Scopus database.

Accordingly, the required data were retrieved from the Scopus database on April 3, 2025, using the following search strategy and without considering language and time limits:

TITLE ("spiritual\* health" OR "spiritual\* wellbeing" OR "spiritual\* wellness" OR "religious health")

The retrieved data were saved in CSV format and then entered into Bibliometrix software for scientometric analyses. In order to perform graphical analyses and visualize the data, the Biblioshiny user interface was

used, which is a web-based environment for the R package based on Bibliometrix.<sup>18</sup>

It should be noted that before scientometric analyses on the data, preprocessing operations, including text homogenization and removal of stopwords, were performed. For this purpose, synonyms were converted into main words, and words with no specific meaning in spiritual health were removed as stopwords.

In the data preprocessing stage, singular and plural forms of words were standardized by converting all terms to their singular form (e.g., hospital, hospitals → hospital; student, students → student). Additionally, synonymous terms were unified to reduce semantic redundancy. For instance, variations such as well-being and psychological well-being were consolidated under the term well-being.

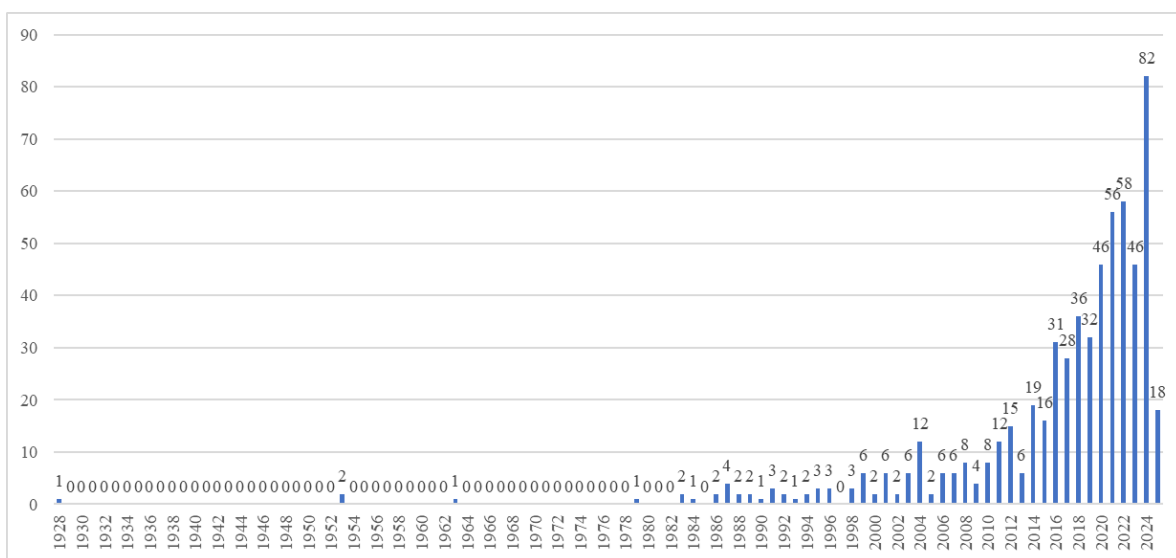
Stopwords were removed based on standard English stopword lists (e.g., am, is, are). Moreover, terms unrelated to the core subject of spiritual health—particularly those indicating article type or methodology—were also excluded, such as meta-analyses, methodological studies, reviews, and cross-sectional studies. This approach ensured a more focused and meaningful analysis of relevant content in the field.

The Bibliometrix software is one of the powerful tools in bibliometric data analysis and allows the examination of various dimensions of scientific publications, including authors, journals, countries, scientific collaborations, highly cited articles, keywords, and conceptual networks.<sup>19</sup> This tool can also analyze scientific networks, e.g., co-authorship, co-citation, and co-occurrence of keywords, and displays them in the form of graphical diagrams.

It is noteworthy that the descriptive diagram related to the distribution of publications in annual trends in scientific publications was drawn using Microsoft Excel software. These analyses have been conducted to provide a clear visualization of the scientific structure and research trends in the field of spiritual health and pave the way for the development of targeted research policies in the future.

### Results

Through a comprehensive search of the Scopus database, data were extracted from 605 scientific documents pertaining to the field of spiritual health. Figure 1 presents the annual trend of scientific publications in this domain.



**Figure 1.** Annual Trend of Scientific Publications in the Field of Spiritual Health.

Figure 1 demonstrates that scientific publications in the field of spiritual health have been indexed in the Scopus database since 1928. Sustained growth in publication output began in 2000, with the year 2024 marking the highest number of publications in this field to date. Meanwhile, Table 1 presents the top-

contributing countries and institutions contributing to scientific publications on spiritual health.

**Table 2** presents the distribution of scientific publications in Spiritual Health by country and institution. Iran tops the list with 195 publications, followed by the USA with 136 and the UK with 36. At

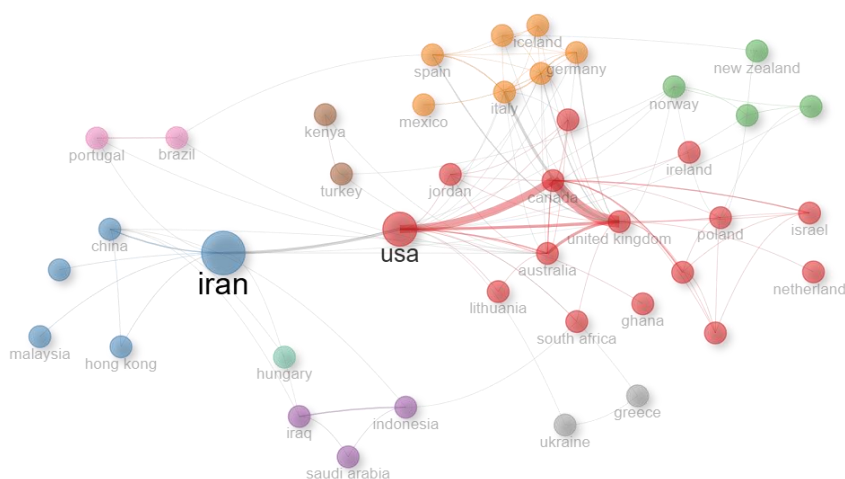
the institutional level, the leading research organizations are Shahid Beheshti University of Medical Sciences with 27 publications, Baqiyatallah University of Medical Sciences with 22, and Shiraz University of Medical Sciences with 22.

Figure 2 illustrates the international collaboration map based on co-authorship patterns among countries

in the field of spiritual health publications. In Figure 2, each circle (node) represents a country. The size of the circle indicates the volume of publications from that country, while the lines (edges) connecting the circles represent collaborative relationships. The thickness of the lines reflects the intensity of collaboration between two countries.

**Table 1.** Top-contributing Countries and Institutions in the Production of Scientific Publications in the Field of Applications of Spiritual Health

NO.	Country	Number of Publications	NO.	Organization	Number of Publications
1	Iran	195	1	Shahid Beheshti University Of Medical Sciences	27
2	USA	136	2	Baqiyatallah University of Medical Sciences	22
3	UK	36	3	Shiraz University of Medical Sciences	22
4	Australia	32	4	Tehran University of Medical Sciences	18
5	Canada	26	5	Mashhad University of Medical Sciences	17
6	Taiwan	18	6	Isfahan University Of Medical Sciences	16
7	India	17	7	Iran University of Medical Sciences	14
8	China	16	8	Hamadan University of Medical Sciences	13
9	Turkey	14	9	Kerman University of Medical Sciences	12
10	South Africa	11	10	Gonabad University of Medical Sciences	11



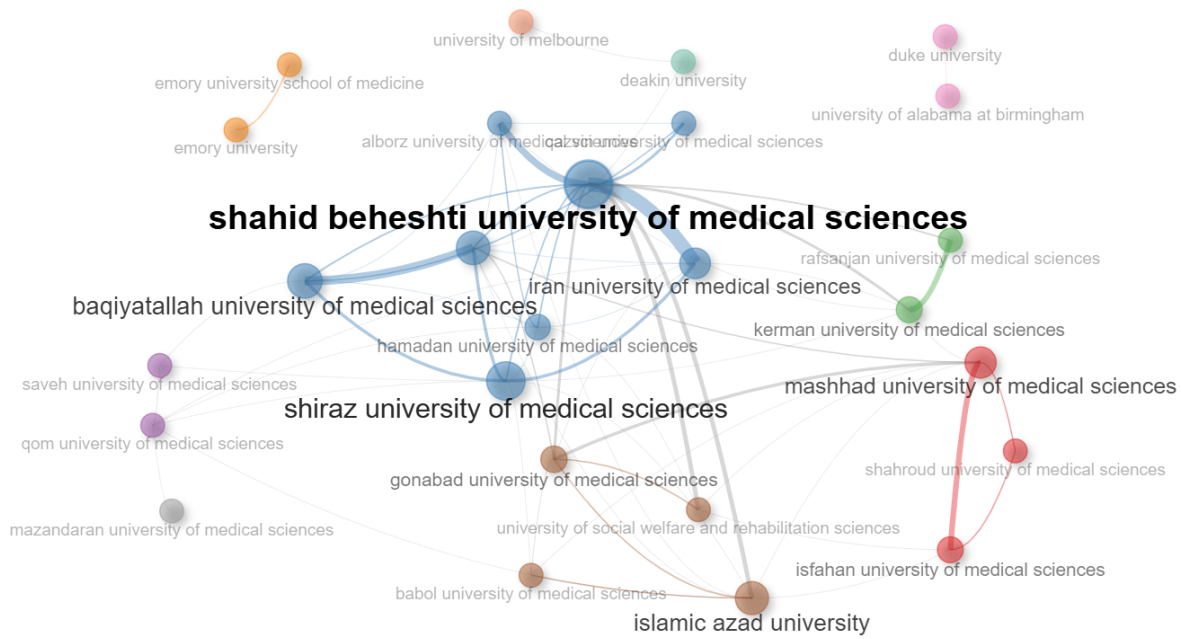
**Figure 2.** International Collaboration between Countries in Scientific Publications of Spiritual Health.

The data presented in Figure 2 illustrate that Iran, as the largest node in this network, occupies a central position in the scientific interactions within the field of spiritual health, serving as the primary hub for collaboration. This country has the strongest connections with Malaysia, Saudi Arabia, Indonesia, and Egypt, forming a robust group of Islamic nations that share similar cultural and religious backgrounds. In contrast, the United States is positioned at the center of the red cluster, which also includes collaborative ties with countries such as the United Kingdom, Canada, and Australia.

Figure 3 illustrates the map of scientific collaboration based on co-authorship patterns among institutions in

the field of scientific publications pertaining to spiritual health. In Figure 3, each circle (node) represents an institution. The size of the circle indicates the volume of publications from that institution, while the lines (edges) connecting the circles represent collaborative relationships. The thickness of the lines reflects the intensity of collaboration between two institutions.

Figure 3 shows that Shahid Beheshti University of Medical Sciences serves as a central and prominent node within the blue cluster. Its broad partnerships with numerous local organizations highlight its significant contribution to the progress of scientific understanding in the area of spiritual well-being. The



**Figure 3.** International Collaboration between Institutions in Scientific Publications of Spiritual Health.



**Figure 4.** Word Cloud of Scientific Publications in the Field of Spiritual Health.

group also features Baqiyatallah University of Medical Sciences, Shiraz University of Medical Sciences, and Iran University of Medical Sciences, which collectively represent the foundation of spiritual health research in Iran. Conversely, various smaller and more scattered groups indicate that certain institutions experience minimal collaboration and are somewhat isolated from the primary network of cooperation.

Figure 4 presents a word cloud depicting the most frequently used keywords (word clouds) in scientific publications within the field of spiritual health.

Figure 4 demonstrates that "spiritual health" and "spirituality" dominate the keyword frequency analysis, followed by "spiritual well-being," "nurse," "health," "COVID-19," "mental health," "religion," "quality of life," "anxiety," and "depression."

Figure 5 illustrates a network visualization of keyword

co-occurrences in spiritual health research literature. Within this network, circles (nodes) correspond to distinct keywords, while connecting lines (edges) signify conceptual linkages between them. The proportional sizing of nodes reflects term frequency counts, and line thickness denotes the relative strength of association between paired keywords.

Figure 5 reveals three primary clusters. The red cluster centers around core concepts like 'spirituality' and 'religion,' emphasizing religious dimensions. The blue cluster connects 'spiritual well-being' with psychological and health-related concepts such as 'mental health' and 'quality of life.' The green cluster relates to psychological challenges, including 'stress,' 'depression,' and 'anxiety,' highlighting the mental health dimension of spiritual health.

Furthermore, smaller clusters such as the yellow, orange,

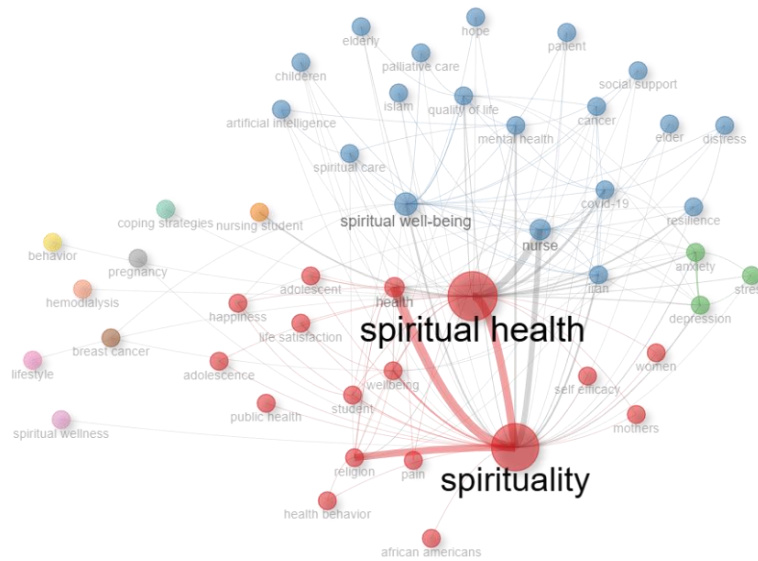


Figure 5. Word Co-occurrence Map of Scientific Publications in the Field of Spiritual Health.

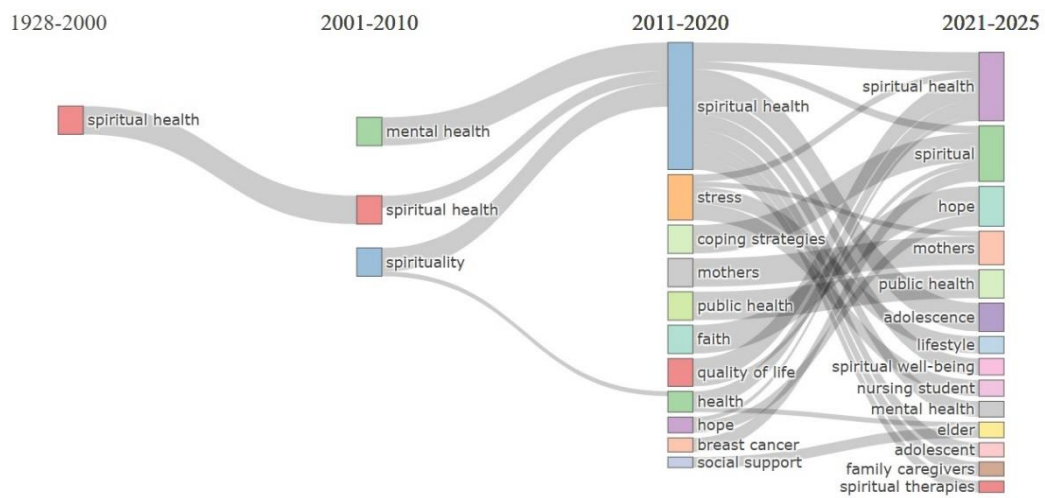


Figure 6. Thematic Evolution of the Field of Spiritual Health.

and pink groups contain terms with weaker yet still meaningful correlations to specific dimensions of spiritual health. The interconnections between these clusters, visualized through linking lines, demonstrate that spiritual health constitutes a multidimensional concept encompassing religious, psychological, and social domains.

Figure 6 illustrates the evolution of themes in spiritual health from 1928 to 2025. This figure indicates the themes related to AI in medical sciences from 1928 to 2024 in four time periods: 1928-2000, 2001-2010, 2011-2020, and 2021-2025. This diagram shows how scientific publications in the field have developed over time, highlighting the changing and

evolving nature of these themes.

Figure 6 demonstrates the thematic evolution of research in the field of spiritual health from 1928 to 2025, segmented into four distinct time periods. In the earliest period (1928–2000), scholarly attention was primarily centered on defining and conceptualizing "spiritual health" as a broad and foundational construct. Between 2001 and 2010, the focus began to shift, with "mental health" and "spirituality" emerging as prominent subthemes, reflecting a growing interest in the psychological dimensions of spiritual health. The decade of 2011–2020 marked a significant diversification in research themes, as studies began to explore specific contexts and populations, incorporating terms such as

"stress," "coping strategies," "faith," and "public health." Most notably, in the most recent period (2021–2025), the field exhibits a clear transition toward applied research, with increasing emphasis on practical and clinical applications—evident in the rise of themes like "spiritual well-being," "nursing students," "family caregivers," and especially "spiritual therapies." This shift underscores a broader trend of integrating spiritual health into healthcare practices, signaling its growing relevance in therapeutic and supportive care settings.

This trend highlights a gradual shift in research focus within the field of spiritual health—from broad theoretical discussions toward more practical and context-specific applications aligned with contemporary societal needs. In recent years, studies have increasingly concentrated on specific groups such as nursing students and family caregivers, with a growing emphasis on the use of spiritual interventions as therapeutic approaches. This shift reflects the maturation of the field and a rising interest among researchers in leveraging the potential of spirituality to enhance mental health services and improve quality of life in clinical settings.

## Discussion

The results of the present study indicate a significant research growth in the field of spiritual health in recent decades. Since 2000, attention to this field has increased significantly and reached its peak in 2024. This growth reflects the attention of researchers to this scientific field and the importance of spiritual health in health and medical systems worldwide. In this regard, recent bibliometric analyses indicate that the publication of scientific articles in the field of spiritual health has steadily increased, especially in the Middle East and Iran, which has accounted for a significant portion of these scientific publications.<sup>13</sup>

From a geographical perspective, the study findings indicate that Iran, the USA, and the UK are the leading countries in publishing scientific articles in this field. Iran's high share in this field, with 195 scientific documents indexed in relevant databases, reflects the special attention of researchers and academic institutions in this country to the topic of spiritual health. In comparison, the USA and UK had 136 and 36 publications, respectively.

Some Iranian institutions, such as Shahid Beheshti University of Medical Sciences (27 publications),

Shiraz University of Medical Sciences (22 publications), and Baqiyatollah University of Medical Sciences (22 publications), as top scientific institutions in this field, have played an important role in the development of spiritual health knowledge. This issue may be due to cultural, religious, and health policy factors in Iran that have affected the development of this field. This prominence may stem from Iran's cultural and religious values, which emphasize the integration of spirituality within the health care system as part of a holistic approach to well-being. Furthermore, national health policies in Iran may support the inclusion of spiritual dimensions in medical and psychological care, reinforcing this research trend.<sup>20,21</sup>

Findings resulting from scientific collaboration between countries in the scientific publications related to spiritual health indicate the formation of a coherent scientific cluster among Islamic countries with the centrality of Iran, which indicates cultural commonalities and aligned approaches in the research in the field of spiritual health. In addition, analysis of the structure of institutional collaboration demonstrates that Shahid Beheshti University of Medical Sciences, along with several other Iranian medical universities, has formed the central axis of knowledge production in the field of spiritual health. In this regard, a bibliometric and scientometric analysis of articles published between 1975 and 2016 in the "Religion and Health" journal has also revealed that the United States, Australia, and Canada had the highest publication rates.<sup>15</sup> Furthermore, Yaminfirooz et al. (2024) reported that, in respective order, the United States and the United Kingdom were the top countries, and the University of Toronto (Canada) and Harvard Medical School (United States) were the top scientific institutions that published the most articles in this field.<sup>16</sup>

The findings from the word co-occurrence analysis have indicated that spiritual health is a multidimensional and interdisciplinary concept linked to various fields, such as religion, psychology, mental health, nursing care, and socio-cultural contexts. In this regard, three main topical clusters have been identified for scientific publications in the field of mental health. One of the clusters, which was the most central cluster that had the highest degree of co-occurrence, focused on the conceptual and belief foundations of spiritual health; the second cluster highlighted the scientific and clinical aspects of spiritual health; and the third cluster

highlighted the role of spiritual health in dealing with psychological disorders. Moreover, other small sub-clusters indicate the complexity and breadth of spiritual health in different dimensions of human life. Overall, the analysis of these data indicates that spiritual health is not only a religious or personal concept but has been recognized in scientific research as a vital part of human health. The literature has also highlighted the importance of mental health in various dimensions. In this regard, Coppola et al. (2021) emphasized the importance of spirituality during the COVID-19 pandemic and reported that spirituality and religious practices were a protective factor related not only to mental and psychological health but also to physical health.<sup>22</sup> In addition, Leung et al. (2021) reported that there was an inverse and significant relationship between spiritual well-being and reduced psychological distress in students so that the personal-social dimension of spiritual health had the most significant protective effect on mental health.<sup>23</sup> In this regard, Yaminfirooz et al. (2024) indicated that scientific publications on spirituality, religion, and health have focused on three topical clusters related to different dimensions of spiritual health, including mystical and religious, medical, and spiritual aspects.<sup>16</sup> Moreover, Saberi et al. (2021) revealed that a prolific subject area of scientific publications in the field of spiritual health in the Middle East and Iran has been medicine and nursing, as well as humanities and arts.<sup>13</sup>

The evolution of spiritual health as a subject has shifted from general and theoretical studies to more specialized and applied research. While in the early decades, spiritual health was studied as a general concept; in recent years, spiritual health has also been studied in various fields, including public health, nursing, end-of-life care, support for patients with chronic diseases, and its role in improving quality of life. This shift reflects an increased attention to the connection of spiritual health with care and treatment policies in health systems.

The findings of this study indicate that spiritual health is emerging as a significant scientific field within health sciences. It has experienced substantial growth in recent years and has garnered considerable interest from researchers, particularly in Islamic countries and Iranian academic institutions. By utilizing conceptual, clinical, and psychological approaches, this field has solidified its role as a fundamental component of

human health. An examination of the network of scientific collaborations and word co-occurrences also demonstrates that spiritual health is not simply a personal or religious dimension but a multidimensional and applied scientific field closely linked to mental health, quality of life, and medical care.

Despite the valuable insights provided by this bibliometric analysis, the study has several limitations that should be considered. First, the analysis relied solely on data extracted from the Scopus database, which, although comprehensive, may not capture all relevant publications, especially those indexed in regional databases or local journals not covered by Scopus. Second, language bias may have affected the findings, as the majority of indexed articles are in English, potentially underrepresenting non-English contributions to the field of spiritual health. Third, the study included publications up to early 2025, and therefore, more recent research trends might not be fully captured.

## Conclusion

In conclusion, this study highlights the growing global attention to spiritual health, particularly in Islamic and Middle Eastern contexts, and underscores its emerging role as a multidimensional component of health sciences. Strengthening international collaborations, addressing research gaps, and integrating diverse perspectives will be key to advancing the field and maximizing its contributions to holistic health and well-being.

Accordingly, it is suggested that research and health policymakers provide the necessary platforms to strengthen international and interdisciplinary collaborations. Furthermore, establishing sustainable research networks among Islamic countries and effective interaction with Western scientific centers can significantly contribute to strengthening knowledge exchange and increasing the effectiveness of spiritual health interventions in global health systems.

## Conflict of Interest

The authors declare no conflicts of interest.

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