

Bibliometric examination of health tourism in the context of hygiene

Sağlık turizminin hijyen bağlamında bibliyometrik incelemesi

Nebi SEREN¹ (ID)

ABSTRACT

Objective: In recent years, health tourism has been increasing its importance in terms of both the development of national economies and improving the quality of health systems. Health tourism is summarized as the visit of people who demand treatment to different regions in order to access high-cost treatments outside the region where they live, often at lower prices. Health tourism is included in the literature not only in terms of access to lower-priced services, but also as a form of tourism that occurs when individuals who demand the service want to access quality services. This study aims to evaluate the publications on health tourism, which consumers apply in line with their needs, from different perspectives, to reveal the diffusion and relationships of existing studies and to examine the hygiene effect.

Methods: The data used in this study were obtained from studies published only in the English language by filtering the studies in "Scopus" and "WoS" (Web of Science) databases between 2020-2024. In the retrieval of the data, restrictions were made as "health tourism" in titles, abstracts and keywords and "hygiene" in all

ÖZET

Amaç: Sağlık turizmi son yıllarda hem ülke ekonomilerinin gelişimi hem de sağlık sistemlerindeki kaliteyi ileri seviyeye taşıma başlıklarında önemini artırmaktadır. Sağlık turizmi tedaviyi talep eden kişilerin yüksek maliyetli tedavilere, yaşadıkları bölge dışında, çoğunlukla daha düşük fiyatlarla ulaşabilmeleri için farklı bölgeleri ziyaret etmeleri olarak özetlenmektedir. Sağlık turizmi sadece daha düşük fiyatlı hizmete ulaşabilme noktasında değil, aynı zamanda hizmeti talep eden bireylerin kaliteli hizmete ulaşmak istediklerinde ortaya çıkan turizm şekli olarak da literatürde yer almaktadır. Bu çalışma, tüketicilerin ihtiyaçları doğrultusunda başvurdukları sağlık turizmi hakkında yapılan yayınları farklı açılardan değerlendirerek mevcut çalışmaların yayılım ve ilişkilerini ortaya koymak ve hijyen etkisini incelemeyi amaçlamaktadır.

Yöntem: Bu çalışmada kullanılan veriler, 2020-2024 yılları arasında "Scopus" ve "WoS" (Web of Science) veri tabanlarında yapılan çalışmalar süzülerek, sadece İngilizce dilinde yayınlanan çalışmalardan elde edilmiştir. Verilerin alınmasında, başlık, özet ve anahtar

¹Bursa Uludağ University, Orhangazi Yeniköy Asil Celik Vocational School, Department Of Computer Technologies, Bursa, Türkiye



İletişim / Corresponding Author : Nebi SEREN

Bursa Uludağ Üni., Orhangazi Yeniköy Asil Çelik MYO, Bil.Tek. Böl., Orhangazi / Bursa - Türkiye

E-posta / E-mail : nebiseren@uludag.edu.tr

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fields. In the bibliometric analysis part, co-author analysis, keywords analysis, country citation analysis, author citation analysis, source citation analysis, and bibliographic matching analysis were performed, respectively, using the Vosviewer program. The geographical distribution of studies on health tourism was visualized using the R program and Biblioshiny plugin.

Results: As a result of the review, it was determined that the studies searched in the WoS database consisted of 3512 research articles, 338 reviews, 217 early access publications, and 179 conference proceedings, while the publications in the Scopus database were 303 research articles, 55 reviews, 60 book chapters, and 24 conference proceedings. It has been observed that the number of studies conducted in the last five years has increased significantly, especially after the Covid-19 pandemic. In addition, the interconnections of studies on health tourism were evaluated from different perspectives. The countries, authors, and relationship tables that publish the most on the subject were revealed.

Conclusion: It has been observed that studies on health tourism continue to increase every year. It has been determined that the research on health tourism is unevenly distributed on the basis of countries and that the leading countries in this field constitute a significant part of the total studies. The importance of hygiene concept in health tourism has been shown with the help of analysis results, tables and graphs.

Key Words: Public health, health tourism, tourism, hygiene, bibliometric analysis

kelimelerde “sağlık turizmi” ve tüm alanlarda “hijyen” şeklinde kısıtlama yapılmıştır. Bibliyometrik analiz kısmında, Vosviewer programı kullanılarak sırasıyla ortak yazar analizi, anahtar kelimeler analizi, ülke atıf analizi, yazar atıf analizi, kaynak atıf analizi ve bibliyografik eşleştirme analizi yapılmıştır. Sağlık turizmi üzerine yapılan çalışmaların coğrafik dağılımı, R programı ve Biblioshiny eklentisi kullanılarak görselleştirilmiştir.

Bulgular: İnceleme sonucunda WoS veri tabanında taranan çalışmaların 3512 araştırma makalesi, 338 derleme, 217 erken erişim yayını ve 179 konferans bildirisi şeklinde oluştuğu tespit edilmiştir, Scopus veri tabanındaki yayınların ise 303 araştırma makalesi, 55 derleme, 60 kitap bölümü ve 24 konferans bildirisi şeklinde sıralandığı belirlenmiştir. Son beş yıl içinde yapılan çalışmaların sayısının özellikle Covid-19 pandemisinin ardından önemli ölçüde arttığı gözlemlenmiştir. Ayrıca, sağlık turizmi hakkında yapılan çalışmaların birbirleriyle olan bağlantıları farklı perspektiflerden değerlendirilmiştir. Konuyla ilgili en çok yayın yapan ülkeler, yazarlar ve ilişki tabloları ortaya çıkarılmıştır.

Sonuç: Sağlık turizmi üzerine yapılan çalışmaların her yıl artarak devam ettiği gözlemlenmiştir. Sağlık turizmi üzerine yapılan araştırmaların ülkeler bazında dengesiz dağıldığı ve bu alanda öncü ülkelerin toplam çalışmaların önemli bir bölümünü oluşturduğu tespit edilmiştir. Sağlık turizminde hijyen kavramının önemi, analiz sonuçları, tablolar ve elde edilen grafikler yardımıyla gösterilmiştir.

Anahtar Kelimeler: Halk sağlığı, sağlık turizmi, turizm, hijyen, bibliyometrik analiz

INTRODUCTION

One of the primary drivers of medical tourism is the disparity in healthcare costs between countries. Patients from developed nations often seek medical services in countries where healthcare is significantly

cheaper, without compromising on quality. This trend has been observed in various studies, which have indicated that countries positioning themselves as medical tourism destinations have economically benefited. For example, India, Thailand, and Malaysia have emerged as leaders in this sector, attracting

millions of international patients annually, thereby stimulating local economies through job creation and infrastructure development (1,2). The global medical tourism market is projected to reach approximately \$207.9 billion by 2027, underscoring the financial potential of this industry (1).

Furthermore, the integration of the health and tourism sectors has been highlighted as a critical area for both research and policy development. The literature suggests that a comprehensive understanding of medical tourism requires an analysis of its economic, social, and cultural dimensions (3,4). For instance, the establishment of international quality standards and the harmonization of legal frameworks have been deemed essential for ensuring patient safety and enhancing the attractiveness of medical tourism destinations (5).

These cost dynamics affect healthcare systems in both source and destination countries. While many studies emphasize developments positively, some studies highlight the negative aspects of health tourism, particularly within the context of cost savings. Concerns were voiced by Vijaya (6) on the transfer of health problems from developed to developing nations while taking advantage of lower cost at abroad. This suggests that ethical concerns and conflicts with healthcare system sustainability also deserve attention beyond the economic motivations behind health tourism. One of the most significant adverse impacts of health tourism on host countries' healthcare systems is the diversion of resources away from local populations to foreign patients. Johnston et al. (2012) pointed out that the increasing demand from medical tourists can make local healthcare services and specialists less accessible to local citizens(7). Another study highlighted how health tourism in host countries could increase healthcare costs, exacerbate existing health inequalities, and make healthcare access more challenging for lower-income groups (8). Additionally, health tourism may prompt local healthcare workers to migrate to urban centers, worsening healthcare provision in rural areas.

A study emphasized that such migration of specialists could negatively impact healthcare delivery in rural regions and intensify health disparities in those areas (9). This study also noted that health tourism often leads healthcare professionals to seek better wages in significant cities, weakening local healthcare systems (10). Another negative consequence of health tourism is its pressure on public healthcare systems. Beladi et al. (2017) argued that health tourism can erode public healthcare resources, making it harder for the local population to access healthcare (11). Another study stressed that this can threaten the sustainability of healthcare systems and create significant barriers for local populations seeking medical care (12).

The evolution of internet technologies has also played a pivotal role in shaping the landscape of medical tourism, altering how patients seek treatment abroad. Various studies have highlighted how online platforms facilitate health tourism. One of the critical aspects of this transformation is the increasing reliance of patients on the internet for information and decision-making regarding medical tourism. Behmane et al. (2021) emphasized that potential medical tourists use healthcare providers' websites to communicate and make informed decisions about the destinations they will travel to for treatment (13).

MATERIAL and METHOD

The study was conducted using a data set compiled from academic publications indexed in the Web of Science (WoS) and Scopus databases, based on data from the last five years (2020-2024) at Bursa Uludağ University. The study aimed to observe the progress of studies in the field of health tourism and to contribute to future studies in this field with the data sets created by revealing the relationships between these studies. The abundance of studies on the importance of health tourism for national economies and health enterprises revealed the necessity of this study due to its potential to contribute to the study of this subject

in the field of social sciences. In the literature, the economic returns of health tourism were examined in different scopes, and the studies conducted in terms of financial returns, improvements to the health system, and negative phenomena that it may bring showed the contribution that examining this issue in detail and through current data would make to the literature.

Data were collected on October 10, 2024, by searching the keywords “health and tourism” in the title, abstract, and keyword fields, and “hygiene” in all fields, across both Scopus and WoS databases. This data set, obtained under the specified restrictions, forms the basis of the study. The data were then subjected to bibliometric analysis using Vosviewer software to create relationship maps. The maps were created for the following analyses: co-author analysis, keyword analysis, country citation analysis, author citation analysis, source citation analysis and bibliometric link analysis. A collective analysis section was created for each map, providing relevant comments and interpretations. The following sections present bibliographic studies based on this data set. Furthermore, the R program, Rstudio program and biblioshiny plugin were used to create the map of the countries that produced the most publications and the table of the most cited publications. The data sets obtained from the Scopus and WoS databases were combined with the help of short codes in the Rstudio plugin. The received data sets were in bibtex format and were first merged (for WoS) and then added to each other in R studio.

RESULTS

The data used in the study were obtained from Scopus and WoS databases by searching for “health tourism” in the title, abstract, and keywords section and “hygiene” in all fields section, and it was seen that there were a total of 9,394 results in both databases. However, since only the last five years were limited in the study, this number was obtained as 4605 in

total. The distribution of these results according to publication types revealed 3820 research articles, 394 review articles, nine books, 95 book chapters, 203 conference proceedings, and 51 editorials. The studies were covered a variety of disciplines, and the majority fell into the categories of Medicine (356), Social Sciences (218), Environmental Science (892), Business, Management, and Accounting (595), and Agriculture and Biological Sciences (80). This dataset, obtained under the specified restrictions, was used as the basis of the study. These data were subsequently subjected to bibliometric analysis using the Vosviewer software to generate relationship maps. The maps were created for co-author analysis, keyword analysis, country citation analysis, author citation analysis, source citation analysis, and bibliometric coupling analysis. For each map presented in the result section of this study, comments were made in the discussion section.

When the resulting co-authorship analysis was examined, it was seen that a map consisting of 4 clusters created by a total of 45 authors emerged. A total of 405 connections were established between these authors, with a connection strength of 435, as indicated by VOSviewer. The most productive authors, ranked by the number of publications, were identified as Han and Heesup with 23 publications, Wen and Jun with 19 publications, and Hall and J. Michael with 14 publications. Among them, no one determined to be among the most connected authors in the network. In terms of citations, the top three authors were found to be Hall and J. Michael with 2687 citations, Shin and Hakseung with 526 citations, and Wen and Jun with 442 citations.

An examination of the keywords associated with the search query ‘health,’ ‘tourism,’ and ‘hygiene’ revealed that the term ‘hygiene’ was notably prevalent, particularly in studies conducted during the COVID-19 pandemic. The five most commonly used keywords in the studies were ‘Hygiene’ 512 times, ‘Tourism’ 351 times, ‘Medical Tourism’ 116 times, ‘Pandemic’ 115 times, and ‘Well-being’ 83 times. Regarding total link strength, the strongest keywords

identified in this analysis were COVID-19, tourism, and pandemic. The analysis, which was conducted on

a sample of 454 items, revealed the presence of 16 clusters, 3806 links, and a total link strength of 5357.

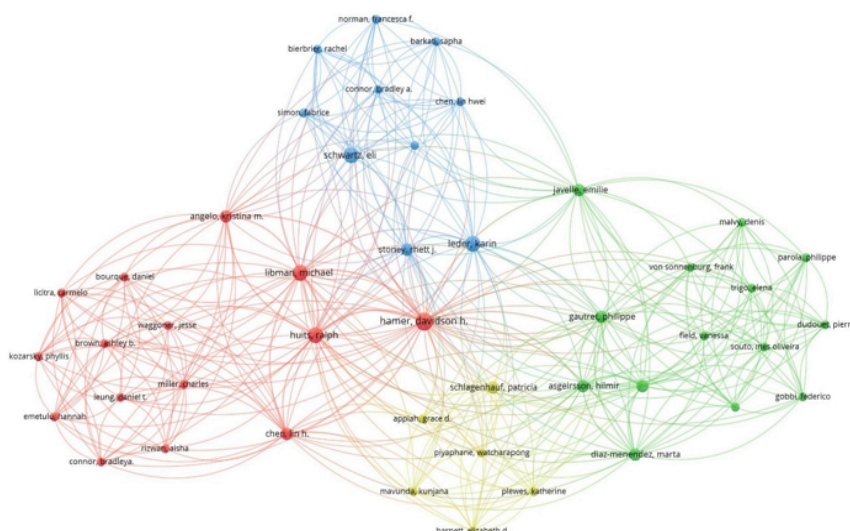


Figure 1. Co-authorship analysis for health, tourism, and hygiene

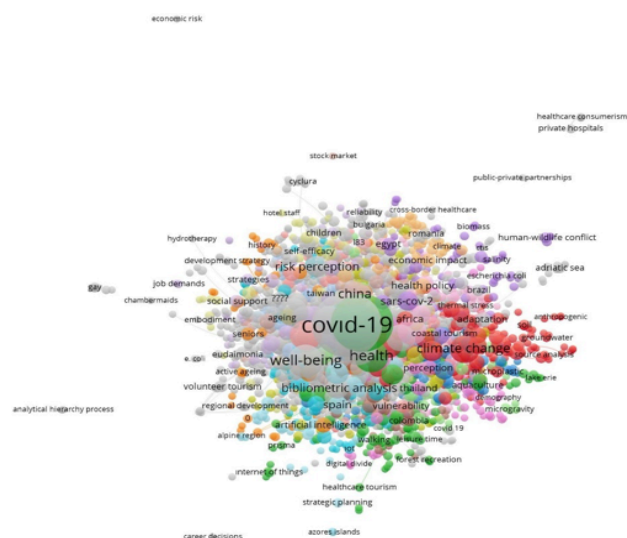


Figure 2. Keyword analysis for health, tourism and hygiene

To identify the countries that dominate the field of health, tourism and hygiene, a network map was created based on the countries with at least one publication related to the topic and at least one citation. The analysis included 106 connected countries forming 16 clusters, with

a total of 1217 links and a total link strength of 4959. The countries with the most citations were identified as the Peoples Republic of China with 9396 citations, the United States of America with 7622 citations, and England with 7554 citations.

In terms of total publications, the Peoples Republic of China and the United States of America were found to maintain their lead, producing 630 and 539 publications, respectively. With 319 publications, Spain was ranked third in total publications but was not cited as highly as England, indicating a shift in influence when comparing publication volume to citation impact.

Figure 4 shows the map where countries are separated according to the scientific studies conducted on the subject. The countries in dark colors on the map are the countries that produce the most scientific publications, while the countries that produce the least publications are indicated in light colors. The numbers can be observed in the country citation analysis section.

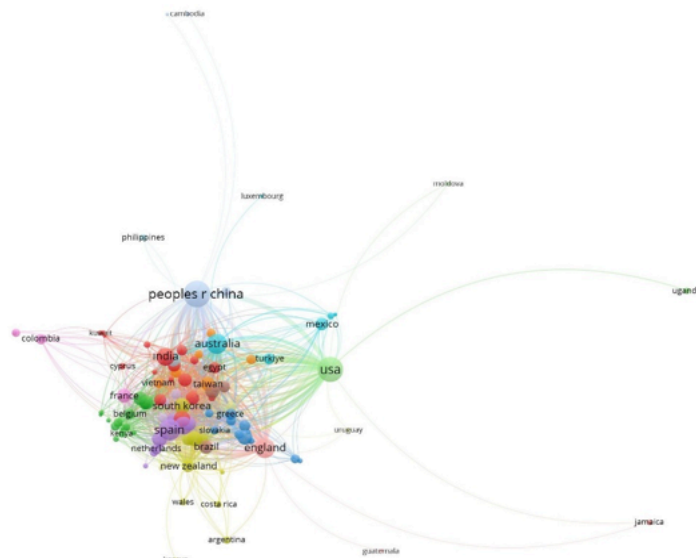


Figure 3. Country citation analysis for health, tourism, and hygiene

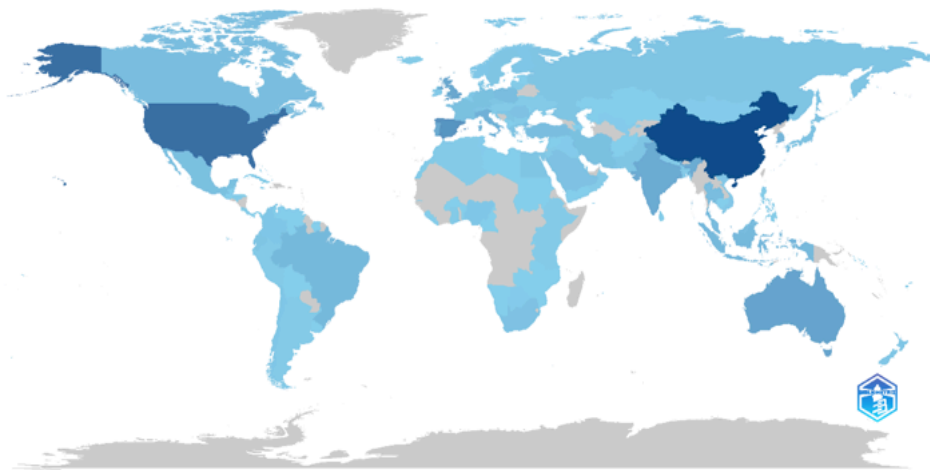


Figure 4. Countries' scientific production

To obtain relevant results, the dataset from Scopus and WoS was filtered to include only authors with at least one publication that had received at least one citation. In the resulting map, 779 authors were grouped into 21 clusters, showcasing 6584 connections with a strength of 7449. Among these works, the three most productive authors were identified as Han and Heesup, with 23 publications, and Wen and Jun, with 19 publications, respectively.

A dataset was created by using specific filters to

identify the cited sources. The citation analysis was conducted by including publications with at least one publication and receiving at least one citation. When the network map was generated for this citation analysis, 300 sources were identified, revealing 49 clusters, 826 connections, and a total link strength of 1284. The most cited source was found to be the Sustainability, followed by International Journal of Environmental Research and Public Health in second place, and the Current Issues in Tourism in third place.

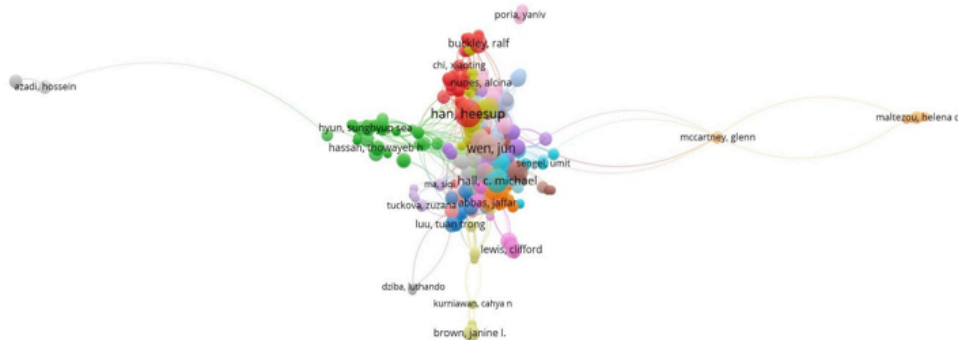


Figure 5. Author citation analysis for health tourism and hygiene

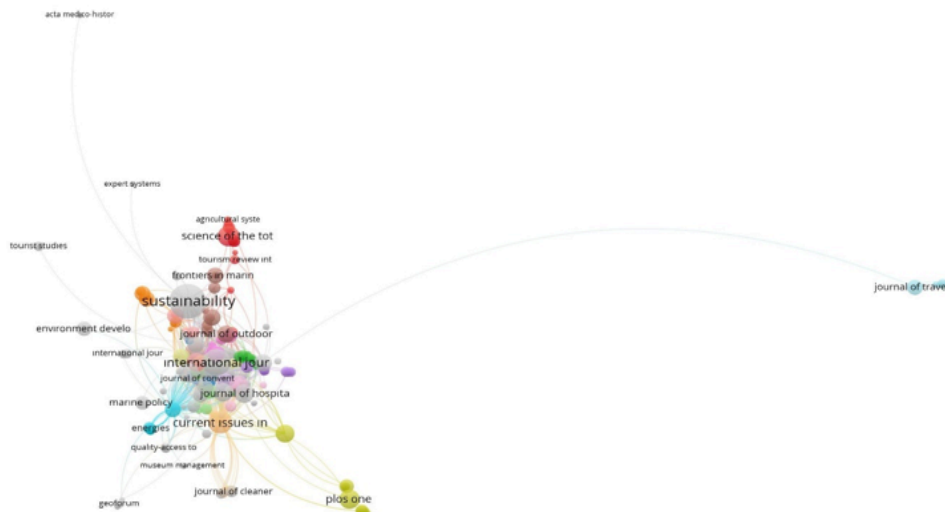


Figure 6. Source citation analysis for health, tourism and hygiene

Bibliometric coupling analysis, which included 1000 documents with hidden connections, revealed the following results: 6 clusters, 116123 connections, and a total connection strength of 202937. At

the end of the analysis, the publications with the highest bibliographic matches were identified as Gossling (2021) with 1841 citations, Hall (2020) with 619 citations, and Bae (2021) with 418 citations.

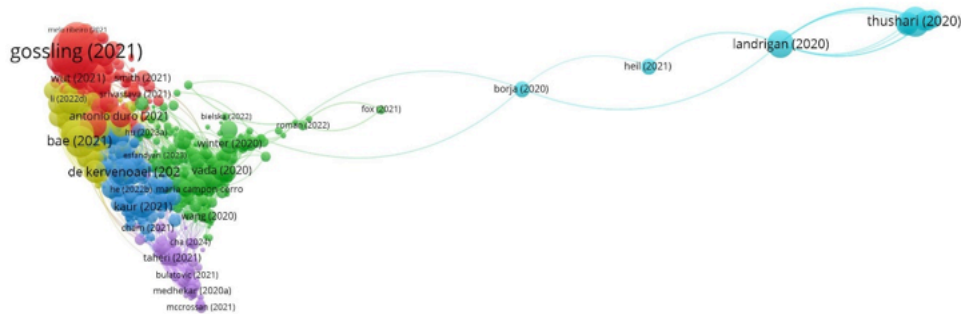


Figure 7. Bibliographic coupling analysis for health, tourism and hygiene

DISCUSSION

When examining the impact of hygiene standards on selection of travel destinations, several studies indicate that hygiene plays a significant role. Appollo et al. emphasized that hygiene standards should be improved, particularly in developing countries, to reduce public health risks for locals and tourists (14). This perspective is supported by Rasethuntsa, who notes that disease risks can significantly affect the tourism sector, and inadequate hygiene practices may negatively impact health tourism (15). The importance of hygiene and cleanliness in the tourism sector has been examined in many studies in different areas. Dikmen and Irmak (2016) examined the effects of bathing water quality on public health in their study. Evidence was presented that poor water quality is associated with various health outcomes, especially gastrointestinal diseases and skin infections (16). The COVID-19 pandemic has further highlighted this relationship. Zhong's study indicated that the pandemic necessitated enhanced

hygienic management and contactless services in the hospitality industry (17). This shift demonstrates that travelers now prioritize health and hygiene practices, which strongly influence their destination choices and overall travel experiences. Moreover, implementing effective hygiene protocols is critical for ensuring public safety in tourism environments. Musfirah et al. (2022) discussed the vital importance of hand hygiene among employees, especially in areas where the risk of disease transmission is high (18). Similarly, Niyonzima et al. stated that the availability of clean water and hand hygiene protocols are crucial enablers for healthcare workers. This condition can also apply to tourism (19). The necessity for compliance with hygiene protocols is further supported by Tyagi et al. (2018), whose findings emphasize that knowledge and education regarding hand hygiene are essential for adherence in healthcare settings (20).

When the results obtained in this study are examined in terms of demonstrating commitment to hygiene and health tourism, outputs of this work were found to highlight the central role of disease

prevention and hygiene practices in health tourism, especially during global health crises like the COVID-19 pandemic. Keywords related to Epidemiology, one of the higher-ranking words, further emphasized the inherent connection between hygiene and disease management in health tourism. This demonstrates that a strong focus on hygiene is essential to ensure patient safety and improve health tourism settings' overall quality of care. Although the word epidemiology remained at the bottom of the list in this study, it was observed that this word rose to higher rankings when the scope of the study was expanded, not limited to the last five years (Figure 2). The importance of the keyword "epidemiology" which is related to the study of disease outbreaks, was particularly striking. Significantly, many of the most frequently used terms were related to diseases. This trend emphasized the critical importance of hygiene in preventing disease outbreaks in the field of health tourism. In previous years, we see that the word malaria is used instead of the word pandemic. This reveals the changing sensitivities after the Covid-19 outbreak (Figure 2). When the results are examined by country, it is seen that Spain has a significant publication output, while the People's Republic of China and the United States have a significant publication output in terms of both citations and publication volume. However, Spain is found to have a lower citation impact than the other two countries (Figure 3). Author citation analyse results indicated that many works had been produced by these authors, and they were considered to occupy prominent positions on the map of influential contributions to health tourism hygiene. Their presence in publication volume and citation metrics was found to underscore their substantial impact on the discipline, and their role was highlighted as critical contributors to advancing knowledge in this area (Figure 5). Source citation analyse was found to highlight the interconnected nature of research in health tourism hygiene, suggesting that these works were collectively contributing to the evolution of knowledge within the field (Figure 6). Bibliographic

coupling was shown to indicate that independent studies containing shared bibliographies were interconnected through a hidden relationship. In other words, two seemingly independent studies were found to be linked if they shared the same bibliographic structure. Studies that had not received citations were excluded from the dataset in this analysis (Figure 7).

The evolving nature of health tourism necessitates a focus on cleanliness, health, and safety (CHSE) protocols. Implementing CHSE guidelines is crucial for the post-pandemic recovery of the tourism sector, as highlighted by Negara and Suandari in their study on rafting tourism, where they emphasized the importance of these protocols (21). The focus on CHSE is also evident in the work of Fachryandini et al. (2022), who noted that compliance with new health protocols was necessary to ensure the safety of tourism activities (22). When the countries that are suitable for CSHE certification and are deemed worthy of receiving a green stamp by the World Travel and Tourism Council are examined, it is seen that they coincide with the countries that produce the most publications in the context of health tourism and hygiene as a result of this study (Figure 2).

When health tourism studies are examined in the context of hygiene, the names of the top 10 most cited studies conducted in this field in the last five years, their DOI numbers, the total number of citations they have received, and the total number of citations they have received per year are shown (Table 1).

One of the most up-to-date ways to gain a competitive advantage in marketing is through the analysis of product feedback within specific criteria. Bilici (2024) stated in their study that businesses' feedback was analyzed to determine areas where products could be improved to gain a competitive advantage (23). If more successful outcomes in health tourism are desired, it is essential that marketing strategies, particularly those focusing on hygiene perception, be reviewed. Patient satisfaction can be enhanced through efforts in this area, establishing a solid foundation for successful marketing.

Table 1. Most cited sources in hygiene search in health tourism

Paper	DOI	TC	TC Per Year
Abbass K, 2022, Environ Sci Pollut Res	10.1007/S11356-022-19718-6	513	171,00
Bashir Mf, 2020, Air Qual Atmos Health	10.1007/S11869-020-00894-8	458	91,60
Bae Sy, 2021, Curr Issues Tour	10.1080/13683500.2020.1798895	418	104,50
Neuburger L, 2021, Curr Issues Tour	10.1080/13683500.2020.1803807	397	99,25
Gobler Cj, 2020, Harmful Algae	10.1016/J.Hal.2019.101731	319	63,80
Zeng Z, 2020, Tour Geogr	10.1080/14616688.2020.1762118	316	63,20
De Kervenoael R, 2020, Tourism Manag.	10.1016/J.Tourman.2019.104042	296	59,20
Kim Ss, 2021, Int J Hosp Manag.	10.1016/J.Ijhm.2020.102795	291	72,75
Kaushal V, 2021, Int J Hosp Manag.	10.1016/J.Ijhm.2020.102707	290	72,50
Shin H, 2020, Int J Hosp Manag.	10.1016/J.Ijhm.2020.102664	286	57,20

TC: Total Cites

This study could be further enhanced by examining the strategies employed by countries that have achieved success in health tourism, and by conducting a comparative analysis with countries that have relatively limited activity in

this field. Such an approach would provide valuable insights into health tourism marketing and help to evaluate the influence of hygiene-related factors on marketing effectiveness within this sector.

ETHICS COMMITTEE APPROVAL

* This study does not require Ethics Committee Approval.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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