Middle Black Sea Journal of Health Science / Mid Blac Sea J Health Sci **August 2022; 8(3): 403-410**

RESEARCH ARTICLE **DOI:** 10.19127/mbsjohs.1094658

A Bibliometric Analysis of Publications on Scabies

Mustafa Tosun[1](ID)

[1]Dermatology Department, Medicine Faculty, Sivas Cumhuriyet University, Sivas, Turkey

Received: 28 March 2022, Accepted: 03 July 2022, Published online: 31 August 2022

Abstract

Objective: Scabies is an ectoparasites caused by "*Sarcoptes scabiei* (*S. scabiei*) var. hominis" and can affect everyone regardless of gender, age and race. Scabies is caused by infestation with the ectoparasite *S. scabiei* var hominis and its incidence has increased in recent years. Bibliometric analysis uses a statistical method of academic literature in a certain research area. This study aimed to perform the bibliometric analysis of literature with scabies.

Methods: All data of this study were included from the provided by Web of Science databases. It was used the keyword “scabies” for our study. All studies published between 1970 and December 2021 were included.

Results: A total of 1924 publications were found. The most published fields were dermatology, general medicine, and infectious disease (31.20%, 10.92%, and 9.83%, respectively). The peak year of urticaria literature was 2019, with 5.85%. The United States was the most productive country, with 334 publications. Australia ranks second with 172 publications following the United States, while France takes third with 132 publications.

Conclusion: This study analyzed the publications with scabies bibliometric analyses. It was determined that the most frequently discussed subjects were *S. scabiei* and treatment of scabies. This study can help the scientific community and policymakers to collaborate and discover possible treatments for scabies and prevent its spread.

Key words: Scabies, Bibliometrics, Publication Trends

Suggested Citation: Tosun M. A Bibliometric Analysis of Publications on Scabies. Mid Blac Sea Journal of Health Sci, 2022;8(3):403-410

Address for correspondence/reprints:

Mustafa Tosun

Telephone number: +90 (544) 607 29 16

E-mail: doktor699@hotmail.com

INTRODUCTION

Scabies is an ectoparasites caused by "*S. scabiei* var. hominis" and can affect everyone regardless of gender, age and race. Transmission from person to person occurs either directly through sexual intercourse, communal life, close touch, or indirectly through the personal belongings of patients with scabies. The female mite, which is less than 0.5 mm in size, enters the skin and the antigenic structure on the exoskeleton produces a hypersensitivity reaction together with the saliva, secretions, and eggs of the mite (1, 2). The most common symptom of the disease is itching. Itching wakes the person up at night and increases in a warm environment. The presence of other itchy individuals in the family is another important finding supporting the diagnosis of scabies (3).

Scabies is classified as a neglected tropical disease by the World Health Organization (WHO) with estimated 455 million annual incidences (4). In recent years, the incidence of scabies has risen significantly in Turkey, as in other countries. The reasons behind this are the difficulties in making the correct diagnosis and the resistance to treatment. Many physicians, particularly dermatologists and family physicians, frequently encounter this disease in their daily practice and experience difficulties in diagnosis and treatment from time to time. If it is not treated, itbecomes a public health issue as it spreads quickly, especially in communal living conditions. Among the drugs used in the treatment are permethrin, phenothrin, sulfur, benzyl benzoate, crotamiton, ivermectin, malathion from topical agents, and oral ivermectin from systemic agents (5-7).

Bibliometrics is the quantitative analysis of scientific literature that helps assess the cross-sectional and longitudinal academic productivity of countries, institutions, journals, or authors (8, 9). Moreover, bibliometric analysis allows estimating the past scientific impacts, resources, and competitiveness of countries and/or continents (10).

Many fields in dermatology like psoriasis have extensively been explored through bibliometric analysis (11). Nevertheless, to the best of our knowledge, a limited number of bibliometric studies have investigated scabies in the literature. By analyzing keywords, topics, countries, and other characteristics, this study used bibliometric analysis and visual presentation instruments to examine the knowledge base and future directions related to scabies research. This study aimed to examine scabies literature utilizing the Thomson Reuters Web of Science (WoS) database. This examination could reveal current patterns and trends of scabies literature and pave the path for new and more scabies publications.

METHODS

This study did not involve data collection or intervention in clinical trials. Thus, it did not need approval from an ethical committee.

The study was done using bibliometric networks by VOSviewer software (Vosviewer, 2020). The publication period was restricted from 1970 to December 2021 for 51 years. In the WoS database, the study was done under the heading "topic" for the Social Science Citation Index studies. Accordingly, studies published in the Journals of the Social Science Citation Index (SSCI) in the WoS databases have been examined. A total of 1924 publications were reached using the keyword "scabies." The final version has been printed, and the English-language publications have been received. A total of 1924

documents were retrieved by selecting the "article" option (congress papers, excluding books, book chapters, etc.) for predetermined keywords. Study results are stored to include all basic article information such as keywords, author(s), references, title, abstract, and more.

RESULTS

A total of 1924 publications were retrieved from the WoS database. The period of the publication was restricted from 1970 to December 2021 with the following strategy: TS = 'scabies'.

Studies on scabies published in the WoS database journals and scanned in the SSCI index have been examined. First, the distribution of these publications by year is shown in Figure 1.

According to Figure 1, as of December 20, 2021, when the research data were obtained, the highest number of studies on the Scabies title was conducted in 2019. Following 2019, in which 5.85% of the total studies were carried out, 2021saw the second-highest number of studies. In 2021, when this research was conducted, 4.87% of the total number of studies was published in journals scanned in the Science Citation Index (SCI).

Then, the categories of the studies containing the title Scabies and included in the bibliometric analysis were determined. Figure 2 demonstrates the categories of publications in journals scanned in SCI.

According to Figure 2, the Dermatology category, which makes up 31.20% of the total publications, ranks first. Following this category, General Internal Medicine is in second place with 10.92%, and Infectious Diseases is in third place with 9.83%. Although they do not have rates as high as the top three categories, Community Health, Tropical Medicine, Pediatrics, Parasitology, Veterinary Medicine, Microbiology, and Immunology respectively pursue them.

After the categories were determined, the bibliometric analysis process was started. In this process, firstly, the distribution of studies titled Scabies published between 1970 and 2021 according to countries was examined with the VOSviewer program. Figure 3 shows the results of this review.

As seen in Figure 3, the USA has the most publications on scabies, with 334 studies. Australia comes in second with 172 studies, followed by France with 132 studies. Pursuing the first three countries, England ranked fourth with 118 studies, while Germany ranked fifth with 89 studies. On the other hand, Turkey is in the mid-rank with 23 studies.

Keywords used in 1,924 studies titled Scabies published between 1970 and 2021 in journals scanned in SCI were determined. Figure 4 depicts the obtained map.

According to Figure 4, the phrase "scabies" ranks first with its use in 246 different studies. The term "*S. scabiei*" is in second place with 50 studies, while "ivermectin" is in third place with 48 studies.

In the journals scanned in SCI, the most frequently used keywords were determined in the 100 most cited studies out of 1,924 titled Scabies published between 1970 and 2021. Figure 5 illustrates the obtained map.

According to Figure 5, the first two most frequently used keywords are "scabies" with 15 usages and "ivermectin" with 4 usages, respectively. The terms "*S. scabiei*" and "permethrin" are ranked third with 3 usages each.

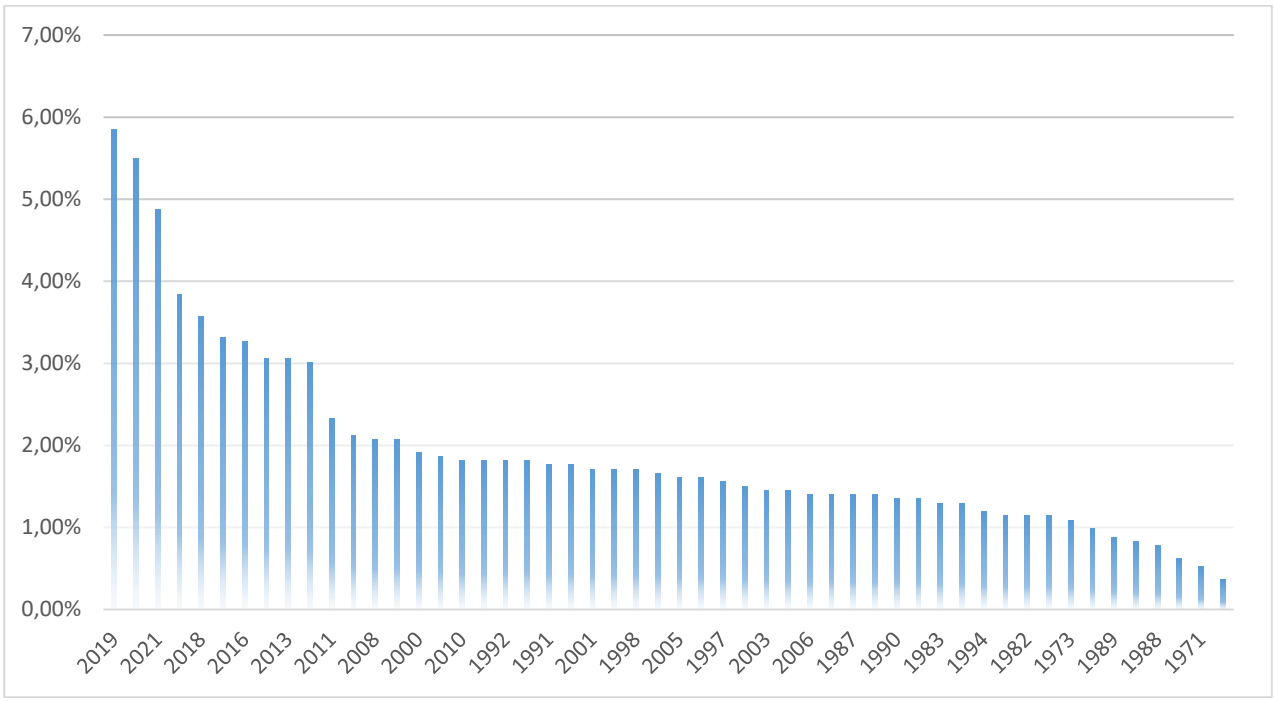

Figure 1. Distribution of publications by year

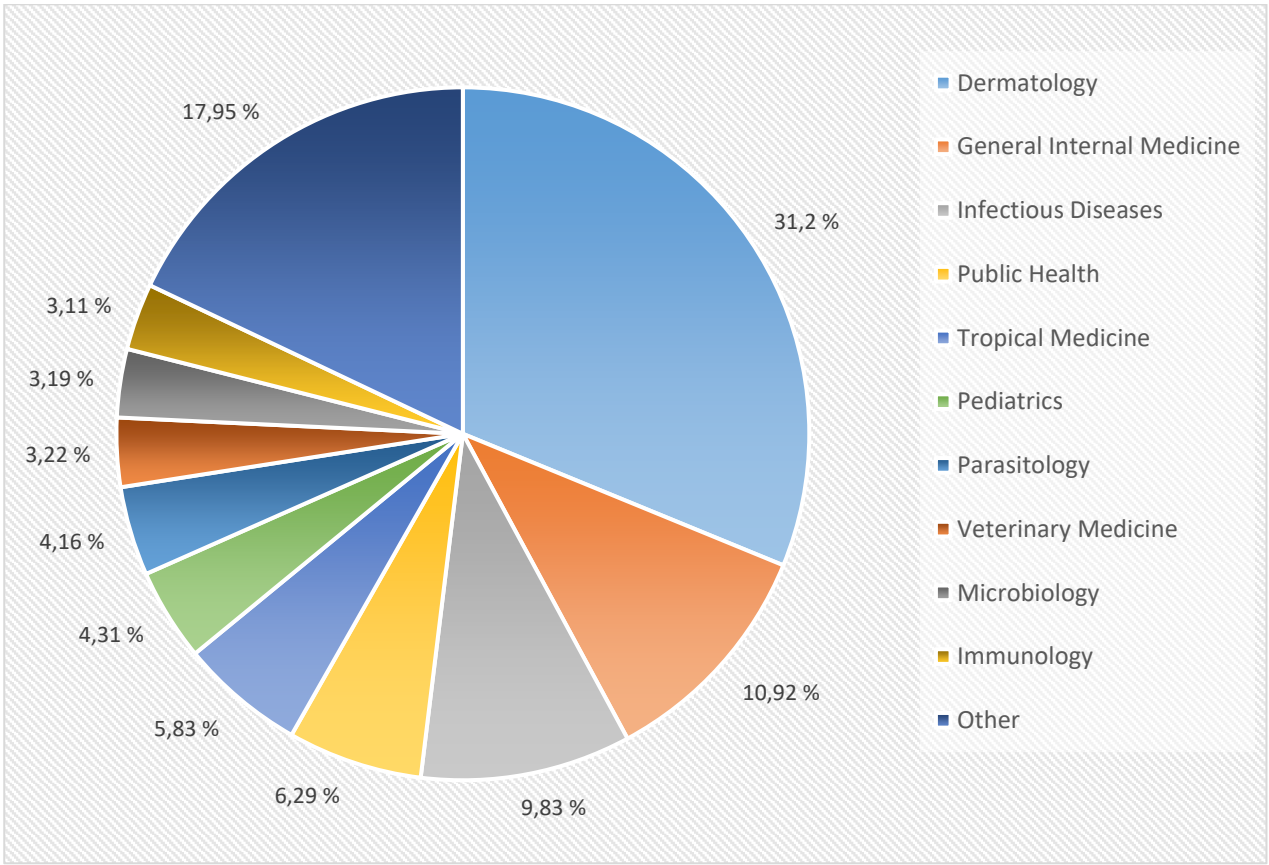

Figure 2. Categories of publications included in bibliometric analysis

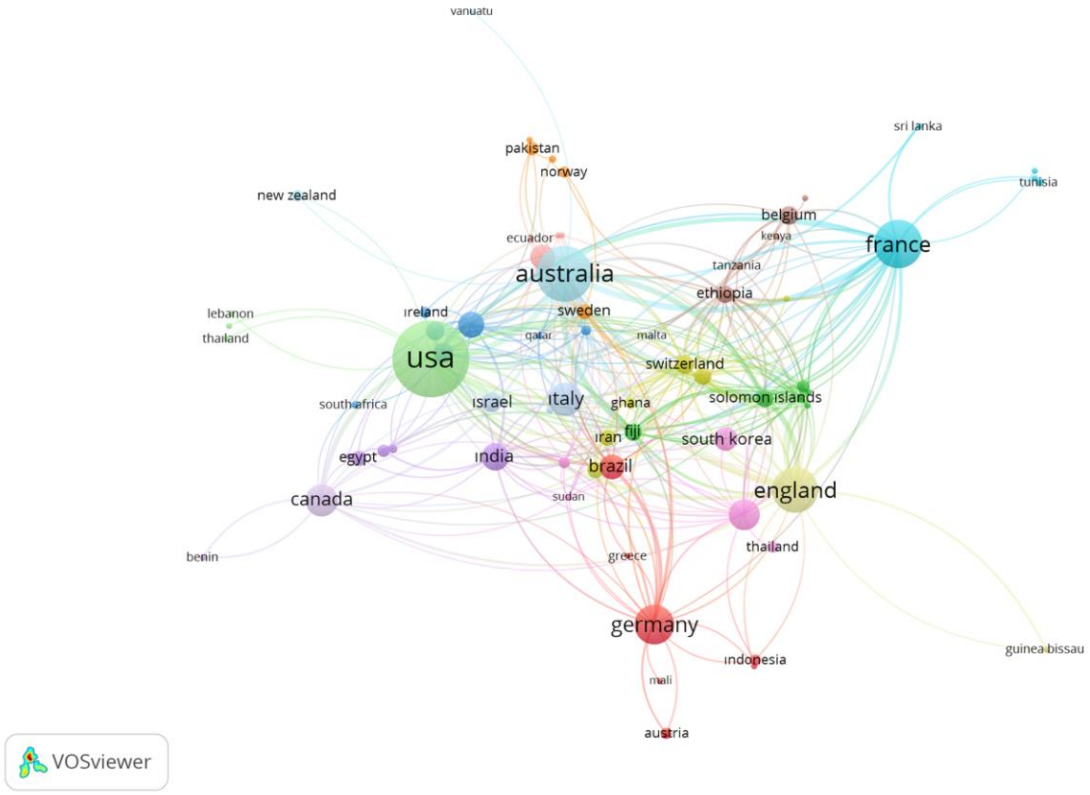

Figure 3. Countries that contribute to publications on scabies

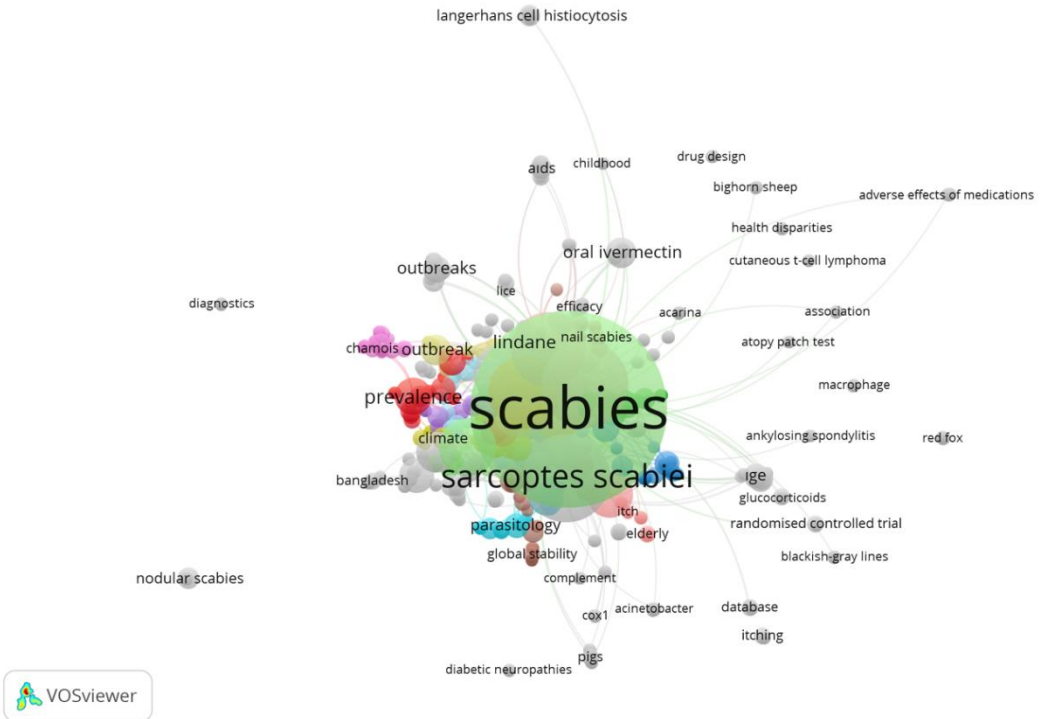

Figure 4. Keywords used in studies titled scabies

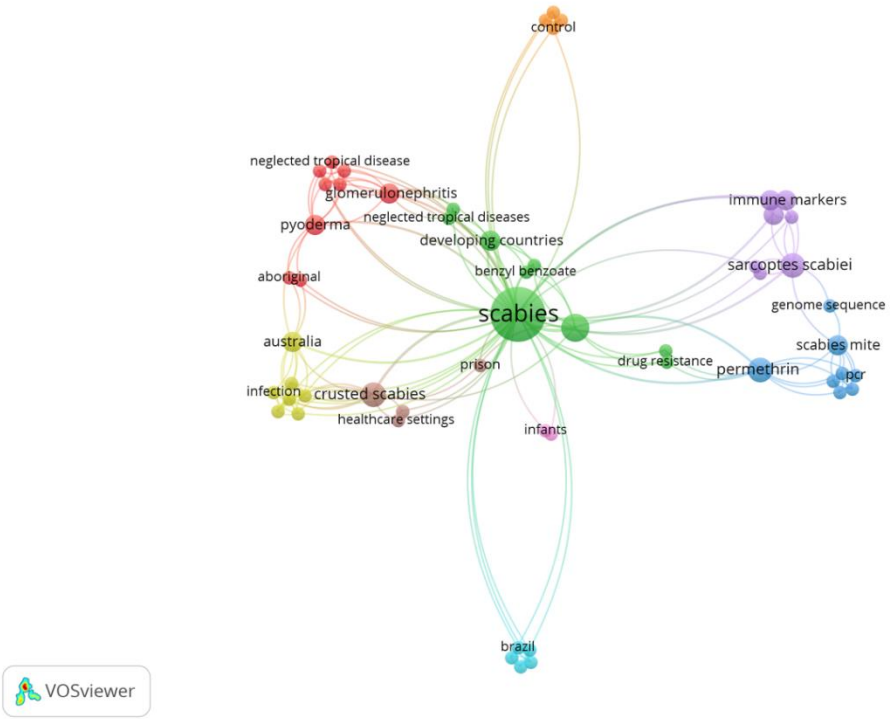

Figure 5. Keywords used in the top 100 most cited studies published with the title scabies

DISCUSSION

The bibliometric analysis examines countries and organizations, publication trends and citations, contributing authors, and expectations in a scientific field using statistical, graphical, and mathematical approaches. The bibliometric analysis could deliver messages in a certain area to researchers and physicians. It also provides both qualitative and quantitative literature data (12). Country productivity, literature trend, authors, and the distribution of studies by country are all included in bibliometric reports (13, 14).

Scabies is one of the most common diseases in the world and a significant global public health issue. Because the incidence of scabies has increased, recent research focused on treatment and control strategies for scabies (3). Future research priorities are to further define the burden of disease, to develop standardized approaches for diagnosis and population burden estimation. These priorities also include the improvement of new diagnoses and treatments and large-scale community control strategies (15).

Because scabies can be hard to detect, diagnosis is frequently delayed, resulting in costly epidemic management. Scabies affects over 200 million people worldwide and is a disease with a high prevalence, especially in resource-poor tropical regions (16).

In their bibliometric research on scabies covering the years 2009-2018, Singh et al. reported that the countries with the most studies on scabies were the USA, India, and Australia, respectively. They also found that the most common keywords were "scabies, *S. scabiei*, and ivermectin" (17).

Bansal, in his bibliometric research on scabies covering the years 2001-2015, found that the highest number of studies on scabies were conducted in 2015 with 137 studies, and the number of publications has increased gradually in recent years (18).

In this study, it was determined that the United States was the most productive country with 334

publications. Australia ranks second with 172 publications following the United States, while France takes third with 132 publications. According to the categorization of publications, the dermatology category, which accounts for 31.20% of total publications, comes first. General internal medicine ranks second with 10.92%, following the dermatology category, while the infectious diseases category is third with 9.83%. Over the past five decades, the number of scabies studies have gradually increased. Since 1970, most publications on "scabies" have been made in 2019, with 5.85%.

In this study, it was found that the most commonly used keywords in publications were "scabies, *S.scabiei* and ivermectin." According to the keywords used in the top 100 most cited studies published with the title scabies are "scabies, ivermectin, *S. scabiei*, and permethrin". Therefore, keyword analysis demonstrates that top keywords are more about diseases and their remedies.

This study reveals some hot topics of scabies research, such as "*S. scabiei*, ivermectin, and permethrin". This can be explained by the fact that scabies has been seen quite frequently in recent years and the difficulties experienced in the treatment.

A limitation of this study is that it only searched the WoS database for publications, so it only looked at studies from 1970 and beyond. Because databases containing more journals were not searched, a smaller number of studies were found. This study was included only one term as the subject to avoid incomprehensive results.

CONCLUSION

This study provided a detailed bibliometric analysis of studies on scabies. Accordingly, articles on scabies were published between 1970 and 2021, and an increasing trend was seen in the number of publications. The studies on Scabies have been systematically evaluated so far and it can be concluded which subject's studies are lacking and on which subjects studies can be done. This study can help the scientific community and policymakers to collaborate and discover possible treatments for scabies and prevent its spread.

Ethics Committee Approval: This study did not involve data collection or intervention in clinical trials. Thus, it did not need approval from an ethical committee.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept: Design Literature Search: Data Collection and Processing: Analysis or Interpretation: Writing: M.T.

Conflict of Interest: No conflict of interest was declared by the author.

Financial Disclosure: The author declared that this study hasn't received no financial support.

REFERENCES

1. Hay RJ, Steer AC, Engelman D, Walton S. Scabies in the developing world–-its prevalence, complications, and management. Clinical microbiology and infection. 2012;18(4):313-323.
2. Korhonen PK, Gasser RB, Ma G, Wang T, Stroehlein AJ, Young ND. et al. High-quality nuclear genome for Sarcoptes scabiei—A critical resource for a neglected parasite. PLoS Neglected Tropical Diseases. 2020;14(10):e0008720. doi: 10.1371/journal.pntd.0008720
3. Engelman D, Steer AC. Control strategies for scabies. Tropical medicine and infectious disease. 2018;3(3):98.

4. Vos T, Abajobir AA, Abate KH, Abbafati C, Global, Abbas KM, Abd-Allah F. et al. regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. The Lancet. 2017;390(10100):1211-1259.
5. Cassell JA, Middleton J, Nalabanda A, Lanza S. Scabies outbreaks in ten care homes for elderly people: a prospective study of clinical features, epidemiology, and treatment outcomes. The Lancet Infectious Diseases. 2018;18(8):894-902.
6. Khalil S, Abbas O, Kibbi AG, Kurban M. Scabies in the age of increasing drug resistance. PLoS neglected tropical diseases. 2017;11(11):e0005920.
7. Sunderkötter C, Feldmeier H, Fölster-Holst R, Geisel B, Klinke-Rehbein S, Nast A. et al. S1 guidelines on the diagnosis and treatment of scabies–short version. JDDG: Journal der Deutschen Dermatologischen Gesellschaft. 2016;14(11):1155-1167.
8. Choudhri AF, Siddiqui A, Khan NR, Cohen, HL. Understanding bibliometric parameters and analysis. Radiographics. 2015;35(3):736-746.
9. Kayir S, Dogan G, Yagan O, Hanci V. Bibliometric Analysis of Top 100 Most Cited Articles Related To “Liver Transplantation” in Anesthesia Literature. Dicle Tıp Dergisi. 2020;47(1):43-56.
10. Gantenbein L, Arora P, Navarini A, Brandt O, Mueller SM. Global publication productivity in dermatology: a bibliometric description of the past and estimation of the future. Journal of the European Academy of Dermatology and Venereology. 2021;35(7):1424-1433.
11. Wu JJ, Choi YM, Marczynski W. The 100 most cited psoriasis articles in clinical dermatologic journals, 1970 to 2012. The Journal of Clinical and Aesthetic Dermatology. 2014;7(10):10.
12. Wang Y, Zhang H, Fang R, Tang K, Sun Q. The top 100 most cited articles in rosacea: a bibliometric analysis. Journal of the European Academy of Dermatology and Venereology. 2020;34(10):2177-2182.
13. Maymone MB, Laughter M, Vashi NA, Jones JD, Hugh J, Dunnick CA, Dellavalle RP. The most cited articles and authors in dermatology: A bibliometric analysis of 1974-2019. Journal of the American Academy of Dermatology. 2020;83(1):201-205.
14. Berlinberg A, Bilal J, Riaz IB, Kurtzman DJ. The 100 top-cited publications in psoriatic arthritis: a bibliometric analysis. International Journal of Dermatology. 2019;58(9):1023-1034.
15. Engelman D, Cantey PT, Marks M, Solomon AW, Chang AY, Chosidow PO. et al. The public health control of scabies: priorities for research and action. The Lancet. 2019;394(10192):81-92.
16. Chandler DJ, Fuller LC. A review of scabies: an infestation more than skin deep. Dermatology. 2019;235(2):79-90.
17. Singh S, Kataria S, Soni VM, Munjal N. Global Research On Scabies: A Scientometrics Assessment Of Publicatıon Output During 2009–2018. Plant Archives. 2020;20(2):3499-3506.
18. Bansal S. A Bibliometric Study of World Research Publications on Scabies. Library Waves. 2019;5(1):29-34.