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RESEARCH ARTICLE

EVALUATION OF THE 100 MOST CITED ARTICLES ON SJOGREN'S SYNDROME: A BIBLIOMETRIC ANALYSIS

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ABSTRACT

Purpose: Our study aimed to evaluate the 100 most cited publications related to Sjögren's Syndrome (SS) in terms of their bibliometric characteristics.
Material and Methods: Our study was carried out with the appropriate keywords by using the "Web of Science (WOS) "search engine after obtaining ethics committee approval. The search was performed on 23.06.2021, and the top 100 most cited publications were determined. The total number of citations of each publication, the annual number of citations, the authors, the information related to the study and the journal were determined.
Results: In the literature analysis covering the period between 1975 and 2021, it was determined that there were a total of 22,251 publications related to SS. The total citation average of the 100 most cited articles was found to be 333.10±386.10, while the annual citation average was 18.38±21.96. The first three areas that these studies focused on were pathogenesis (42%), clinic (16%), and treatment (12%). A significant relationship was found between the publication year of the article, name and country of the journal, and the mean annual citation number. A significant relationship was found between the subject of the study and the presence of a group author in the study and both the total number of citations and the mean annual citation number ($p<0.05$).
Conclusion: Our study is the first study evaluating and analyzing the top 100 most cited studies related to SS in the literature. Today, the importance of rheumatological diseases in the clinic is increasing day by day, and SS, which is among these diseases, has a great place.

Keywords: Analysis, biblometrics, rheumatology, sjogren's syndrome

INTRODUCTION

In order to evaluate the most cited articles in many medical branches, it is frequently possible to come across various publications in different clinical and surgical branches in Turkey and abroad (1,2). When a scientific article cites another scientific article as a source, it is regarded as a reference to the article. The amount of citations in scientific articles shows the effectiveness of the article. Highly cited articles and the journals where they are published are considered to be more qualified (2).

The first bibliographic study was published in "The Journal of the American Medical Association (JAMA)" by Garfield in 1987 with the title of the 100 most cited articles(T100) published in JAMA (3). Since then, many articles have been presented to their readers as "the most cited articles" not only in general journals but also in specific journals (4,5). While Bagcier et al. (6) investigated T100 in Fibromyalgia syndrome

between 1990 and 2020, Kreutzer et al. (7) examined T100 in the field of neurorehabilitation between 2005 and 2016. As a result of bibliometric analyzes, the authors look at how and in what way the subject was handled in the past studies, and plan how they will take steps in future studies.

Sjogren's syndrome (SS) is a multisystem immune-mediated disease characterized by hypofunction of salivary and lacrimal glands and possible multi-organ systemic manifestations (8). This disease predominantly affects middle-aged females, but can also be observed in children, males, and elderly individuals (9). The clinical presentation of SS is heterogeneous and can range from symptoms of Sicca to systemic disease and lymphoma (9). The treatment of SS ranges from local and symptomatic treatments aimed at controlling dryness to disease-modifying agents and biologic medications (10).

The clinical effectiveness of autoimmune diseases is increasing day by day. Having knowledge about SS, one of the autoimmune diseases, by clinicians who follow it, is important in terms of future studies and following developments. It is clear that bibliometric analysis with SS will guide future studies for scientists. These efforts can be a guide in the field of SS as well as in other fields. Our study aimed to examine the most cited international articles on SS by their authors, countries, institutions, citation numbers, and mean annual citation numbers through the ISI and WOS search engine and to bibliometrically analyze the journals they were published in (11).

MATERIAL AND METHODS

Sampling of the Research

SS and its synonyms were searched by using MeSH (Medical Subject Headings 2021) Browser. "TS=sjogren* OR TI=sjogren*" (TS:Topic, TI:Title) was used as the search key. Articles between 1975 and 2021 (June) were included in our study.

Collecting the Data

The search was carried out on 26.06.2021, and the 100 most cited international articles conducted on the subject were determined. Articles not directly related to SS were excluded. A list was created for the first 100 articles. It was scanned and checked whether the authors on the list were included in other articles on the list. The total number of citations of each publication, the annual number of citations, the authors, the information related to the study, and the journal were determined by using WOS (6). Articles based on letters to authors and case reports were not included in the study.

Statistical analysis

Statistical analysis of the data obtained in the study was performed by using SPSS (Statistical Package For Social Sciences, Chicago, IL, USA) 20.0 program. Student t-test, Kruskal Wallis test, Mann Whitney U test, and chi-square test were carried out to compare the groups. The distribution of data evaluated. The p-value below 0.05 was considered to be a significant difference.

The Type and the Ethical Authorisation of the Study

In this study, which was planned as a cross-sectional study, the "advanced mode" feature of the ISI and WOS search engine was used after obtaining the consent of the ethics committee (Ethics Committee decision no: 2021/14-10, Date: 06.05.2021).

RESULTS

From January 1975 to June 2021, it was determined that there were a total of 22,251 publications on the WOS search engine. The most cited study had 3,752 citations, while the lowest number of citations in the top 100 most cited studies was 175. The distribution of the first-name authors of the 100 most cited articles in the field of SS is provided in Table 1 and Appendix 1. The mean of the total citation number of the 100 most cited studies was determined as 333.10±386.10. The annual citation numbers of the studies varied between 187.60 and 10.29 and were found to be 18.38±21.96 in average.

The most cited study was the article titled "Classification criteria for Sjögren's syndrome: a revised version of the European criteria proposed by the American-European Consensus Group" published in 2002 in the journal of "Annals of the Rheumatic Diseases" by Vitali C et al. (12). The institution with the most articles on SS was found to be the Scripps Clinic Research Foundation with 8 articles, followed by the Universities of Johns Hopkins, Barcelona, California, San Francisco, and Texas (Table 1). Other characteristics of the 100 most cited articles in the field of SS are shown in Table 2.

According to the results of our study, 21% of the articles on SS were published between 2005 and 2009; this was followed by the studies conducted between 2000-2004 and before 1990 which shared second place with 20% (Figure 1). A weak positive

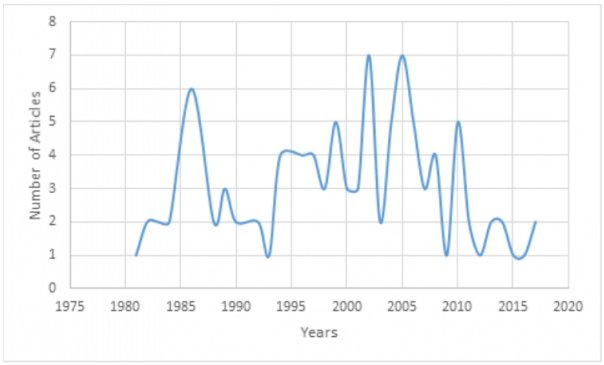

Figure 1. Distribution of the top 100 most cited articles on Sjogren's Syndrome by years

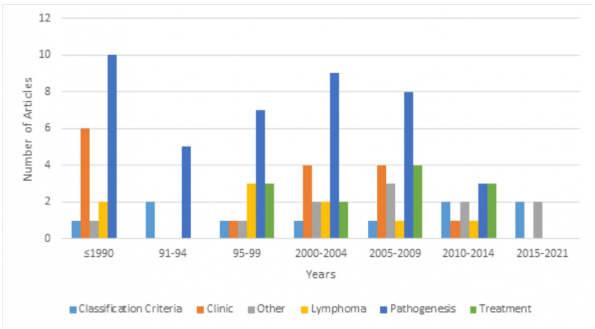

Figure 2. Distribution of the top 100 most cited article topics on Sjogren's Syndrome by years

correlation was found between the year of publication and the mean annual citation number (r=0.365; p<0.001) (Table 3).

When the focal areas of the first 100 most cited studies conducted on SS were examined, the top three areas were pathogenesis (42%), disease clinic (16%), and treatment (12%), respectively (Table 2). Both the total and mean annual citation numbers of the studies related to the classification criteria were found to be higher. When evaluated in terms of the years, it was seen that the studies on the disease pathogenesis attracted attention until the beginning of the 2010s, and the studies on the treatment and classification criteria came to the forefront (Figure 2). The titles, years, authors and mean annual citation number, and total citation number of the first 100 studies were given in Appendix 1.

The first three journals where the top 100 most cited publications were published were determined as "Arthritis and Rheumatism (23%)", "Annals of the Rheumatic Diseases" (13%), and "Journal of Immunology" (6%), respectively (Table 2). The distribution of the articles in terms of Q indices was Q1 81%, Q2 13%, and Q3 6% (Table 2). It was determined that there was a weak positive correlation between the impact factors of the journals and the total number of citations (r=0.365; p<0.001) (Table 3). When the countries of the first authors were evaluated, 40% were in the USA and 13% in France, and when the continents of the first authors were evaluated, 54% were non-Europeans and 46% were Europeans. When the countries of the journals were evaluated, 75% of them were from the USA, and 22% were from England. When the journals were evaluated in terms of continent, 35% were determined to be European journals, while 65% of them were non- European journals (Table 2).

A significant relationship was found between the publication year of the article, journal name and journal country, and the mean annual citation number (p<0.001). Furthermore, a significant relationship was found between the subject of the study and the presence of a group author in the study and both the mean number of citations and the annual number of citations. When the subject categories were evaluated by the journals, a statistically significant difference was found (p=0.048). Accordingly, it was observed that the studies on pathogenesis were mostly published in the journals named Lancet, Journal of Immunology and Arthritis and Rheumatism, studies on Classification Criteria in the journal named Annals of the Rheumatic Diseases, and finally, the disease clinic in the journal named Annals of Internal Medicine. In the study, a statistically significant difference was found between the presence of a group author and both the studied subjects and the type of study (p<0.001). The classification criteria for the study and the prospective studies in the study type played a significant role in this statistically significant difference.

The specialties of the authors of the articles were in rheumatology by 40%, Immunology by 21%, Dentistry by 7%, Ophthalmology by 7%, and Neurology by 7%, while the share of other branches were around 18%. When the subjects discussed in the articles were evaluated by the countries of the authors, it was seen that it revealed statistically significant results (p<0.001). It was determined that Italian authors more frequently discussed the classification criteria, Spanish authors discussed the disease clinic, Greek authors discussed Lymphoma, Japanese and American authors discussed the pathogenesis, and English authors discussed the treatment.

Of the 100 most cited studies on SS, 62% were prospective studies, 15% was retrospective, 12% was

Table 1: The first authors and instutions of the 100 most cited articles about Sjogren's Syndrome in the literature

First Authors Names	Number of cited articles
Fox RI	7
Vitali C	4
ALEXANDER EL, Ramos-Casals M, Seror Raphaele, Theander E	3
Devauchelle-Pensec Valerie, HARLEY JB, Mariette X, MOUTSOPOULOS HM, Shiboski CH,	2
Adamson TC, Alexander GE, Amft N, Argueso P, Bave U, Bohnhorst JO, Brito-Zeron Pilar, Christodoulou Maria I., DANIELS TE, Dass S., DAUPHINEE M, Delalande S, Garcia-Carrasco M, Gottenberg JE, Green JE, Griffin JW, Groom J, Haddad J, Haneji N, Hansen A,Hjelmervik TOR, Hu Shen, Ioannidis JPA, Ito I, Ittah Marc, Kassan SS, Katsifis Gikas E., KinoOhsaki J, Koike K,, Kong LP, Lessard Christopher J., Manthorpe R, Marsh P, Meijer J. M., Mellgren SI, Mori K, Nguyen Cuong Q., Niederkorn Jerry Y., Nocturne Gaetane, Parambil Joseph G., Patel Ruchika, Pflugfelder SC, Pijpe J, Qin Baodong, Robinson CP, Royer B, SAITO I, Sakai Azusa, Salomonsson S, Sankar V, Schmid U, Shiboski S. C, Shimazaki J, Skopouli FN, Steinfeld S, Stern ME, Stott DI, Talal N, Terada K, Thomas E, Tsubota K, Tzioufas AG, Vernant JC, Vivino FB, Voulgarelis M, Waterman SA, Whitcher John P.	1
Institutions of the First Authors	**Number of cited articles**
SCRIPPS CLIN & RES FDN	8
Johns Hopkins Univ, Univ Barcelona, Univ Calif San Francisco, Univ Texas	5
Univ Paris 11, Univ Paris 11	4
Hop Bicetre, Natl Univ Athens, Univ Pisa	3
Lund Univ, Mayo Clin, Tokyo Dental College, Univ Oklahoma, Univ Florida, Univ Groningen, Univ Florida, Univ Groningen	2
Allergan Pharmaceut Inc, Amer Red Cross Jerome H Holland Lab, Cetus CORP, Christian Albrechts Univ Klinikum, CHRU Lille, CHU Brest Hop Cavale Blanche, Free Univ Brussels Garvan Inst Med Res, Harvard Univ, Haukeland Univ Hosp, Hop Bichat Claude Bernard, Hop Jean Verdier, Hop La Meynard, Hop St Louis, Hosp Univ Penn, Karolinska Hosp, Kochi Med Sch, Kyoto Univ Hosp, Nagasaki UNIV, Nagoya Univ, National Institute of Dental and Craniofacial Research National Institutes of Health, NATL Tech Univ Athens, Oklahoma Med Res Fdn, Ospedale Villamarina Pflugfelder SC, Second Mil Med Univ, Thomas Jefferson Univ, Tohoku Univ, Univ Copenhagen, Univ Tokushima, Univ Tokyo, Univ Adelaide, Univ Athens, Univ Bergen, Univ Birmingham, Univ Bretagne Occidentale, Univ Calif Los Angeles, Univ Colorado, Univ Glasgow, Univ Hosp Charite, Univ Ioannina, Univ Leeds, Univ Manchester, Univ Miami, Univ Oslo, Univ Uppsala Hosp	1

about review, 3% was guideline, 2% was cross-sectional, and 6% was from others. When considered in terms of years, it was determined that the type of study showed statistical significance ($p<0.001$). It was observed that prospective studies were replaced by reviews over time, and retrospective studies were conducted at a high rate between 2015 and 2019 (Figure 3).

When analyzed in terms of the Web of Science journal categories, 47% of the studies were in the rheumatology category, 16% "Medicine, General & Internal, and 9% Immunology (Table 3).

DISCUSSION

SS is a systemic chronic autoimmune disease with unknown etiology, characterized by immune-

mediated damage to the salivary and lacrimal glands and leads to dry mouth (xerostomia) and dry eyes (xerophthalmia). In addition, it may cause the clinical picture of "sicca syndrome" or "sicca complex" by affecting other mucosal surfaces such as the respiratory tract, digestive system, and vagina (13). Extraglandular symptoms such as peripheral nerve, pulmonary or gastrointestinal system, kidney, skin involvement, myalgia, and arthralgia are frequently observed, causing a reduction in the quality of life (13). Its prevalence is lower in Europe, being consistent with 39 cases per 100,000 (13). Furthermore, since dryness and myalgia symptoms are common, it is included in the differential diagnosis with fibromyalgia which is a common rheumatic disease. Today, rheumatic diseases have an important place in clinics, and it is important to follow the developments related to SS, which is the second most common rheumatic disease. Therefore, it is necessary for every clinician to know SS well and to follow the previous studies and future developments and studies. Bibliometric studies enable a close follow-up of the current literature of SS, as well as in other fields, and guide future studies. For this purpose, by using the Web of Science search engine, valuable information such as databases, academic personal citation statistics, and average citation indexes can be accessed (1,14).

Bibliometric studies have been conducted in various disciplines around the world and in our country. It is seen that most of the T100 studies on Fibromyalgia Syndrome were conducted in 2004 according to Bagcier et al. (6), on Rheumatoid Arthritis between 2000-2004 according to Yin et al. (14), and on Psoriatic Arthritis between 2001-2007 according to Berlinberg et al. (15). In our study, consistent with the literature, the highest number of studies by year were between 2005 and 2009, with 21 studies. In the correlation analysis, while a significant relationship was found between the increasing years and the mean number of citations per year, no significant correlation was found with the total number of citations. Our study is also consistent with the study conducted by Büyükçoban et al. (16). The relevant situation indicates that the information is up-to-date, new information rapidly replaces old information and is frequently used.

In the bibliometric study of Akyol et al. (17) including publications on rehabilitation in Ankylosing Spondylitis, the authors were mostly from Germany, followed by Turkey and the USA, while in the study of Bagcier et al. (18) related to the most cited articles in ankylosing spondylitis, it was determined that the authors were mostly from Germany, the Netherlands, and the United Kingdom, respectively. In our study, the USA, Japan, and France were the countries that contributed the most to the SS-related studies. This situation can be explained by the fact that the prevalence of SS is as high as 30% in the USA, especially in the cases with rheumatoid arthritis, and since SS was accepted as a persistent disease by the Japanese Ministry of Health in 2015, the authors were interested in SS-related issues (19,20). Our study was mostly written by rheumatologists, as in the study conducted by Berlinberg et al. (15) in which T100 was evaluated in psoriatic arthritis. This is followed by immunologists and dentists. The reason for the attention of immunologists is the interest in the immune mechanisms, which cause the formation of SS. Again, in our study, a significant relationship was found between the presence of a group author and both the total number of citations and the mean annual citation number. This indicates that the studies, which are multi- centered and include many experts in their fields, are of higher quality and more valuable. In the study, a statistically significant relationship was detected between the presence of a group author and the discussed subject. It is seen that the content of the studies with a group author is mostly related to the classification criteria. This puts forward that when the classification criteria of a rheumatic disease such as SS are desired to be determined, it can be obtained by including many authors from different nationalities in the study. A similar statistical significance was also found between the group author and the type of the study. Accordingly, studies involving a group of authors are often prospective studies.

In the study conducted by Kwan et al. (21) and titled "Top 100 cited articles in the field of rheumatology," the journal with the most articles was found to be "Arthritis and Rheumatism," which was followed by the "New England Journal of Medicine." In the study of Bagcier et al. (18) titled "Top 100 cited articles on fibromyalgia syndrome," the highest number of studies belonged to the journal of "Arthritis and Rheumatism," which was followed by the "Annals of the Rheumatic Diseases" journal. In our study, the journals with the most cited studies on SS were "Arthritis and Rheumatism" (23%), "Annals of the Rheumatic Diseases" (13%), and "Journal of Immunology" (6%).

Table 2. The characteristics of the most cited 100 articles about Sjogren's Syndrome in the literature.

Parameters	Subgroups	n	**Total number of citations** mean ± SD	**Citiations per year(mean Citiations)** mean ± SD	**p (Total number of citations)**	**p (Citiations per year)**
Year	<1990	20	302,20±133,07	8,30 ±3,51	0,825	**<0,001***
	1991-1994	7	464,14±439,25	16,10 ±15,09		
	1995-1999	16	262,38±88,67	10,82 ±3,85		
	2000-2004	20	459,10±784,05	23,20 ±39,19		
	2005-2009	21	281,33±155,97	17,32 ±9,18		
	2010-2014	12	295±172,36	28,37 ±16,81		
	>2015	4	297±106,29	54,45 ±26,33		
Author's Continent	Non-Europe	54	293,83±156,11	16,91±17,20	0,308	0,487
	Europe	46	379,17±543,29	20,10±26,59		
Author's Country	USA	40	303,08±162,55	17,87±19,26	0,115	0,161
	France	13	292,38±113,29	17,74±8,48		
	Other	13	276,92±135,18	15,66±9,76		
	Japan	10	242,30±74,72	10,86±3,82		
	Greece	7	326,57±107,49	13,97±3,98		
	Sweden	5	275,20±63,31	17,57±5,21		
	Spain	5	231±58,49	19,06±8,47		
	Italy	4	1472,75±1603,72	65,85±82,98		
	England	3	218±20	11,88±4,56		
Author's Branch	Rheumatology	40	425,50±590,17	22,94±30,33	0,792	0,173
	Immunology	21	269,67±124,09	14,38±8,24		
	Other	18	268,22±85,60	13,25±6,84		
	Dentistry	7	300,28±119,50	30,52±31,81		
	Ophtalmology	7	271,14±86,32	13,72±4,03		
	Neurology	7	256,86±72,58	9,99±6,40		
Group of authors	No	89	291,11±173,10	14,20±8,58	**0,011***	**<0,001***
	Yes	11	672,73±1034,02	52,17±52,11		
Journal Q Index	Q1	81	342,43±423,78	18,87±23,19	0,130	0,654
	Q2	13	278,31±162,94	16,81±19,11		
	Q3	6	325,67±67,07	15,06±6,67		
Journal's Country	USA	75	303,65±191,91	15,53±12,81	0,670	**0,029***
	England	22	446,41±744,73	28,84±39,20		
	Other	3	238,00±61,49	12,97±10,78		
Journal's Continent	Non Europe	76	302,32±190,99	15,65±12,78	0,500	0,057
	Europe	24	430,54±713,82	27,01±37,97		
Name of the Journal	OTHER	50	274,46±116,69	16,02±13,58	0,716	**0,048***
	ARTHRITIS AND RHEUMATISM	23	330,91±267,28	14,71±8,97		
	ANNALS OF THE RHEUMATIC DISEASES	13	571,77±960,6	12,94±8,61		
	JOURNAL OF IMMUNOLOGY	6	257,67±72,44	11,04±3,55		
	LANCET	4	434±344,64	20,18±22,61		
	ANNALS OF INTERNAL MEDICINE	4	315±154,79	12,94±8,61		
Journal's Category	RHEUMATOLOGY	47	388,81±542,98	23,05±30,09	0,636	0,372
	MEDICINE, GENERAL & INTERNAL	16	327,88±187,32	17,31±12,39		
	OTHER	15	255,20±127,42	13,87±9		
	IMMUNOLOGY	9	272,56±67,50	12,03±4,15		
	OPHTHALMOLOGY	7	273±85,42	13,40±4,06		
	MULTIDISCIPLINARY SCIENCES	6	266,17±85,29	11,21±6,87		

Table 2. (continued)

Article Type	Prospective	62	346,97±474,12	16,86±23,50		
	Retrospective	15	307,87±143	18,35±17,23		
	Review	12	342,75±242,79	21,66±13,14		
	Other	6	261,83±55,36	11,27±8,54		
	Guideline	3	357±63,50	53,66±40,20		
	Cross-sectional study	2	212±19,80	14,40±8,69	0,436	0,115
Article Topic	Pathogenesis	42	274,10±108,36	13,03±6,41	**0,014***	**0,017***
	Clinic	16	279,63±93,75	12,97±6,1		
	Treatment	12	249,42±54,54	16,16±5,12		
	Other	11	293,64±220,46	21,98±15,79		
	Classification Criteria	10	864,70±1077,08	53,93±55,36		
	Lymphoma	9	272,56±60,97	13,03±6,41		

n : Number of Articles

p<0.05, Pearson correlation analysis

bold*:statistically significant

Our study shows similarities when compared with the journals in which the most cited other rheumatic diseases were published. When the study of Zhao et al. (22) where they conducted the global research of bibliometric studies on Ankylosing Spondylitis, the study of Yin et al. (14) on Rheumatoid Arthritis and the study of Büyükçoban et al. (16) titled "Top 100 Cited Articles on Geriatric Anesthesia" are examined, it is seen that the articles were mostly published in US-centered journal which was followed by UK-centered journals. From this aspect, our study is consistent with the literature. It is seen that the significant difference between the country of the journal where the study was published, and the mean number of citations is related to the UK-based journals.

In the study conducted by Berlinberg et al. (15), where the 100 most cited articles on psoriatic arthritis were evaluated, the journals where the studies were published were mostly in the field of Rheumatology followed by Dermatology; in our study, it was also mostly Rheumatology, which was followed by Medicine, General & Internal. Although our study is consistent with the literature in this respect, a significant relationship was found between the journal name and the mean annual citation number. The significant difference was formed by the Annals of the Rheumatic Diseases with 13 studies and Lancet with 4 studies. For rheumatic disease, it is not surprising that the authors sent their articles to the journal in the rheumatism category, and the authors chose the journals with stronger features and the journals with the appropriate category with their article contents when submitting their articles. In their study, Berlinberg et al. (15) stated that the researchers sent their studies to the journals with high impact factors and that the number of citations in these journals was high. In our study, there was no significant relationship between the high impact factor and the total and annual citation number.

In the study conducted by Yin et al. (14), when the study types were examined, randomized controlled, prospective clinical study types were at a higher rate compared to other types, and they were followed by reviews. Similarly, in the study of Bagcier et al. (18) , randomized controlled, prospective clinical study types are in the first place. Similar to the literature, randomized controlled, prospective clinical study is also in the first place in our study. Significance was determined in the study types by years. In our study, it is seen that prospective studies were replaced by reviews when evaluated in terms of the years. This situation can be explained as the desire to reach more original content related to the disease after the blending of the increasing knowledge and the current literature. In the study conducted by Bagcier et al. (18), where the subject contents of T100 on Ankylosing Spondylitis were evaluated, treatment was in the first place, followed by disease activity and pathogenesis. In the study of Yin et al. (14), treatment was in the first place, followed by pathogenesis and risk factors. In our study, the pathogenesis was found to be in the first place, followed by the disease clinic. Our study is similar to the literature in this respect. In the pathogenesis of SS disease, the presence of lymphocyte infiltration and lymphoma formation attracted the attention of the authors; therefore, the studies on pathogenesis were at the forefront. When analyzed statistically, a statistical significance was found between the studies on classification criteria

Table 3. Correlation relationships and correlation coefficients between the number of citations, publication year and journal impact of the 100 most cited studies on Sjogren's Syndrome (r)

	Journal Impact factor	Year of Publication
Number of Citiation	0,061	0,017
Average Number of Citations per Year	0,071	0,365*

* p<0,001 Pearson correlation analysis

and both the total number of citations and the mean annual number of citations. This indicates that the classification criteria of the disease difficult to diagnose attracted attention by the authors; therefore, it was cited at a higher rate. When the subject contents were evaluated by the journals, a statistically significant difference was found. Accordingly, the authors chose the journals by the subject of the article they wrote about SS, and the journals created publication policies according to those subjects.

When the subject categories were examined by the countries of the authors, statistical significance was found. Accordingly, the pathogenesis of the disease was studied more by the authors from developed countries such as Japan and the USA. This situation shows that developed countries have the opportunity for higher-cost studies.

The most important limitation of our study is that the search keys used when searching the Web of Science database and enabling the algorithm to find and list the relevant publications are given by the Web of Science itself, and some studies on the subject cannot be included in the list resulting from the search. However, although this rate is very low, it is not a limitation specific to this study, and all studies on this subject have the same limitation. Another limitation of our study is that the T100 list was created solely on the basis of a search on the Web of Science database, but other databases such as Google Scholar and Scopus were not searched, and articles written in languages other than English were not included in the analysis.

Treatment of rheumatic diseases is also one of the most frequent subjects of science today, and thanks to bibliometric analyzes, we can see the direction of information flow on a specific subject. For example, in a bibliometric analysis of Behcet's disease by Kocyigit et al (23), they reported that there is an increasing

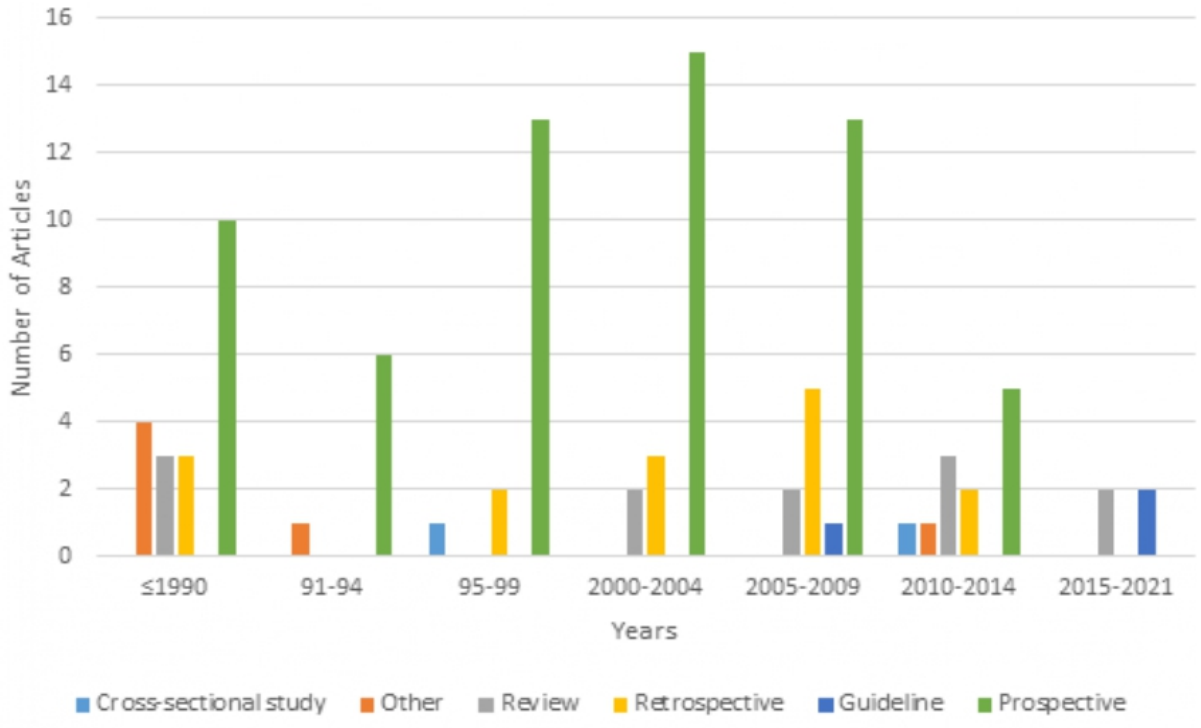

Figure 3. Distribution of the top 100 most cited article topics on Sjogren's Syndrome by years

trend of publication about the disease, and more frequent publications in countries where the disease is common. In our study, similar to the literature, it can be said that the studies on SS have increased over the years and the interest in the different components of the disease has increased, thanks to bibliometric analyses.

CONCLUSION

In conclusion, our study, which examined the citation numbers of international articles on SS, is the first study in this respect. As a result of our study, it was determined that the mean annual number of citations increased in more recent studies, both total citations and mean annual citations were higher in the studies with a group author, the mean annual citation number of publications in British journals was higher, and the articles addressing the classification criteria had a higher number of total and mean annual citation. The bibliographic articles created by using scientific search engines provide significant guidance to researchers regarding which subjects should be focused on. It is also suggested that such studies should be updated and rewritten at certain time intervals to carry out a healthy data analysis. We hope that these data will contribute to the efforts to conduct new studies in this field. However, there is a need for studies where more comprehensive databases are used, languages other than English are included, and national parameters are offered in detail.

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