FIBROMYALGIA RESEARCH TRENDS: SCIENTOMETRIC INVESTIGATION

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Abstract: The focus of this study is to ascertain the research trends of Fibromyalgia Research Trends: Scientometric Investigation. The data for this study were collected from the Web of Science and analysed using various tools like Histcite and interpreted using Microsoft Excel. Here the analysis was made for the country, organization, and Language-wise publications along with Relative growth rate, doubling time, Exponential Growth Rate, and Degree of Collaborative indexes are also interpreted.

Keywords: Fibromyalgia, RGR, DC, Scientometric, Bibliometric.

Introduction:
Research articles are now an important evaluation metrics of a nation's basic research activities in scientometrics. It should be noted, although, that not only the figures on publishing fascinate the research establishment and the general public, but also the pinnacles of scientific and technological accomplishments. The performance of science in the field of scientometrics has been the subject of numerous scientometrics studies that have been published in the literature. An essential component of current information science research has been the scientometric examination of scientific publications. It is possible to acknowledge the use of bibliometric studies to determine publication, authorship, citation, and secondary journal coverage patterns. These elements can provide a glimpse into the dynamics of the area being considered, expecting that this will eventually result in improved information resource organisation, which is crucial for the methodical use of knowledge that is already available.

SCIENTOMETRICS:
Scientific measurement and analysis is known as scientometrics. Bibliometrics, or the measuring of (scientific) publications, is frequently used in scientometrics in practise. Translated directly as "measuring of science," scientometrics. In reality, it refers to the use of statistical indicators, particularly bibliometric indicators, to assess the production of the scientific community. The study of measuring advancements in science and technology is known as "scientometrics," a term that originated from the Russian "naukometria" and is primarily used in the East. This also explains the journal's founding in 1978 and its Hungarian name, scientometrics. We suggest the reader to Egghe (1988) for more details on the background and purpose among these designations. 10 Scientometrics primarily focuses on implications in policy analysis. (Rousseau &Egghe 1990).

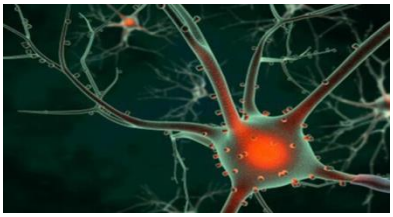
Scientometrics is the study of the attribute values of science as a discipline or as an economic activity, according to Tague-Sutcliffe (1992). It pertains to scientific policymaking and is a component of the sociology of science. It involves quantitative analyses of scientific activity, such as publication, and hence somewhat overlaps bibliometrics. Scientometric has been referred to as "the science of measuring science" by Bookstein (1995). For the purpose of evaluating scientific advancement, social significance, and the effects of the utilization of science and technology, scientometric assessments are also regarded as bibliometric assessments.

FIBROMYALGIA:
History of fibromyalgia:
Not before 1976 has been the ailment given a new term. Fibromyalgia has been around for generations, despite the misconception that it is a recent illness. It was originally regarded as a psychiatric illness. However, it was categorised as a rheumatic disorder in the early 1800s that resulted in tightness, discomfort, exhaustion, and trouble sleeping. Early in the 1820s, sensitive spots related to fibromyalgia were identified. Due to the widespread belief among physicians that pain was brought on by swelling at the areas of discomfort, the disorder was previously known as fibrositis. The Greek words for "myo" (muscle) and "algia," as well as the Latin word "fibro" (which refers to fibrosis tissue), were used to create the name (pain). The American College of Rheumatology was founded in 1990. In 2007, the first fibromyalgia medicine treatment instructions for identifying the condition were made accessible. As of 2019, the past three months of pain in six out of nine broad locations, according to the Worldwide Inspected for Fibromyalgia.

• Mild sleep disruption
• Tiredness

DEFINITIONS:

Ailments like fibromyalgia, often known as fibromyalgia disorder, cause pain and pains throughout the body. Other symptoms common in fibromyalgia patients include mood or memory issues, excessive fatigue or difficulty sleeping. More women than men suffer from fibromyalgia. Your ability to work or carry out daily tasks may be hampered by the pain, excessive fatigue, and lack of sleep that fibromyalgia produces. Both pain relief and symptom reflector prevention are possible with medication.



Images of Fibromyalgia

The following are typical signs:

- Generalized discomfort
- Tight ligaments and tendons in the morning
- Chin rigidity and pain
- Pain and fatigue in the face muscles and surrounding fibrous tissues
- Headaches
- Inconsistent sleep patterns
- Irritable bowel syndrome (IBS)
- Painful menstruation periods
- Restless leg syndrome (RLS), tingling and numbness in the hands and feet, sensitivity to cold or heat, "fibro-fog," or problems with memory and attention, and tiredness.

REVIEW OF LITERATURE:

Wang, L., Confraria, H. (2020) the health of the continent of Africa is being severely hampered by pressing issues. In contrast, federal research grants are severely constrained in the majority of African nations, and their research infrastructure is typically dependent on external funding and cooperation. There are concerns in this setting that international counterparts will control clinical research priorities, which could prevent research from being pertinent to particular local health needs. In this paper, we examine the relationship among infection rates in the native community between 2006 and 2015 and the spread of medical focus areas and investments across diseases in Africa. Our findings demonstrate that although African countries' medical research capacities are still very limited and heavily reliant on non-African and charitabledonors, the prevalence of diseases in sub-Saharan Africa is typically correlated with the region's research emphasis in medicine. Our findings are fascinating because they show that, despite absolute inconsistencies between worldwide research objectives and disease burden, sub-Saharan Africa does not appear to have professional relationships between taking part in international research networks and producing medical research that is in line with regional health care needs.

Sampath, M., et al (2020) Doppler ultrasound was utilised to assess the inflammatory conditions in rheumatoid arthritis (RA), a systemic, life-threatening illness that affects the body's immune system. Still, radiography (X-ray) was considered to be the most effective technique for diagnosing RA. The simplest and most popular technique for diagnosing any anomalies in the human body's hard tissues is X-ray imaging. These were the study's objectives: I to segment the foot region in the entire population under study using both semi-automated and manual methods. (ii) To calculate the features derived from foot erosion, joint space narrowing, and breadth of the joint space. Both a semi-automated methodutilizing Mimics software and a conventional method (DICOM viewer) were used to analyse X-ray pictures. The statistical analysis using SPSS the sample square invasion of the big and small joints was calculated using software.

OBJECTIVE:

The goal is defined as follows, exclusive of the current study:

- To examine the publication distribution by year
- To identify the publication distribution by document
- To identify the publication distribution by language
- To identify the publication distribution by country.
- To identify the widely used reference
- To list the top 12 journal publications
- To gauge the level of teamwork
- To calculate the collaborative index
- To ascertain the authorship pattern the relative growth rate should be examined

METHODOLOGY:

The study's data came from the Web of Science database, which was used to retrieve it. This is the indexing and scientific services that Thomson Reuters maintains. The results of the fibromyalgia research were evaluated. It is possible to observe that fibromyalgia has contributed to about 4719 bibliographic records. Records from 2016 to 2020 included bibliographic information on the study, including author information, document type, and collaboration, analysis, and information visualisation. Histcite software was used to evaluate the collected data.

DATA ANALYSIS AND INTERPRETATION:

In this chapter, the researcher has provided the data that was gathered and its evaluation using a statistical computation made possible by Microsoft Excel.

Table 1: Year wise publication

S.no	Publication Year	Records	Percent	TLCS	TGCS
1	2016	911	19.3	2549	12449
2	2017	950	20.1	1938	10019
3	2018	874	18.5	1066	6543
4	2019	955	20.2	582	3252
5	2020	1029	21.7	149	1121
Total		**4719**	**99.8**	**6284**	**33384**

In total, 4719 publications on research trends on fibromyalgia were published throughout the period from 2016 to 2020 (5 years), as shown in Table 1 and the figure. The most publications (1029, or 21.7%) were published in the years 2020. 874 publications, or 18.5%, were the fewest in the years of 2018. In contrast to other years of the study period, the year 2020 had the most publications produced, but there were also fewer local and international citations.

TLCS: Total Local Citation Score

TLGS: Total Global Citation Score

Table 2: Document wise publication

S.no	Document Type	Records	Percent	TLCS	TGCS
1	Article	2932	62.1	3930	22072
2	Meeting Abstract	836	17.7	33	84
3	Review	624	13.2	2112	10177
4	Editorial Material	107	2.3	118	519
5	Letter	98	2.1	45	113
6	Article; Early Access	45	1.0	0	25
7	Correction	32	0.7	4	8
8	Article; Proceedings Paper	25	0.5	42	369
9	Review; Early Access	8	0.2	0	8
10	News Item	6	0.1	0	0
11	Article; Book Chapter	1	0.0	0	0
12	Article; Retracted Publication	1	0.0	0	9

Table 2 reveals that the type of document wise distribution of publication. It is an accepted fact that most of the scholarly communication of scientific research is published in articles 2932 (62.1%), meeting abstract 836 (17.7%), review 624 (13.2%), editorial material 107 (2.3%), letter 98 (2.1%), article yearly access 45 (1.0%), correction 32 (0.7%), article proceedings paper 25 (0.5%), review early access 8 (0.2%), news item 6 (0.1%), article book chapter 1 (0.0%), article retracted publication 1 (0.0%). As Article type of source is more it has more local and global citation.

Table 3: Author wise publication

S.no	Author	Records	Percent	TLCS	TGCS
1	Sarzi-Puttini P	68	1.4	458	661
2	Clauw DJ	67	1.4	722	1761
3	Hauser W	65	1.4	822	1435
4	Estevez-Lopez F	54	1.1	1	280
5	Delgado-Fernandez M	52	1.1	1	293
6	Segura-Jimenez V	51	1.1	0	277
7	Atzeni F	47	1.0	378	540
8	Alvarez-Gallardo IC	44	0.9	1	256
9	Gerdle B	44	0.9	62	373
10	Kosek E	38	0.8	344	880
11	Salaffi F	37	0.8	62	161
12	Aparicio VA	34	0.7	1	179

Table 3 shows the top twelve authors for the research purpose. The study revealed that the maximum publication was given by the authors Sarzi – Puttini P with 68 articles (1.4%), Clauw DJ 67 papers (1.4%), Hauser W with 65 publications(1.4%), Estevez-Lopez F with 54 publications (1.1%), Delgado-Fernandez M 52 Publications (1.1%), Segura-Jimenez V with 51 publication (1.1%), Atzeni F with 47 publications (1.0%), Alvarez-Gallardo IC and Gerdle B with 44 publications (0.9%), Kosek E with 38 publications (0.8%), Salaffi F with 37 publication (0.8%), and Aparicio VA with 34 papers published and so on. For a total of 4719 articles, 26813 authors have contributed to the study period of 2016 – 2020.

Table 4: Language wise publication

S.no	Language	Records	Percent	TLCS	TGCS
1	English	4588	97.2	6106	32910
2	German	64	1.4	101	196
3	Spanish	35	0.7	12	126
4	French	13	0.3	7	47
5	Portuguese	9	0.2	58	91
6	Czech	3	0.1	0	6
7	Turkish	3	0.1	0	4
8	Polish	2	0.0	0	2
9	Japanese	1	0.0	0	0
10	Korean	1	0.0	0	2

Table 4 List the articles that used the term "fibromyalgia" between 2016 and 2020. As seen in the table, articles have been published in a variety of languages. This is demonstrated by the fact that 4588 papers, or 97.2% of all publications, were written in English, placing them first overall. German 64 (1.4%), Spanish 35 (0.7%), French 13 (0.3%), Portuguese 9 (0.2%), Czech and Turkish for 3 (0.1%), Polish 2 (0.0%), Japanese, and Korean with one paper each are very low with these percentages. Nearly everyone in the world speaks English at some level.

Table 5: Journal wise publication

S.no	Journal	Records	Percent	TLCS	TGCS	TLCR
1	ANNALS OF THE RHEUMATIC DISEASES	243	5.1	289	473	66
2	CLINICAL AND EXPERIMENTAL RHEUMATOLOGY	213	4.5	342	641	383
3	ARTHRITIS & RHEUMATOLOGY	169	3.6	60	380	37
4	PAIN	131	2.8	461	2420	239
5	JOURNAL OF PAIN	124	2.6	258	1309	115
6	PAIN MEDICINE	114	2.4	124	638	124
7	PLOS ONE	84	1.8	0	577	144
8	CLINICAL JOURNAL OF PAIN	75	1.6	206	910	73
9	CLINICAL RHEUMATOLOGY	72	1.5	157	599	97
10	JOURNAL OF PAIN RESEARCH	68	1.4	121	511	135
11	RHEUMATOLOGY	67	1.4	116	293	70
12	EUROPEAN JOURNAL OF PAIN	66	1.4	197	647	142

Table 5 lists the top 12 journals where fibromyalgia publications have been published in avariety of document types, including articles, reviews, meeting abstracts, etc. With 243 records, the journal "ANNALS OF THE RHEUMATIC DISEASES" takes the top spot with 289 Total Local Citations (TLCS) and 473 Total Global Citations (TGCS). "CLINICAL AND EXPERIMENTAL RHEUMATOLOGY" is the second journal. "ARTHRITIS & RHEUMATLOGY" is ranked third on the list with 169 records and has 213 records overall.

Table 6: Highly cited references

S.no	Author / Year / Journal	Records	Percent
1	WOLFE F, 1990, ARTHRITIS RHEUM-US, V33, P160, DOI 10.1002/art.1780330203	1037	22.0
2	Wolfe F, 2010, ARTHRIT CARE RES, V62, P600, DOI 10.1002/acr.20140	914	19.4
3	Wolfe F, 2011, J RHEUMATOL, V38, P1113, DOI 10.3899/jrheum.100594	370	7.8
4	Clauw DJ, 2014, JAMA-J AM MED ASSOC, V311, P1547, DOI 10.1001/jama.2014.3266	366	7.8
5	Wolfe F, 2016, SEMIN ARTHRITIS RHEU, V46, P319, DOI 10.1016/j.semarthrit.2016.08.012	263	5.6
6	BURCKHARDT CS, 1991, J RHEUMATOL, V18, P728	240	5.1
7	Macfarlane GJ, 2017, ANN RHEUM DIS, V76, P318, DOI 10.1136/annrheumdis-2016-209724	235	5.0
8	ZIGMOND AS, 1983, ACTA PSYCHIAT SCAND, V67, P361, DOI 10.1111/j.1600-0447.1983.tb09716.x	227	4.8
9	WOLFE F, 1995, ARTHRITIS RHEUM-US, V38, P19, DOI 10.1002/art.1780380104	221	4.7
10	Sullivan MJL, 1995, PSYCHOL ASSESSMENT, V7, P524, DOI 10.1037/1040-3590.7.4.524	189	4.0
11	Queiroz LP, 2013, CURR PAIN HEADACHE R, V17, DOI 10.1007/s11916-013-0356-5	187	4.0
12	Woolf CJ, 2011, PAIN, V152, pS2, DOI 10.1016/j.pain.2010.09.030	175	3.7

Table 6 analyses highly cited references for fibromyalgia publications for the time period of 2016 to 2020. The most referenced article, which had a total citation score of 1037, was written by WOLFE F in 1990 and published in the journal ", ARTHRITIS RHEUM-US, Volume 33." The following most referenced article is "Wolfe F," which was published in the same journal in 2010 and has a citation score of 914. With a 2011 citation score of 370, "Wolfe F" is in third place.

Table7: Institution wise publication

S.no	Institution	Records	Percent	TLCS	TGCS
1	University Michigan	120	2.5	832	2274
2	University Granada	111	2.4	57	552
3	Harvard Med School	91	1.9	135	1037
4	Karolinska Institution	81	1.7	387	1260
5	University Washington	73	1.5	399	1021
6	Tel Aviv University	70	1.5	192	680
7	University Florida	67	1.4	165	564
8	Tech University Munich	66	1.4	824	1671
9	University Cadiz	62	1.3	34	424
10	University Jaen	62	1.3	60	335
11	Unknown	58	1.2	2	4
12	McGill University	57	1.2	464	1012

The research productivity of institutions observed is 4972, and Table 7 only includes the top 12 institutions. It is noteworthy that University Michigan ranks first in this category, having published the most articles (120, or 2.5%), followed by University of Granada, which came in second with 111 (2.4%) articles in a prior study of world scientists on fibromyalgia. The University of Harvard Medical School produced 91 (1.9%) outputs in second place throughout this research period.

Table 8: word wise publication

S.no	Word	Records	Percent	TLCS	TGCS
1	FIBROMYALGIA	2565	54.4	4708	12385
2	PAIN	1555	33.0	1878	14076
3	PATIENTS	1240	26.3	1488	6371
4	CHRONIC	798	16.9	1178	8819
5	SYNDROME	557	11.8	758	3125
6	WOMEN	358	7.6	337	1580
7	REVIEW	333	7.1	756	4054
8	TREATMENT	312	6.6	358	1977
9	CLINICAL	275	5.8	372	2122
10	SYSTEMATIC	244	5.2	536	3205
11	FATIGUE	242	5.1	240	1538
12	ANALYSIS	241	5.1	550	2588

Table 8 demonstrates that the total production of 5822 is seen in the study is 8075 over the course of the time for the key word analysis of fibromyalgia. Nonetheless, chose the top 12 words for the study. The bulk of the records with the TLCS 4708 and TGCS 12385 had 2565 (54.4%) instances of the word "Fibromyalgia" in them. “Pain" 1555 (33.0%) records with TLCS 1878 and TGCS 14076, which we obtained the second position, are in second place.

Table 9: Country wise publication

S.no	Country	Records	Percent
1	USA	1419	30.1
2	Spain	539	11.4
3	UK	493	10.4
4	Italy	362	7.7
5	Germany	303	6.4
6	Turkey	290	6.1

7	Brazil	238	5.0
8	Canada	226	4.8
9	Netherlands	186	3.9
10	Sweden	172	3.6
11	France	159	3.4
12	Australia	156	3.3

Table 9 explains the distribution of fibromyalgia papers by nation; the total number of publications found in the study between 2016 and 2020 was 4719. The findings show that the USA is regarded as the first and that it has produced 1419 (30.1%) records on fibromyalgia. It is also regarded as the most productive nation in terms of research output. Spain is in second place with 539 contributions overall (11.4%). UK, which is third on the list, has 493 (10.4%) publications to its credit. With 362 articles, Italy is in fourth place with a contribution rate of 7.7%.

Table 10: Year wise author ship pattern

Year	Single Author	Double Author	Three Author	Four Author	Five Author	Above five Author	Total
2016	55	90	122	135	140	424	966
2017	52	84	126	120	145	423	950
2018	44	82	121	127	133	367	874
2019	73	81	114	137	134	416	955
2020	43	87	116	137	120	472	974
Total	**267**	**424**	**599**	**656**	**671**	**2102**	**4719**

Table 10 displays the research output on fibromyalgia articles' authorship patterns by year. It shows that out of a single author's 267 contributions, the most publications were made in the year 2019. With 126 articles, the three authors contributed more in 2017, whereas the five authors above contributed the most in 2020 (472 articles). The year 2020 saw the lowest output from both a single author and numerous authors, with 43 articles each.

Table: 11 Degree of collaboration

Year	Single Author (NS)	Multi Author (NM)	Total number of (NS+NM)	Percentage
2016	55	911	966	0.94
2017	52	898	950	0.94
2018	44	830	874	0.94
2019	73	882	955	0.92
2020	43	931	974	0.95
Total	**267**	**4452**	**4719**	**5.00**

Table 11 displays the level of cooperation from 2016 to 2020. Collaboration is rated as 5.00. The year 2019 saw the highest amount of contribution from single author publications. The single author publication in 2020 has the lowest degree of contribution. Similar to this, 2020 saw the highest degree of input from many authors with 931 articles. The publication by many authors reached its lowest point in 2018 with 830 contributions. Here, the degree of collaboration is determined by applying Subramanian rules, and it is discovered to be 5.00.

Table 12: Exponential growth rate

S.no	Year	Number of publication	Exponential growth rate
1	2016	966	-
2	2017	950	0.98
3	2018	874	0.92
4	2019	955	1.09
5	2020	974	1.01
	Total	**4719**	**4.00**

Fibromyalgia-related literature papers have grown at an exponential rate between 2016 and 2020. The year 2019 had a high growth rate of 1.09, with 955 articles, while the following year, 2020, had 974 publications and an exponential growth rate of 1.01. It is also discovered that the study period's exponential growth rate is 4.00, and the growth rate exhibits both increasing and decreasing patterns during that time.

Table 13: Collaboration Index

Year	Total number of papers (NP)	Total number of authors(NA)	Collaboration index (NA/NP)
2016	966	5400	5.59
2017	950	5462	5.74
2018	874	4726	5.40
2019	955	5604	5.86
2020	974	5621	5.77
Total	**4719**	**26813**	**28.36**

The collaboration index is described in Table 13 for each year of the research period from 2016 to 2020. By dividing the total number of authors (NA) by the total number of publications contributed (NP) in the same year, the collaborative index (CI) is determined. The average collaboration index for the study period is 28.36.
Average Author per Paper (AAPP)

Table 14: Author productivity

Year	Total number of papers (NP)	Total number of authors (NA)	AAPP	Productivity per author
2016	966	5400	5.590	0.17
2017	950	5462	5.749	0.17
2018	874	4726	5.407	0.18

2019	955	5604	5.868	0.17
2020	974	5621	5.771	0.17
Total	**4719**	**26813**	**28.385**	**0.86**

Table 14 explains the productivity of the writers during the research period from 2016 to 2020. (Five years) The AAPP is determined by dividing the total number of contributions from authors in a given year by the total number of articles that were published during that same year. The productivity of authors decreases as the number of authors per manuscript rises. The total number of authors who contributed to the 4719 articles was 26813. The average author productivity for this AAPP is 0.86.

Table 15: Co- Author index

Years	**Single author**		**Two author**		**Three author**		**Above author**		**Total**
	NO	**CAI**	**NO**	**CAI**	**NO**	**CAI**	**NO**	**CAI**	
2016	55	100	90	103	122	99	699	99	966
2017	52	96	84	98	126	104	688	99	950
2018	44	88	82	104	121	109	627	98	874
2019	73	135	81	94	114	94	687	98	955
2020	43	78	87	99	116	93	729	103	974
Total	**267**	**497**	**424**	**498**	**599**	**499**	**3430**	**497**	**4719**

According to Table 15, the CAI for single authors decreased from 135 in 2019 to 78 in 2020. On the other hand, the CAI for double authors has increased from 103 in 2016 to 94 in 2019, which shows that the pattern of co-authorship among the article's contributions is growing. However, there is a fluctuating tendency in CAI for contributions that have several authors. And above CAI ranged from 99 to 103 over the course of the study (2016 to 2020).

Table 16: Relative Growth Rate

Year	**Total Articles**	**Cumulative Total**	**W1**	**W2**	**RGR(w2-w1)**	**Mean**	**Doubling Time**	**Mean**
2016	911	911		6.81				
2017	950	1861	6.81	7.52	0.71	1.188	0.97	1.04
2018	874	2735	7.52	7.91	0.39		1.77	

2019	955	3690	7.91	8.21	0.3		2.31	
2020	1029	4719	8.21	3.67	4.54		0.15	
Total	**4719**					**1.188**		**1.04**

Table 16 demonstrates how the rate of relative growth of the total published contribution had gradually declined. The growth rate of 4.54 in 2020 is down to 0.3 from the previous year, 2019. Between 2016 and 2020, the average relative growth rate was 1.188. The mean relative growth rate for the entire period is 1.188. In general, the proportional growth rate of fibromyalgia publications production indicates a declining tendency. The mean time between doublings from 2016 to 2020 is 1.04. The doubling time value for the entire study period is 1.04.

FINDINGS AND CONCLUSION:

Year wise publication:

The most publications, 1029 (21.7% of all publications), were released in the year 2020, with 149 Total Local Citation Scores (TLCS) and 1121 Total Global Citation Scores (TGCS), both of which were ranked first. The year 2018 saw the fewest publications (874, or 18.5%), with 1066 Total Local Citation Scores (TLCS) and 6543 Total Global Citation Scores (TGCS).

Document wise publication:

The distribution of publications by document type. It is widely acknowledged that articles make up the majority of scholarly communication of scientific research, accounting for 62.1% of all publications, followed by meeting abstracts (836, 17.7%), reviews (624, 13.2%), editorial material (107, 2.3%), letters (98, 2.1%), articles with yearly access (45, 1.0%), corrections (32, 0.7%), articles with proceedings papers (25, 0.5%), reviews with early access (eight, 0.2%), news items (6, 0.1%) There are more local and international citations as the source's article type increases.

Author wise publication:

According to the analysis, Hauser W. 65 (1.4%), Sarzi-Puttini P. 68 (1.4%), and Estevez-Lopez F. 54 (1.1%) are the next most productive authors, each contributing Clauw DJ. 67 (1.4%) articles.

`Language wise publication:

The survey finds that 4588 (92.7%) of the articles were published in the English language.

Journal wise publication:

The top 12 journals where fibromyalgia publications have been published in a variety of document types, including articles, reviews, meeting abstracts, etc. With 243 records, the journal "ANNALS OF THE RHEUMATIC DISEASES" takes the top spot with 289 Total Local Citations (TLCS) and 473 Total Global Citations (TGCS). "CLINICAL AND EXPERIMENTAL RHEUMATOLOGY" is the second journal. "ARTHRITIS & RHEUMATLOGY" is ranked third on the list with 169 records and has 213 records overall.

Highly cited reference:

The most referenced article, which had a total citation score of 1037, was written by WOLFE F in 1990 and published in the journal ", ARTHRITIS RHEUM-US, Volume 33." The following most referenced article is "Wolfe F," which was published in the same journal in 2010 and has a citation score of 914.

Institution wise publication:

The distribution of this research's publications by institutions shows that University Michigan has the most publications (120 records), with a global citation score of 2274 and a local citation score of 832. University Granada, with 111 (2.4%) articles, came in second in the prior study of fibromyalgia researchers around the world.

Word wise publication:

We found the term "Fibromyalgia" to be present in 2565 (54.4%) records with TLCS 4708 and TGCS 12385. "Pain" 1555 (33.0%) records with TLCS 1878 and TGCS 14076, which we obtained the second position, are in second place.

Country wise publication:

The findings highlight the fact that the USA is regarded as the first and has produced 1419 (30.1%) records on fibromyalgia. It is also regarded as the most productive nation in terms of research output. Spain comes in second place with a total contribution of 539 (11.4%).

Year wise authorship pattern:

With 472 contributions, the year 2020 had the largest contribution from the aforementioned five authors. The year 2020 saw the lowest output from both a single author and numerous authors, with 43 articles each.

Degree of collaboration:
The year 2019 will see the highest level of contribution from single author publications. The single author publication in 2020 has the lowest degree of contribution. Similar to this, 2020 saw the highest degree of input from many authors with 931 articles. The publication by many authors reached its lowest point in 2018 with 830 contributions.

Exponential growth rate:
The year 2019 had a high growth rate of 1.09, with 955 articles, while the following year, 2020, had 974 publications and an exponential growth rate of 1.01.

Collaborative index:
To calculate the collaborative index (CI), divide the total number of authors (NA) by the total number of papers contributed (NP) in the same year. The average collaboration index for the study period is 28.36.

Author productivity:
As the number of authors per manuscript rises, author productivity falls. The total number of authors who contributed to the 4719 articles was 26813. The average author productivity for this AAPP is 0.86.

Co-author index (CAI):
For single authors, the CAI fell from 135 in 2019 to 78 in 2020. On the other hand, the CAI for double authors has increased from 103 in 2016 to 94 in 2019, which shows that the pattern of co-authorship among the article's contributions is growing.

Relative growth rate:
From 4.54 in 2020 to 0.3 in 2019, the growth rate is decreasing. Between 2016 and 2020, the average relative growth rate was 1.188. The mean relative growth rate for the entire period is 1.188. In general, the proportional growth rate of fibromyalgia publications production indicates a declining tendency. The mean time between doublings from 2016 to 2020 is 1.04. The doubling time value for the entire study period is 1.04.

CONCLUSION:
Scientometric analysis uses statistical enumeration to assess and gauge the development of many fields of study. The increasing tendency in technology is readily visible in the research trend across the period. An effort was undertaken to publish the scientific performance measurement research on the fibromyalgia research trends between 2016 and 2020. What the current study has revealed. Scientometric analysis to compute the distribution of publications by country, authorship pattern, document type, and other metrics that can be derived in tables.

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