SCIENTOMETRIC ANALYSIS OF OASTEOARTHRITIS KNEE RESEARCH PUBLICATIONS IN USA

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ABSTRACT

This paper discusses or analyses trends in Osteoarthritis Knee research during from 2006-2010, the data have been collected from web of science database. Aim of the study to analyze source wise research output, year wise publications, and country wise research. The study finds that articles occupies first place among various forms of sources, during the study period in the year 2010 published highest research output, USA have published highest publication among the Osteoarthritis Knee, majority research papers published themes of Osteoarthritis Knee in medical field.

KEYWORDS: *Cartilage, Pain, Joint, Patients.*

INTRODUCTION :

Osteoarthritis (OA) of the knee is a condition characterized by the progressive destruction of the cartilage that lines the knee joints, the subchondral bone surfaces, and synovium; accompanied by pain, immobility, muscle weakness, and reduction in function and the ability to complete activities of daily living (ADLs). In 2005, the assessed pervasiveness of OA in any joint among grown-ups in the United States (the quantity of people who had ever been told by a specialist that they had the condition) was around 27 million cases. Predominance rates fluctuate by the joint included and the technique for ascertainment (clinical versus radiographic): symptomatically, the knee is the most often influenced joint. The predominance of OA of the knee is expanding quickly on account of moving populace socioeconomics: The essential hazard factors for OA of the knee are maturing, stoutness, earlier damage, redundant use, and female sexual orientation. The U.S. Communities for Disease Control have evaluated that the commonness of symptomatic knee OA may achieve 50 percent by the age of 85. From 2002 to 2012, the quantity of people in the US with an aggregate knee substitution (TKR) multiplied from exactly 2 million to around 4 million. The expansion in heftiness has made an interpretation of not just into an increment in occurrence of OA of the knee yet in addition into a more youthful period of beginning and requirement for treatment; thus, when people with OA of the knee achieve the time of Medicare qualification, the timeframe they have had the condition has developed, their cases are further developed, and the hazard that medical procedure will be required has expanded. Accordingly, the maturing of the Baby Boomer populace, alongside the expanded frequency and commonness of heftiness have expanded the hazard for this condition, all speaking to an expanding strain on Medicare assets. Whether a chemical reaction or physical change will occur depends on both the **enthalpy** and **entropy** of the process, which are quantities that can be calculated from tabulated data. Both terms are combined in the **free energy**-the third and most important thermodynamic term.

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OBJECTIVES

To major objectives are formulated the present study as mentioned below:

1. To examine the Osteoarthritis Knee output during the study period.
2. To study the country wise research output of Osteoarthritis Knee research.
3. To identify the authorship pattern.
4. To study the language wise and institution wise Osteoarthritis Knee research publications studies.
5. To identify the source wise Osteoarthritis Knee research publications studies.

METHODOLOGY

This study aims to analyze the trend in the development of Osteoarthritis Knee research in scientometrics. It is also focused to trace the past trends in the area of Osteoarthritis Knee research publications in scientometrics based on the sample data. The study evaluates the contribute on countries to the growth pattern and development of research productivity in this discipline during the last few decades.

DATA COLLECTION

The publication of research output on Osteoarthritis Knee research in scientometrics is obtained from various sources, such as Journals articles, Conference papers. Review, short survey, note, editorial press release, and letter. The research data required for the present study are downloaded from the web of science database. All the publications retrieved from the web of science database on Osteoarthritis Knee and scientometric cover the period from 2006-2010. Further, the researcher has downloaded the data in the form of notepad files; then the bibliographical details are converted to the form of MS-EXCEL format using the PHP (Hypertext Preprocessor) scripting language text unique data are rearranged in MS-EXCEL format to eliminate duplication from the download data. Over all data retrieved by the researcher are 2378 records for analyzing the present study.

LIMITATIONS

The findings of this study apply only to Osteoarthritis Knee studies in to the fields related to the cartilage pain, joint, patients and hip. This study covers Osteoarthritis Knee with respect to the medical field, brought under the purview of the study and no other themes. This study makes a special attention only on the performance of research output in Osteoarthritis Knee research. This study covers the years from 2006 to 2010 only.

Analysis and Interpretation

Table-1 Year wise publication Osteoarthritis Knee research

Note:TLCS: Total Local Citation Score, TGLS: Total Global Citation Score

S.NO	Publication Year	Recs	Percent	TLCS	TGCS
1	2006	416	17.5	1699	22026
2	2007	376	15.8	1210	19220
3	2008	477	20.1	964	20861
4	2009	526	22.1	547	22011
5	2010	583	24.5	132	21688
	Total	2,378	100.00		

The year wise productivity of publications in Osteoarthritis Knee research during from year 2006 to 2010 is presented in table-1. It shows that the publication of output is gradually increased and decreased trend. In the 2010 occupied first position that the output is increased (24.5%) compared to 2006 and 2010. It is clearly stated that in future the research productivity in Osteoarthritis Knee research is increasing trend.

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Table-2 Sources wise output in Osteoarthritis Knee research

S.NO	Document Type	Recs	Percent	TLCS	TGCS
1	Article	1757	73.9	3726	83088
2	Review	199	8.4	443	14766
3	Meeting Abstract	176	7.4	9	43
4	Article; Proceedings Paper	118	5.0	218	5048
5	Editorial Material	88	3.7	142	2746
6	Letter	35	1.5	13	111
7	Correction	4	0.2	1	2
8	Reprint	1	0.0	0	2

The source wise output in country level of Osteoarthritis Knee research is given in table-2. It shows that the Article is occupies first position (73.9%), second is Review (8.4%); Meeting Abstract(7.4%); Article; Proceedings Paper; Editorial Material; Letter followed by Letter; Correction; Reprint and etc.

Table-3 Authorship pattern in Osteoarthritis Knee research output

S.NO	YEAR	SINGLE	DOUBLE	THREE	FOUR	FIVE	ABOVE FIVE	TOTAL
1	2006	29	60	53	52	59	163	416
2	2007	32	36	39	80	56	133	376
3	2008	30	51	59	61	72	204	477
4	2009	43	65	64	77	66	211	526
5	2010	43	69	73	75	75	248	583
	Total	177	281	288	345	328	959	2378

The author productivity of research output is given in table-3. The authorship pattern is classified as single, double, three, four, five and above authors. It could be noted that single author contribution is dominated (177 articles) followed by double, triple authors.

Table-4 Top 10 authors in Osteoarthritis Knee research

S.NO	Author	Recs	Percent	TLCS	TLCS/t	TLCSx	TGCS	TGCS/t	TLCR
1	Felson DT	106	4.5	694	209.60	319	8708	3522.62	289
2	Hunter DJ	104	4.4	630	221.78	267	6948	3591.28	429
3	Guermazi A	93	3.9	621	193.55	222	5664	2573.27	549
4	Jordan JM	61	2.6	265	86.12	148	5097	2116.92	137
5	Eckstein F	56	2.4	440	131.15	127	2825	1261.13	501
6	Kraus VB	56	2.4	135	42.22	48	2318	1161.27	170
7	Nevitt M	49	2.1	119	52.85	56	2166	1332.33	146
8	Niu J	44	1.9	239	87.67	76	2433	1087.37	102
9	Le Graverand MPH	43	1.8	194	71.25	87	1857	925.38	217
10	Majumdar S	40	1.7	174	47.12	64	2423	1025.70	161

Table 4 shows that top 10 authors of country level of Osteoarthritis Knee research. It could be noted that the Felson DT occupied in first position (4.5%) compared to Hunter DJ second position (4.4%) followed by Guermazi A and others. Domanska U Majumdar S in last position(1.7%).

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Table-5 Top 10 Journals in Osteoarthritis Knee research

S.NO	JOURNAL	RECS	PERCENT	TLCS	TLCS/T	TGCS	TGCS/T	TLCR
1	Osteoarthritis and Cartilage	319	13.4	915	309.57	16456	8399.45	787
2	Arthritis and Rheumatism	200	8.4	746	205.48	10295	3937.25	240
3	Journal of Orthopaedic Research	64	2.7	133	39.83	3194	1342.40	114
4	Arthritis & Rheumatism-Arthritis Care & Research	62	2.6	235	79.00	4281	1512.00	98
5	Annals of the Rheumatic Diseases	58	2.4	296	94.37	3276	1635.30	115
6	Journal of Bone and Joint Surgery-American Volume	57	2.4	97	27.57	3340	1412.70	87
7	American Journal of Sports Medicine	55	2.3	113	29.90	4474	1844.10	84
8	Clinical Orthopaedics and Related Research	51	2.1	83	23.18	1977	904.78	40
9	Journal of Rheumatology	47	2.0	161	44.90	2276	786.70	59
10	Arthritis Research & Therapy	39	1.6	0	0.00	2062	1056.97	150

The Journal wise output in country level of Osteoarthritis Knee research is given in table-5. It could be noted that the Osteoarthritis and Cartilage Occupies in first position (13.4%) compared to Arthritis and Rheumatism (8.4%); third is Journal of Orthopaedic Research (2.7%%) followed by Arthritis & Rheumatism-Arthritis Care & Research, Annals of the Rheumatic Diseases, Journal of Bone and Joint Surgery-American Volume and followed by others.

Table-6 Top ten Country wise of Osteoarthritis Knee research

S.NO	COUNTRY	RECS	PERCENT	TLCS	TGCS
1	USA	2248	94.5	4296	101436
2	Germany	138	5.8	385	6238
3	Canada	133	5.6	295	7745
4	UK	104	4.4	425	7924
5	Unknown	98	4.1	93	2281
6	Australia	75	3.2	255	5477
7	Austria	71	3.0	461	3292
8	France	54	2.3	186	3830
9	Netherlands	44	1.9	165	4037
10	Sweden	40	1.7	274	4931

The country wise output in country level of Osteoarthritis Knee research is given in table-6. It could be noted that the USA is occupies in first position (94.5%) compared to Germany (5.8%); Canada (5.6%) followed by UK and etc.

Table-7 Top ten Institutions wise of Osteoarthritis Knee research

S.NO	INSTITUTION	RECS	PERCENT	TLCS	TGCS
1	Boston Univ	216	9.1	1035	15321
2	Univ Calif San Francisco	159	6.7	791	10299
3	Harvard Univ	131	5.5	492	6948
4	Duke Univ	127	5.3	219	5067
5	Univ Pittsburgh	100	4.2	288	6416

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6	Univ N Carolina	89	3.7	288	6321
7	New England Baptist Hosp	80	3.4	135	2668
8	Northwestern Univ	80	3.4	333	4483
9	Univ Iowa	78	3.3	228	4193
10	Rush Univ	72	3.0	80	2952

The Institution wise output in country level of Osteoarthritis Knee research is given in table-7. It could be noted that the is Russian Acad Sc Boston Univ. occupying in first position (9.1%); second Univ Calif San Francisco (6.7%) followed by Harvard Univ. etc.

Table-8 Word wise of Osteoarthritis Knee research

S.NO	WORD	RECS	PERCENT	TLCS	TGCS
1	Osteoarthritis	1132	47.6	2803	51914
2	Knee	1002	42.1	2385	41548
3	Cartilage	329	13.8	1246	19192
4	Pain	256	10.8	415	10613
5	Joint	233	9.8	489	10221
6	Patients	200	8.4	290	7633
7	Hip	176	7.4	274	7097
8	Articular	150	6.3	395	8115
9	Total	150	6.3	150	6089
	ARTHROPLASTY	149	6.3	119	5539

The word wise output in country level of Osteoarthritis Knee research is given in table-8. It could be noted that the occupies in first position Osteoarthritis (47.6%) compared to Knee (42.1%), Cartilage (13.8%) followed by Pain and etc.

Table-9 Languages wise of Osteoarthritis Knee research output.

S.NO	Language	Recs	Percent	TLCS	TGCS
1	English	2372	99.7	4552	105748
2	German	5	0.2	0	46
3	Portuguese	1	0.0	0	12

The language wise output in country level of Osteoarthritis Knee research is given in table-9. It could be noted that the English is occupies in first position (99.7%) compared to German (0.2%); and Portuguese (0.0%) is the last position.

CONCLUSION

It is due to the pivotal place of journal as a medium of scientific communication than any other form of publication; majority of the research output published in article in general. It could be deduced from the discussion that, during the study period the research paper publication trend is increasing and degreasing. Highest percent of publication published in 2010. Very lowest percent of research paper published in the year 2007. Conclude from the study, multi authored contributions is high compare to single authorship pattern. More papers published theme of cartilage pain, joint, patients and hip evident of country level developed chemistry field.

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