

# Significant Journals and their Countries in the Field of Sports Medicine Literature: A Bibliometric Analysis

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**Abstract** - The literature in the field of Sports Medicine and identified significant journals and their countries were studied. A total of 43727 records on 'Sports Medicine' is covered in the MEDLINE database. 50.69% of records were journal articles in this study. Bradford Law has been used for this study and found significant journals in the field of Sports Medicine. The United States is dominated in the first rank and also covered fourth to eighth ranks and tenth rank in the study. The United States with the major publications of 62.5% of output in zone-1 study, which is in the first position followed by Germany, Denmark, England, Italy, and Turkey. In zone-2 study, the United States shared 40.6% in the first position followed by England, Switzerland, and Germany etc. In zone-1 and zone-2 combined study; it shows that United States shared 42.86% followed by England in the second position, Germany and Switzerland shared the third position, the Netherlands in the fourth position, and China in the fifth position.

**Keywords:** Sports Medicine, Bradford's Law and Significant Journals

## I. INTRODUCTION

Bibliometrics is the calculation of bibliographical details and it helps in Library Science research in the past 30 years. Scientific indicators depend on publication and citation statistics and other, more Bibliometric Indicators. These types of studies help to calculate research performance of a scientific field with the help of bibliometrics. In this study, an attempt has been made to identify the significant journals in the field of Sports Medicine and also to study its place of publication.

## II. REVIEW OF LITERATURE

The studies on mapping have analyzed journal citations to determine lists of significant journals in their fields; Schloman [1] analyze the mapping the literature of allied health, Walcott [2] in diagnostic medical sonography, Smith<sup>3</sup> in dietetics, Burnham [4] in respiratory therapy, Slater<sup>5</sup> in speech-language pathology, Burnham [6] in radiologic technology, and Delwiche [7] in clinical laboratory science. Ramesh Babu and Ramakrishnan [8] studied Indian Contributions to the field of HIV/AIDS. Ramakrishnan and Thavamani [9&10] studied Hepatitis-C and Leptospirosis and Ramakrishnan, Ravisankar and Thavamani<sup>11&12</sup> studied in the Fields of Breast Cancer and Dengue Literature and found important journals in their

subjects. The review of literature on significant journal analysis shows that so far no quantitative study on "Sports Medicine" was shown. So the present study may help to identify the significant journals in the field of Sports Medicine.

## III. SPORTS MEDICINE

Sports medicine is a one of the studies of medicine which deals with physical fitness and also to treat and prevent of injuries related to sports and exercise. In some countries, Sports medicine is a recognized medical field, whereas in other countries it is a special interest area but not an actual specialty [13].

## IV. OBJECTIVES OF THE STUDY

The objectives of this study are

1. To study the quantum of literature published.
2. To identify the significant journals and its place of publications.

## V. METHODOLOGY

The records published from the year 1999 to 2018 in the field of Sports Medicine in the MEDLINE data which are covered in the PubMed [14] were searched and the details were saved as text file. The saved text file were changed into FoxPro and loaded in SPSS for the purpose of this study. The keyword 'Sports Medicine' has been used to get the number of records available in the database. The data collected from the MEDLINE database on the literary production of 'Sports Medicine' has been analysed by using bibliometric indicator such as Bradford's Law of Scattering [15].

## VI. SPORTS MEDICINE RESEARCH PRODUCTIVITY

The research productivity in the field of Sports Medicine literature is presented in Table I. A total of 43727 records on Sports Medicine literature are covered in this study. A period of twenty years i.e. 1999 to 2018 were covered. The

Year-wise distribution of literature on Sports Medicine shows that the maximum number of records (6569) was published in the year 2018, followed by 5502 in the year

2017 and 5001 in the year 2016. The whole study, it shows that from the year 1999 onward there is a steady increase of Sports Medicine research publications every year. (Fig.1)

TABLE I LITERATURE PUBLISHED IN SPORTS MEDICINE

Sl. No.	Year	Frequency	%	Cumulative %
1	1999	651	1.5	1.5
2	2000	772	1.8	3.3
3	2001	830	1.9	5.2
4	2002	924	2.1	7.3
5	2003	996	2.3	9.5
6	2004	1054	2.4	12
7	2005	1148	2.6	14.6
8	2006	1194	2.7	17.3
9	2007	1299	3	20.3
10	2008	1313	3	23.3
11	2009	1457	3.3	26.6
12	2010	1610	3.7	30.3
13	2011	1691	3.9	34.2
14	2012	1900	4.3	38.5
15	2013	2242	5.1	43.6
16	2014	3378	7.7	51.4
17	2015	4196	9.6	61
18	2016	5001	11.4	72.4
19	2017	5502	12.6	85
20	2018	6569	15	100
Total		43727	100	

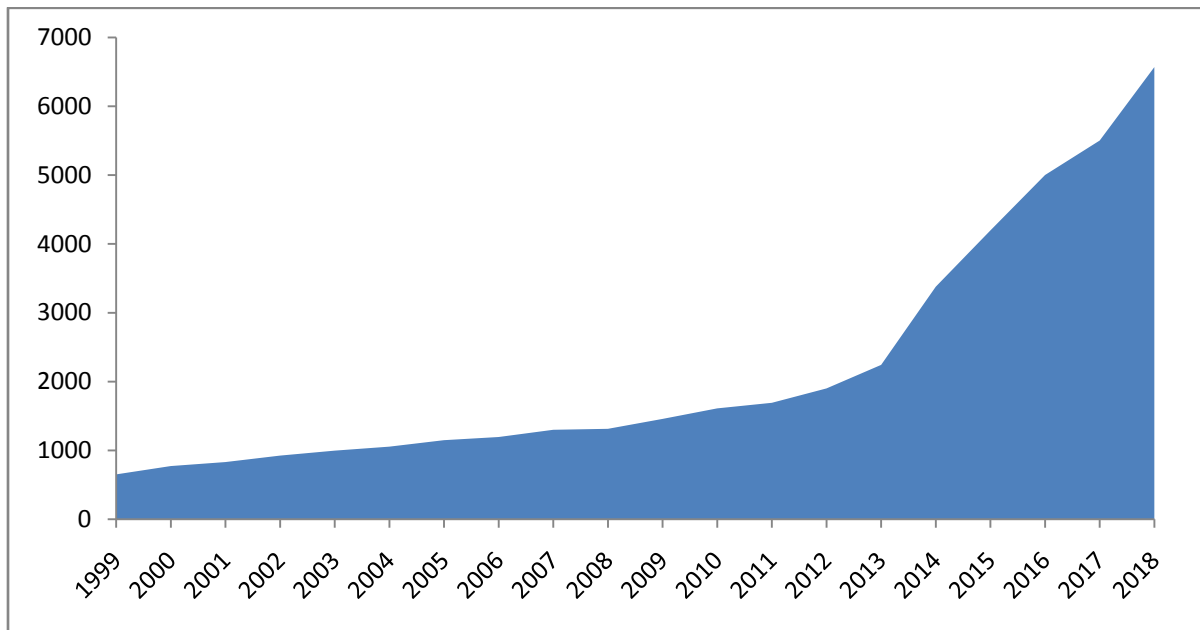


Fig. 1 Year-Wise Productivity of Sports Medicine Research

## VII. TYPES OF PUBLICATIONS IN SPORTS MEDICINE RESEARCH

The distribution of the 'Sports Medicine' research output according to various publication types of MEDLINE is given in the Table I. 50.69% of the study is journal articles, 18.37% is Research Support, Non-U.S. Gov't and 14.17% is Review. Other publication types such as Randomized Controlled Trial, Systematic Review, Editorial, Comment, Research Support, N.I.H., Extramural, Validation Studies,

Research Support, U.S. Gov't Non-P.H.S., Research Support, U.S. Gov't P.H.S., Observational Study, Letter, Case Reports, Multi-center Study, Introductory Journal Article, Published Erratum, Portrait, Meta-Analysis, Practice Guideline, News, Video-Audio Media, Congress, Overall, Retracted Publication, Interview, Twin Study, Lecture, Historical Article, Research Support, N.I.H., Intramural, Technical Report, Address, etc. is 16.77%. (Fig. 2)

TABLE II TYPES OF PUBLICATIONS IN SPORTS MEDICINE RESEARCH

Sl. No.	Type of Publication	No. of records	%	Cumulative %
1	Journal Article	22166	50.69	
2	Research Support, Non-U.S. Gov't	8031	18.37	69.06
3	Review	6196	14.17	83.23
4	Randomized Controlled Trial	1373	3.14	86.37
5	Systematic Review	1113	2.55	88.91
6	Editorial	857	1.96	90.87
7	Comment	556	1.27	92.14
8	Research Support, N.I.H., Extramural	509	1.16	93.31
9	Validation Studies	476	1.09	94.40
10	Research Support, U.S. Gov't Non-P.H.S.	313	0.72	95.11
11	Research Support, U.S. Gov't P.H.S.	310	0.71	95.82
12	Observational Study	264	0.60	96.43
13	Letter	231	0.53	96.95
14	Case Reports	204	0.47	97.42
15	Multi-center Study	203	0.46	97.88
16	Introductory Journal Article	186	0.43	98.31
17	Published Erratum	93	0.21	98.52
18	Portrait	86	0.20	98.72
19	Meta-Analysis	82	0.19	98.91
20	Practice Guideline	77	0.18	99.08
21	News	58	0.13	99.22
22	Video-Audio Media	50	0.11	99.33
23	Congress	40	0.09	99.42
24	Overall	36	0.08	99.50
25	Retracted Publication	36	0.08	99.59
26	Interview	29	0.07	99.65
27	Twin Study	27	0.06	99.71
28	Lecture	23	0.05	99.77
29	Historical Article	19	0.04	99.81
30	Research Support, N.I.H., Intramural	17	0.04	99.85
31	Technical Report	15	0.03	99.88
32	Address	14	0.03	99.92
33	Others	37	0.09	100.00
	Total	43727	100.00	

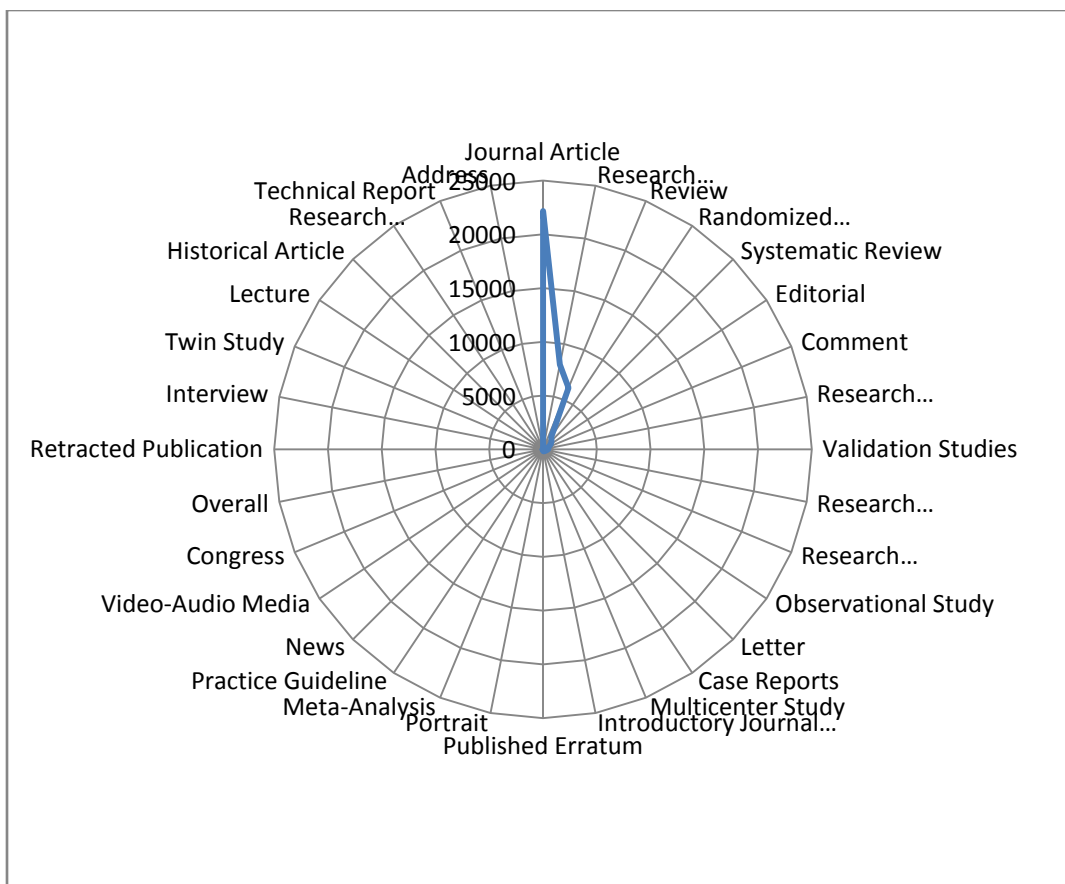


Fig. 2 Types of Publications in Sports Medicine Research

**VIII. JOURNALS DISTRIBUTION IN SPORTS MEDICINE**

In the Bradford Law, the journals covered journal articles are grouped into three zones producing a similar number of journal articles. The distribution of the journals by zone-wise is presented in the Table III. It also shows that 16 significant journals grouped in zone-1 published 7614 journal articles and produced one-third of the total output and in the second zone comprises 138 journals published in 7388 journal articles and 2532 journals published 7164 journal articles grouped in the third zone. (Fig. 3)

TABLE III JOURNALS DISTRIBUTION BY ZONE AS PER BRADFORD LAW

Sl. No.	Zone	No. of Journals		No. of journal articles	
		No.	(%)	No.	(%)
1	Zone 1	16	0.60	7614	34.35
2	Zone 2	138	5.14	7388	33.33
3	Zone 3	2532	94.27	7164	32.32
	Total	2686	100.00	22166	100.00

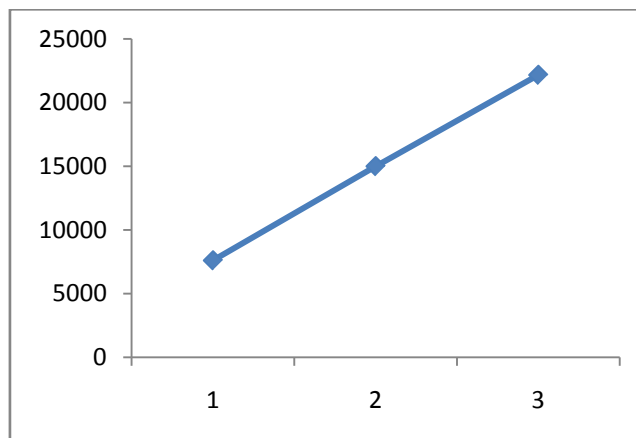


Fig. 3 Distribution of Journals by Zones

**IX. SIGNIFICANT JOURNALS IN SPORTS MEDICINE RESEARCH**

There are 154 numbers of journals covered in Zone-1 and Zone-2. Those 154 journals are recognized as significant journals in the field of Sports Medicine. Significant journals along with the country of origin based on the research publications on Sports Medicine in the study period have been presented in Table IV. There are 2686 journals that contributed 22166 journal articles in this study as per

Bradford Law. The significant journals up to ten ranks are as follows:

1. 'The American Journal of Sports Medicine' published in the United States with 1393 contributions amounting to 6.28% of total contributions.
2. 'Knee Surgery, Sports Traumatology, Arthroscopy' published in Germany with 1119 contributions amounting to 5.05%.
3. 'British Journal of Sports Medicine' published in England with 685 contributions amounting to 3.09%.
4. 'Arthroscopy: The Journal of Arthroscopic & Related Surgery' published in United States with 624 contributions amounting to 2.82%.
5. 'Orthopaedic Journal of Sports Medicine' published in the United States with 484 contributions amounting to 2.18%.
6. 'Clinical Journal of Sport Medicine' published in the United States with 405 contributions amounting to 1.83%.
7. 'Orthopaedic Journal of Sports Medicine' published in the United States with 364 contributions amounting to 1.64%.
8. 'Current Sports Medicine Reports' published in the United States with 335 contributions amounting to 1.51%.
9. 'The Journal of Sports Medicine and Physical Fitness' published in Italy with 317 contributions amounting to 1.43%.
10. 'Journal of Strength and Conditioning Research' published in the United States with 298 contributions amounting to 1.34%.

The United States is dominated in the first rank and also fourth to eighth rank and tenth rank in the first top ten journals covered in the study of Sports Medicine. But the second rank goes to Germany; the third rank goes to England and Italy in the ninth rank in this study.

TABLE IV SIGNIFICANT JOURNALS IN SPORTS MEDICINE

Sl. No.	Journal	No. of Records	%	Country
1	The American Journal of Sports Medicine	1393	6.28	United States
2	Knee Surgery, Sports Traumatology, Arthroscopy	1119	5.05	Germany
3	British Journal of Sports Medicine	685	3.09	England
4	Arthroscopy : The Journal of Arthroscopic & Related Surgery	624	2.82	United States
5	Orthopaedic Journal of Sports Medicine	484	2.18	United States
6	Clinical Journal of Sport Medicine	405	1.83	United States
7	Medicine and Science in Sports and Exercise	364	1.64	United States
8	Current Sports Medicine Reports	335	1.51	United States
9	The Journal of Sports Medicine and Physical Fitness	317	1.43	Italy
10	Journal of Strength and Conditioning Research	298	1.34	United States
11	Journal of Shoulder and Elbow Surgery	297	1.34	United States
12	International Journal of Sports Medicine	295	1.33	Germany
13	Scandinavian Journal of Medicine & Science in Sports	270	1.22	Denmark
14	Sports Health	245	1.11	United States
15	Journal of Sports Science & Medicine	243	1.10	Turkey
16	Journal of Athletic Training	240	1.08	United States
17	Arthroscopy Techniques	238	1.07	Netherlands
18	Journal of Sports Sciences	231	1.04	England
19	The Journal of Bone and Joint Surgery. American Volume	216	0.97	United States
20	The Physician and Sportsmedicine	194	0.88	England
21	Plos One	194	0.88	United States
22	International Journal of Sports Physical Therapy	165	0.74	United States
23	Journal of Science and Medicine in Sport	148	0.67	Australia
24	The Journal of Orthopaedic and Sports Physical Therapy	141	0.64	United States
25	Clinical Orthopaedics and Related Research	131	0.59	United States
26	The Journal of Knee Surgery	130	0.59	Germany

27	Frontiers in Physiology	129	0.58	Switzerland
28	Asian Journal of Sports Medicine	119	0.54	Iran
29	Muscles, Ligaments and Tendons Journal	116	0.52	Italy
30	Orthopedics	114	0.51	United States
31	Foot & Ankle International	111	0.50	United States
32	American Journal of Orthopedics	110	0.50	United States
33	Archives of Orthopaedic and Trauma Surgery	99	0.45	Germany
34	European Journal of Applied Physiology	99	0.45	Germany
35	The Journal of Foot and Ankle Surgery	96	0.43	United States
36	PM & R : The Journal of Injury, Function, and Rehabilitation	91	0.41	United States
37	Sports Medicine (Auckland, N.Z.)	89	0.40	New Zealand
38	BMJ Open Sport & Exercise Medicine	86	0.39	England
39	Journal of Pediatric Orthopedics	86	0.39	United States
40	The Journal of Arthroplasty	83	0.37	United States
41	BMJ Case Reports	81	0.37	England
42	Journal of Physical Therapy Science	78	0.35	Japan
43	Journal of Applied Physiology	77	0.35	United States
44	The Knee	75	0.34	Netherlands
45	BMC Sports Science, Medicine & Rehabilitation	74	0.33	England
46	Journal of Exercise Rehabilitation	73	0.33	Korea (South)
47	Physical Therapy in Sport	72	0.32	England
48	Clinics in Sports Medicine	69	0.31	United States
49	BMC Musculoskeletal Disorders	67	0.30	England
50	BMJ Open	66	0.30	England
51	Biology of Sport	66	0.30	Poland
52	HSS Journal : The Musculoskeletal Journal of Hospital for Special Surgery	66	0.30	United States
53	Journal of Orthopaedic Trauma	66	0.30	United States
54	Journal of the International Society of Sports Nutrition	65	0.29	United States
55	Open Access Journal of Sports Medicine	64	0.29	New Zealand
56	Journal of Human Kinetics	61	0.28	Poland
57	Scientific Reports	56	0.25	England
58	Injury	55	0.25	Netherlands
59	Cartilage	55	0.25	United States
60	Gait & Posture	55	0.25	England
61	Journal of Orthopaedic Science	54	0.24	Japan
62	Biomed Research International	53	0.24	United States
63	International Journal of Sports Physiology and Performance	53	0.24	United States
64	Clinical Biomechanics (Bristol, Avon)	51	0.23	England
65	Sports Medicine, Arthroscopy, Rehabilitation, Therapy & Technology : SMARTT	51	0.23	England
66	Sports Medicine	51	0.23	Switzerland
67	Research in Sports Medicine (Print)	49	0.22	England
68	International Orthopaedics	49	0.22	Germany
69	Drug Testing and Analysis	48	0.22	England
70	Nutrients	48	0.22	Switzerland

71	European Journal of Sport Science	47	0.21	England
72	Sports (Basel, Switzerland)	47	0.21	Switzerland
73	The Journal of Hand Surgery	47	0.21	United States
74	Journal of Orthopaedic Surgery and Research	47	0.21	England
75	Wilderness & Environmental Medicine	46	0.21	United States
76	Sports Biomechanics	44	0.20	England
77	Archives of Physical Medicine and Rehabilitation	44	0.20	United States
78	Spine	43	0.19	United States
79	BMC Public Health	42	0.19	England
80	Journal of Sport Rehabilitation	42	0.19	United States
81	Current Reviews in Musculoskeletal Medicine	38	0.17	United States
82	Military Medicine	37	0.17	England
83	JBJS Reviews	35	0.16	United States
84	Chinese Medical Journal	34	0.15	China
85	Voprosy Kurortologii, Fizioterapii, I Lechebnoi Fizicheskoi Kultury	34	0.15	Russia (Federation)
86	Pediatrics	34	0.15	United States
87	Osteoarthritis and Cartilage	34	0.15	England
88	Journal of Ultrasound in Medicine	33	0.15	England
89	International Journal of Sport Nutrition and Exercise Metabolism	33	0.15	United States
90	Journal of Biomechanics	33	0.15	United States
91	Frontiers in Psychology	31	0.14	Switzerland
92	JBJS Case Connector	31	0.14	United States
93	Journal of Electromyography and Kinesiology	30	0.14	England
94	Journal of Hip Preservation Surgery	30	0.14	England
95	Journal of Experimental Orthopaedics	30	0.14	Germany
96	Evidence	30	0.14	United States
97	Perceptual and Motor Skills	30	0.14	United States
98	Physiological Reports	30	0.14	United States
99	Lancet	29	0.13	England
100	Skeletal Radiology	29	0.13	Germany
101	Equine Veterinary Journal	29	0.13	United States
102	Dental Traumatology	28	0.13	Denmark
103	American Journal of Physical Medicine & Rehabilitation	28	0.13	United States
104	Sportverletzung Sportschaden : Organ Der Gesellschaft Fur	27	0.12	Germany
105	Asia	27	0.12	Singapore
106	The American Journal of Cardiology	27	0.12	United States
107	Applied Physiology, Nutrition, and Metabolism = Physiologie Appliquee, Nutrition	26	0.12	Canada
108	European Spine Journal	26	0.12	Germany
109	Acta Orthopaedica Et Traumatologica Turcica	26	0.12	Turkey
110	Journal of the American Veterinary Medical Association	26	0.12	United States
111	Australian Family Physician	25	0.11	Australia
112	Orthopaedics & Traumatology, Surgery & Research : OTSR	25	0.11	France
113	Pediatric Annals	25	0.11	United States

114	Pediatric Emergency Care	25	0.11	United States
115	The Spine Journal	25	0.11	United States
116	Spinal Cord	25	0.11	England
117	Zhonghua Wai Ke Za Zhi [Chinese Journal of Surgery]	24	0.11	China
118	Indian Journal of Orthopaedics	24	0.11	India
119	Frontiers in Neurology	24	0.11	Switzerland
120	International Journal of Molecular Sciences	24	0.11	Switzerland
121	Advances in Experimental Medicine and Biology	24	0.11	United States
122	Journal of Dance Medicine & Science	24	0.11	United States
123	The Journal of the American Academy of Orthopaedic Surgeons	24	0.11	United States
124	Journal of Back and Musculoskeletal Rehabilitation	23	0.10	Netherlands
125	Southern Medical Journal	23	0.10	United States
126	Journal of Sport and Health Science	22	0.10	China
127	Disability and Rehabilitation	22	0.10	England
128	European Journal of Preventive Cardiology	22	0.10	England
129	Physiotherapy Theory and Practice	22	0.10	England
130	Journal of Exercise Nutrition & Biochemistry	22	0.10	Korea (South)
131	Case Reports in Orthopedics	22	0.10	United States
132	Zhongguo Xiu Fu Chong Jian Wai Ke Za Zhi = Zhongguo Xiufu Chongjian Waike Zazhi =	22	0.10	China
133	Revista Brasileira De Ortopedia	21	0.09	Brazil
134	Brain Injury	21	0.09	England
135	Journal of Orthopaedic Surgery (Hong Kong)	21	0.09	England
136	International Journal of Environmental Research and Public Health	21	0.09	Switzerland
137	Instructional Course Lectures	21	0.09	United States
138	Oncotarget	21	0.09	United States
139	The Journal of Emergency Medicine	21	0.09	United States
140	Medicine	21	0.09	United States
141	Injury Epidemiology	20	0.09	England
142	International Journal of Cardiology	20	0.09	Netherlands
143	Manual Therapy	20	0.09	Scotland
144	Medicina (Kaunas, Lithuania)	20	0.09	Switzerland
145	Springerplus	20	0.09	Switzerland
146	Journal of the American Podiatric Medical Association	20	0.09	United States
147	Muscle & Nerve	20	0.09	United States
148	World Journal of Orthopedics	20	0.09	United States
149	BMJ (Clinical Research Ed.)	19	0.09	England
150	The Bone & Joint Journal	19	0.09	England
151	American Journal of Preventive Medicine	19	0.09	Netherlands
152	Foot & Ankle Specialist	19	0.09	United States
153	JAAPA : Official Journal of the American Academy of Physician Assistants	19	0.09	United States
154	Peerj	19	0.09	United States



*A. Journals by Country-Wise in Zones*

The distribution of journals by country of origin in zones 1 and 2 are presented in the Tables V, VI and combined of Zone 1 & Zone 2 journals in Table VII respectively.

*B. Journals by Country in the First Zone*

The United States with the major contributions, shared 62.5% of total output in zone-1 in the first position; followed by Germany shared 12.5% in the second position. The other countries like Denmark, England, Italy, and Turkey, each shared 6.25% in the third position. (Fig.4)

TABLE V JOURNALS BY COUNTRY IN THE FIRST ZONE

Sl. No.	Country of origin	Total No. of Journals	%	Cumulative Total	Cumulative %	Rank
1	United States	10	62.5	10	62.5	1
2	Germany	2	12.5	12	75	2
3	Denmark	1	6.25	13	81.25	3
4	England	1	6.25	14	87.5	3
5	Italy	1	6.25	15	93.75	3
6	Turkey	1	6.25	16	100	3
Total		16	100			

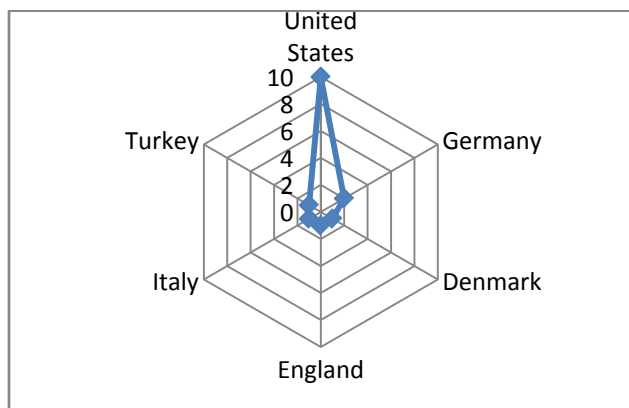


Fig. 4 Journals by Country in the First Zone

**X. JOURNALS BY COUNTRY IN THE SECOND ZONE**

The distributions of journals by country of origin in zone-2 are presented in Table VI. The United States shared 40.6% (56 journals) in the first position; followed by England shared 23.91% in second position, Switzerland shared 7.25% in third position, Germany shared 5.82% in fourth position, Netherlands shared 4.35% in the fifth position, China shared 2.9% in sixth position, Australia, Japan, Korea (South), New Zealand, and Poland each shared 1.45% in the seventh position, and Brazil, Canada, Denmark, France, India, Iran, Italy, Russia (Federation), Scotland, Singapore, and Turkey each shared 0.72% in the eighth position. (Fig.5)

**XI. COUNTRIES IN THE COMBINED OF FIRST & SECOND ZONES**

The distribution of journals by country of origin in zone-1 and zone-2 combined are presented in the Table VII. It also

shows that the United States shared 42.86% journals followed; by England shared 22.06% in the second position,

Germany and Switzerland shared 6.49% each in the third position, the Netherlands shared 3.9% in the fourth position, China shared 2.6% in the fifth position, Australia, Denmark, Italy, Japan, Korea (South), New Zealand, Poland, and Turkey each shared 1.3% in the sixth position, Brazil, Canada, France, India, Iran, Russia (Federation), Scotland, and Singapore each shared 0.65% in the seventh position. (Fig.6)

It reveals that these countries are the significant producers of literature on Sports Medicine. The trend may be understood as the research on Sports Medicine may be concentrated in these countries. Probably MEDLINE database has covered more journals published in the branch of Sports Medicine from these countries.

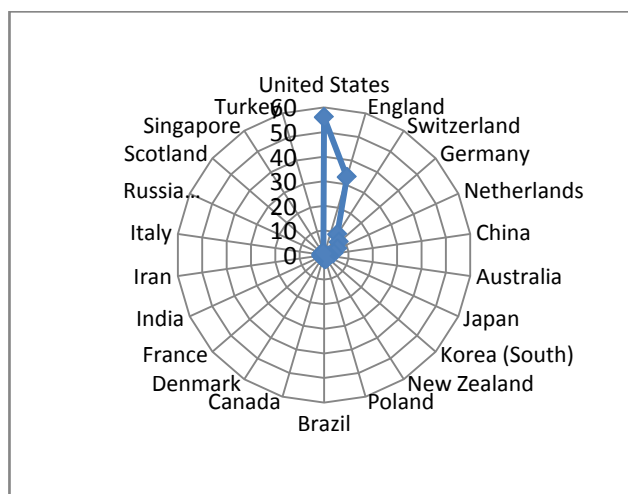


Fig. 5 Journals by Country in the Zone-2

TABLE VI JOURNALS BY COUNTRY IN THE SECOND ZONE

Sl. No.	Country of origin	Total No. of Journals	%	Cumulative Total	Cumulative %	Rank
1	United States	56	40.6	56	40.6	1
2	England	33	23.91	89	64.51	2
3	Switzerland	10	7.25	99	71.76	3
4	Germany	8	5.82	107	77.58	4
5	Netherlands	6	4.35	113	81.93	5
6	China	4	2.9	117	84.83	6
7	Australia	2	1.45	119	86.28	7
8	Japan	2	1.45	121	87.73	7
9	Korea (South)	2	1.45	123	89.18	7
10	New Zealand	2	1.45	125	90.63	7
11	Poland	2	1.45	127	92.08	7
12	Brazil	1	0.72	128	92.8	8
13	Canada	1	0.72	129	93.52	8
14	Denmark	1	0.72	130	94.24	8
15	France	1	0.72	131	94.96	8
16	India	1	0.72	132	95.68	8
17	Iran	1	0.72	133	96.4	8
18	Italy	1	0.72	134	97.12	8
19	Russia (Federation)	1	0.72	135	97.84	8
20	Scotland	1	0.72	136	98.56	8
21	Singapore	1	0.72	137	99.28	8
22	Turkey	1	0.72	138	100	8
Total		138	100.00			

**XII. COUNTRIES IN THE COMBINED OF FIRST AND SECOND ZONES**

The distribution of journals by country of origin in zone-1 and zone-2 combined are presented in the Table VII. It also shows that the United States shared 42.86% journals followed; by England shared 22.06% in the second position, Germany and Switzerland shared 6.49% each in the third position, the Netherlands shared 3.9% in the fourth position, China shared 2.6% in the fifth position, Australia, Denmark, Italy, Japan, Korea (South), New Zealand, Poland, and Turkey each shared 1.3% in the sixth position, Brazil, Canada, France, India, Iran, Russia (Federation), Scotland, and Singapore each shared 0.65% in the seventh position. (Fig.6)

It reveals that these countries are the significant producers of literature on Sports Medicine. The trend may be understood as the research on Sports Medicine may be concentrated in these countries. Probably MEDLINE database has covered more journals published in the branch of Sports Medicine from these countries.

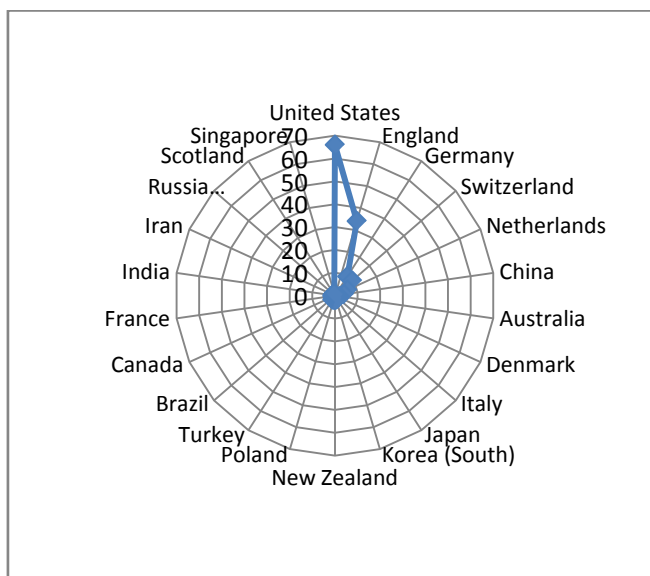


Fig. 6 Journals by Country in Zone-1 and Zone 2 Combined

TABLE VII JOURNALS BY COUNTRY IN THE COMBINED OF 1ST &amp; 2ND ZONES

Sl. No.	Country	No. of Journals	%	Cumulative Total	Cumulative %	Rank
1	United States	66	42.86	66	42.86	1
2	England	34	22.06	100	64.92	2
3	Germany	10	6.49	110	71.41	3
4	Switzerland	10	6.49	120	77.9	3
5	Netherlands	6	3.9	126	81.8	4
6	China	4	2.6	130	84.4	5
7	Australia	2	1.3	132	85.7	6
8	Denmark	2	1.3	134	87	6
9	Italy	2	1.3	136	88.3	6
10	Japan	2	1.3	138	89.6	6
11	Korea (South)	2	1.3	140	90.9	6
12	New Zealand	2	1.3	142	92.2	6
13	Poland	2	1.3	144	93.5	6
14	Turkey	2	1.3	146	94.8	6
15	Brazil	1	0.65	147	95.45	7
16	Canada	1	0.65	148	96.1	7
17	France	1	0.65	149	96.75	7
18	India	1	0.65	150	97.4	7
19	Iran	1	0.65	151	98.05	7
20	Russia (Federation)	1	0.65	152	98.7	7
21	Scotland	1	0.65	153	99.35	7
22	Singapore	1	0.65	154	100	7
Total		154	100.00			

### XIII. CONCLUSION

In the study of medicine, the results display that Sports Medicine literature is growing year after year. It also displays the maximum number of records covered by journal articles in MEDLINE in the field of Sports Medicine. The United States records on Sports Medicine literature covered maximum numbers followed by England. Further, the research productivity of Sports Medicine confirms the implications of Bradford's Law of Scattering.

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