PARKINSON'S DISEASE: A Bibliometric Profile

Mehtab Alam   Ansari [*] and
Aafreen Khan [**]

ABSTRACT

The purpose of the present study is to empirically assess, using a bibliometric approach and techniques, the growth of the literature about Parkinson's disease. Information about the leading countries, contributors, forms,, languages, core journals etc is traced. The data from Index Medicus (Volume 2002-2004) is analysed and results discussed .

Keywords: Bibliometrics; Parkinson's disease; literature Growth

INTRODUCTION

Credit goes to Allan Pritchard for coining the term 'Bibliometrics' late in 1960s. However, the term gained more popularity during 1980s. Bibliometrics is a relatively new branch of information science. It is a quantitative study of various aspects of literature on a theme to identify the pattern of publication, authorship, citation and/or secondary journal coverage, with the objective of getting an insight into the dynamics of the growth of knowledge in the areas under consideration. **(Pritchard, 1969).**

Encyclopedia Britannica Concise comments on Parkinson's disease as a neurological disorder that causing progressive loss of control of movement. **(Parininsonism, 2008).** However, MedlinePlus Medical Encyclopedia comments on Parkinson's disease, as a disorder of the brain that leads to shaking (tremors) and difficulty with walking, movement, and coordination. **(Parkninson's** Disease, 2008 a

In view of National Library of Medicine and the National Institutes cf Health, Parkinson's Disease (2008 b) it is a disorder that affects nerve cells, or neurons, in a part of the brain that controls muscle movement. In Parkinson's

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[*] Lecturer , Department of Library Science , AMU , Aligrah, UP
[**] Assistant Librarian, Ideal Institute of Technology , Noida , UP

disease, neurons that make a chemical called dopamine either die or do not work properly.

The present study aims at identification and description of some of the characteristics of the literature published on Parkinson's disease over the period of three years, 2002 - 2004 with a view to find literature growth, distribution on different indicators.

LITERATURE REVIEW

Potter (1988) presents a simple explanation Lotka's , Bradford's and Zipf's Laws, aiming at a general library audience. He emphasises the practical use of the laws in librarianship. **Farideh (1996)** discusses the history of bibliometrics, along with the development of the field and good definitions of commonly-used terms and techniques in the respective field.   **Kader, Ojasoo and et al. (1998)** in their study have devised new ways of calculating and representing hierarchical author networks that depict relationships among authors in a more exhaustive and less equivocal manner than most available automatic analyses. **Das (2000)** in his study analyses selection of core journals, subject classes, treatment styles that have been carried out along for the study with the authorship patterns and citation patterns. **Jones, Hanney, Buxton and Rippon (2005)** identifies the papers, and publishing journals, describing psychiatry, surgery and paediatrics research funded by the National Health Service (NHS) in the UK and found that in each specialty many papers publish NHS-funded research and they out-number the non-NHS papers. They appear in a wide range of journals but in each specialty one journal is clearly the most used one. It reports that the impact factors of journals publishing the most NHS research vary considerably. In each specialty the journal containing most NHS publications is widely perceived to be important by clinicians .**Roa-Atkinson and Velho (2005)** analyses the dynamics of research groups in knowledge production in an interdisciplinary research field in two scientifically peripheral countries (Colombia and Brazil). The study allowed the construction of some indicators: channels of publication, impact of the research outputs, citations and patterns of collaboration. **Falagas , Papastamataki and Bliziotis (2006)** estimated the research productivity of the different world regions in the field of Parasitology over a nine year period, which

clearly revealed that Western Europe rank first in the research production whereas. US.A and Latin America and the Caribbean rank 2nd and 3rd respectively.

METHODOLOGY

The source selected for the data collection is *Index Medicus*. From the three volumes of *Index Medicus* (2002-2004) references on the subject "Parkinson's Disease" were collected. Later all items arranged on cards and data analysed as per the objectives of the study on various indicators to reveal results . The data was anlysed, tabulated and interpreted to achieve the objectives.

RESULTS and DISCUSSION

The data cumulates to 2030 documents on the subject for the period. These documents are found to be published in 338 periodicals which rank up to 29 positions. A total of 161 periodicals with frequency of two are analysed only and leaving those with less than two frequency. It reveals that '*Mov Disord*' rank first accounting 10.18% of total collection. Next four positions are secured by "*Neurol Sci*" (8.39%), "*Parkinsonism Retale Disord* (6.90%), *Neurology* (5.56%) and *J. Neurol* (4.96%) respectively.(Table 1)

The ranking list may be useful for the libraries in taking policy decision on subscription of periodicals on 'Parkinson's Disease' and allied fields . It will equally prove fruitful for preparing an exhaustive bibliographical or documentation list.

Table 1:Top Ten Journals

Rank	Name of Periodicals	Country	Frequency
1	Mov Disord	U.S.A.	205(10.18)
2	Neurol Sci	U.S.A.	169(8.39)
3	Parkinsonism Retale Disord	U.S.A.	139(6.90)
4	Neurology	U.S.A.	112(5.56)
5	J. Neurol	U.S.A.	99(4.91)
6	Adv Neurol	U.S.A.	98(4.86)
7	Neurol Neurosurg Psychiatry	U.K.	92(4.57)
8	Am Neurol	U.S.A.	86(4.27)
9	Neurosci litt.	Ireland	35(1.73)
10	Arch Neurol	U.S.A.	33(1.63)

*Figures in parentheses indicate %age.

Geographic Distribution

Thirty four countries contribute to 'Parkinson's Disease'. It is observed that 65.07% of the total articles are published from USA followed by U.K., Ireland, Spain, Germany, Switzerland amounting to 12.12%, 2.88% and 2.38% respectively while Switzerland, Poland, Russia, Japan, Netherlands and Denmark produce less than 2% of the total literature produced.(Table 2).

TABLE 2: Geographic Distribution

Rank	Name of Periodicals	Frequency
1	U.S.A	1310(65.07)
2	U.K.	194(12.12)
3	Ireland	58(2.88)
4	Spain	48(2.38)
4	Germany	48(2.38)
5	Switzerland	35(1.75)
6	Poland	29(1.44)
7	Russia	28(1.39)
8	Japan	26(1.29)
9	Netherlands	25(1.24)
10	Denmark	24(1.19)

* Figures in parenthesis indicate percentage.

Subject Distribution

Table 3 lists the subject distribution of the articles. Usually, a large number of articles are published in the journals specific to the subject. Nevertheless, some material is also available in the periodicals having related areas. It shows that highest number of items i.e. 640 (31.79%) fall under 'MEDICAL SCIENCE-PSYCHIATRY AND NEUROLOGY'. The second, third, fourth and fifth positions are occupied by 'MEDICAL SCIENCE', 'MEDICAL SCIENCE-RADIOLOGY AND NUCLEAR MEDICINE', GERONTOLGY AND GERIATRICS, and MEDICAL. SCIENCE-GERONTOLOGY, with 433 (21.51), 282 (14.00), 200 (9.93%) and 155 (7.69%) items respectively.

Table 3:SUBJECT DISTRIBUTION

Rank	Subject Area	Frequency
1	Medical Science- Psychiatry and Neurology	640(31.79)
2	Medical Science	433(21.51)
3	Medical Science- Radio logy and nuclear Medicine	282(14.00)
4	Gerontology and Geriatrics	200(9.93)
5	Medical Science- Gerontology	155(7.69)
6	Medical Science- Experiment, Medicine Laboratory Technology	122(6.06)
7	Biology Aging	79(3.92)
8	Biology- Cytology and histology	51(2.52)
8	Biochemistry	51(2.53)
	Total	2013

*Figures in parentheses indicate %age

Indexing Distribution

Currency of information is an important factor for any good indexing and abstracting service. The chronological analysis of papers show   occurrence of items in the volume of 2002, 2003 and 2004 are 968, 520 and 525 respectively. However, the total percentage of frequency of occurrence of items in three volumes of Index Medicus is the highest(36.46%) in 2002. It is followed by 2004, 2001, 2003, 2000 and 1999 having 26.08%, 20.76%, 16.09 and 0.24% respectively .(Table 4).

Table 4:Indexing Distribution

S. No.	year of publication	Frequency			Cumulative Frequency
		Volume 2002	Volume 2003	Volume 2004	
1	1997	3	-	-	3(0.14)
2	1998	1	-	-	1(0.04)
3	1999	3	-	-	3(0.14)
4	2000	5	-	-	5(0.24)
5	2001	418	-	-	418(20.76)
6	2002	538	196	-	734(36.46)
7	2003	-	324	-	324(16.09)
8	2004	-	-	525	525(26.08)
	Total	968	520	525	2013

*Figures in parentheses indicate %age

Language distribution

It is always useful for the researchers and information scientists to know the language in which material in their area of specialization is published. The study highlights the most dominant languages in which the literature on the subject is being produced. Out of 2013 items, 1628 (80.87%) are published in English language.. The second and third favourite language is Irish and Spanish with 58 (2.88%) and 48 (2.38%) items respectively, while Germany is placed in the fourth position with 48 (2.38%) papers followed by Swiss, polish and Russian languages respectively.(Table5)

Table 5: LANGUAGE DISTRIBUTION

Rank	Language	Frequency
1	English	1628(8087)
2	Irish	58(2.88)
3	Spanish	48(2.38)
3	German	48(2.38)
4	Swiss	35(1.73)
5	Polish	29(1.44)
6	Russian	28(1.39)
7	Japanese	26(1.29)
8	Danish	24(1.19)
9	French	22(1.09)
10	Portuguese	15(0.74)

*Figures in parentheses indicate percentage

Form of Contribution

The literature on the subject is published in many different forms.The study reveals that 1817 items(90.26%) are published in the form of articles and shows that it as the most vital media of communication among scientists. The next four popular forms are abstracts, 93(4.61%),letters 68(3.37%) , editorials 18(0.89 %) and News 17 (0.84%).

Table 6:Form of literature

Rank	Form	Frequency
1	Articles	1817(90.26)
2	Abstracts	93(4.61)
3	Letter	68(3.37)
4	Editorial	18(0.89)
5	News	17(0.84)

*Figures in parentheses indicate percentage

Ranking Authors

In every field, it is significant to know the eminent scientists who contribute in their respective fields. Table 7 summarizes the individual contributions of authors which reveals that 483 (23.99%) articles are written by single authors while 1513 (76.00%) are multiple authors contributions. This shows the growing trend of collaboration in research . Although this study is not sufficient to know the major contributors exactly yet the present ranking list may be of help to known the significant authors in 'Parkinson's Disease'. . The table lists the ten most productive authors , giving weightage to first author only, as Index Medicus does not reveal authors other than first.

Table 7: Author Ranking

Rank	Name of Author	Frequency
1	Muller, T.	12
2	Triarhou, L.C.	7
2	Tan, E.K.	7
3	Jellinger, A.K.	6
3	Happe, s.	6
3	Aarsland, D.	6
3	Stocchi, F.	6
4	Antonini, A.	5
5	Krygowska wajs A	4
5	Korcyn, A.D.	4

CONCLUSION

Following major findings are revealed from the study:

a) The journal 'Mov Disord' published (U.S.A.) is the most productive publication reporting 205 items(1018%), followed by 'Neutral Sci' (US A) with 169 articles (8.39%) and 'Parkinsonism Retal Disord' (U.S.A) with 139 papers(. 6.90%).

b) The literature on "Parkinson's Disease" is published from 34 countries. U.S.A. is the leading country with 1310 items(. 65.07%)s followed by U.K. and Ireland with 244 (12.12%) and 58 (2.88%) items respectively.

c) It is revealed that 640 (31.79%) items belong to the subject 'Medical Science(Psychiatry and Neurology) followed by allied fields like subject Medical science- Radiology and Nuclear Medicine with 4.333 (21.51%) and 282(14.00%) items respectively.

d) English is the favourite language used by the contributors, as 1628 (80.87%) documents on the subject have published in English followed by Irish and Spanish with 58 (2.88%) and 48 (2.38%) items respectively.

e) Articles are the most popular form of documents used by scientists (90.26%) followed by Abstracts and Letters contributing 4.61% and 3.37% items respectively.

f) Joint authorship is found to the most popular in the field, indicating wide collaboration in the subject. The three highest ranked authors are.:

    (i)   Muller, T (12 items)

    (ii) Triarhou LC (7 items)

    (iii) Tan, E.K. (7 items)

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