

INDIAN CONTRIBUTION IN NEW ENGLAND JOURNAL OF MEDICINE: A BIBLIOMETRIC STUDY

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ABSTRACT

The study presents the Bibliometric analysis of articles contributed by Indian authors and published in New England journal of Medicine during the period of 2006-2010. A total of 2490 articles were published during these years, out of this 34 articles were contributed by Indian authors. The study attempts to highlight the distribution of articles, year wise authorship pattern, year wise Impact factor of articles, year wise distribution of length of articles, Gender wise distribution of articles, year wise distribution of references of articles, contribution according to thrust areas and state wise distribution of articles.

Keywords: Bibliometrics, Citation analysis, Indian contribution, New Edngland Journal of Medicine, Scopus.

INTRODUCTION

Bibliometric techniques are being used for a variety of purposes like determination of various scientific indicators, evaluation of scientific output, selection of journals for libraries and even forecasting the potential of a particular field (Zafrunnisha 2012).The word bibliometrics was originated from the combination of two Latin and Greek words i.e. 'biblio' and 'metrics', which means the application of mathematics to the study of bibliography. Bibliometric analysis tools are used to study the properties and behaviour of recorded knowledge for analysis of structures of scientific and research areas and for evaluation of research activities (Patra et al. 2006).Bibliometric research uses various methods of citation analysis to establish relation between authors and their work thus provide a system to assess and analyze the quality of research.

The New England Journal of Medicine (NEJM) is a peer-reviewed medical journal published by the Massachusetts Medical Society. It is one of the oldest continuously published medical journals in the world (Altman 1991).The authors have chosen NEJM as it is the most widely read, cited, and influential general medical periodical in the world. According to SCImago (a portal that includes the journals and country specific indicators developed from the information contained in the Scopus® database) (Leydesdorff 2009), it has H index of 589

that makes it one of the prestigious journal in the field of medicine.

In India, medical education has remained more or less static, and research is in a very poor state (Deo 2008), but recently Indian government have taken some initiatives by boosting money for creation of better research facilities in India. In this context, this study covers Indian authors contribution from 2006-2010 (volume 354 to 363). In the present study, Scopus citation database has been used. Scopus is one of the comprehensive abstract and citation databases of peer-reviewed literature and quality web sources. As per Scopus citation database, there are 34 articles published in the New England Journal of Medicine from 2006 to 2010 by Indian authors. The collected data have been analyzed and is presented in the form of tables and figures

OBJECTIVE OF THE STUDY

The main objectives of this study are:

- To examine the Indian representation in Medical literature produced in New England Journal of Medicine during the period of 2006-2010
- To analyze year wise distribution of length of articles.
- To assess year wise authorship pattern
- To analyze frequency distribution of references
- Citation analysis
- To inquest Frequency distribution of concentrated thrust area as adopted by Indian contributors
- To checkout Gender wise distribution of articles
- To monitoring State wise distribution of articles

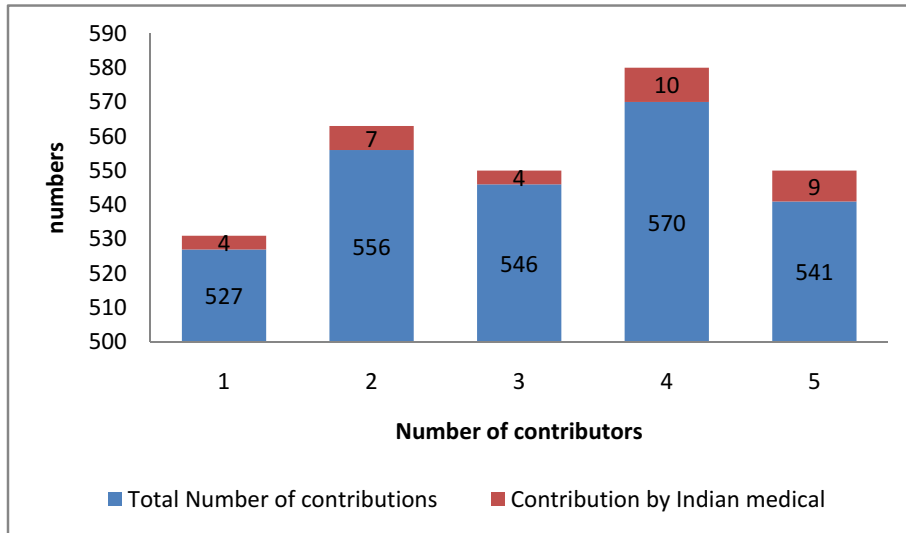
DATA COLLECTION AND INTERPRETATION

Table 1 and Figure 1 showed Indian representation in Medical literature produced in New England Journal of Medicine during the period of 2006-2010. It depicted that in the year 2006 there are 4 articles contributed by Indian authors out of 527 articles which is 0.76 % after that in the year 2007 this ratio was increased to 1.26 % and in 2009 it was 1.75 %. Overall from the year 2006-2010 the percentage of articles contributed by Indian authors was 1.37 %.

Year	Total Number of contributions	Contribution by Indian authors	%age
2006	527	4	0.76
2007	556	7	1.26
2008	546	4	0.73
2009	570	10	1.75
2010	541	9	1.66
Total	2490	34	1.37

Table1: Indian representation in Medical literature produced in New England Journal of Medicine: A frequency distribution

Figure 1



Contribution by Indian authors: A frequency distribution

Table-2 categorized the reviews according to their page length. This table had revealed that total 9 electronic articles were published during the period under consideration (26.47%). Among simple pagination articles 13 articles have length between 9-12 pages that is 38.24 % and 8 articles length are between 1-4 pages i.e 23.53 %.

1.	Year wise distribution of Simple pagination						
Pages	Year					Total	%age
	2006	2007	2008	2009	2010		
1-4	3	1	-	2	2	8	23.53
5-8	1	-	-	-	-	1	2.94
9-12	-	1	2	5	5	13	38.24
13 & More	-	-	2	1	-	3	8.82
Total	4	2	4	8	7	-	-
2.	Year wise distribution of Electronic articles						
	2006	2007	2008	2009	2010	Total	%age
	-	5	-	2	2	9	26.47

Table2: Length of articles by Indian contributors to New England Journal of Medicine

Table 3 analyzes authorship pattern of articles under consideration. In this table all the articles were divided into 8 categories i.e. single author, two authors, three authors, four authors, five authors, six authors, seven authors and eight or more authors (Figure 2). It revealed that in 2007, 5 articles were two authored, in 2009, 6 articles were 8 & more authored.

Authorship	Year					Total	%age
	2006	2007	2008	2009	2010		
Single	-	1	-	-	1	2	5.88
2 authors	3	5	-	4	3	15	44.12
3 authors	-	-	-	-	-	0	-
4 authors	-	-	-	-	-	0	-
5 authors	-	1	-	-	1	2	5.88
6 authors	-	-	-	-	-	0	-
7 authors	-	-	-	-	-	0	-
8 authors & more	1	-	4	6	4	15	44.12
Total	4	7	4	10	9	34	-
%age	11.76	20.59	11.76	29.41	26.47	-	-

Table 3: Year wise authorship pattern of articles

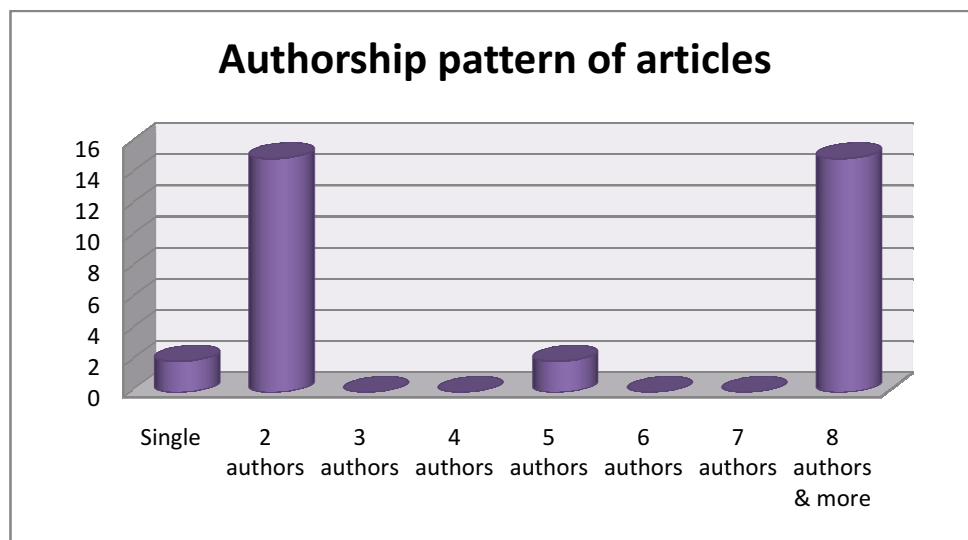


Figure 2 Year wise authorship pattern of articles

Table 4 categorizes articles according to frequency distribution of references. It clearly showed that total 445 references were there in articles under consideration during 2006-2010. This analysis revealed that there is a constant increase in the number of references every year (Figure 3).

Year	Total Reference	%age
2006	13	2.92
2007	29	6.52
2008	112	25.17
2009	144	32.36
2010	147	33.03
Total	445	100

Table 4: Frequency distribution of references in New England Journal of Medicine.

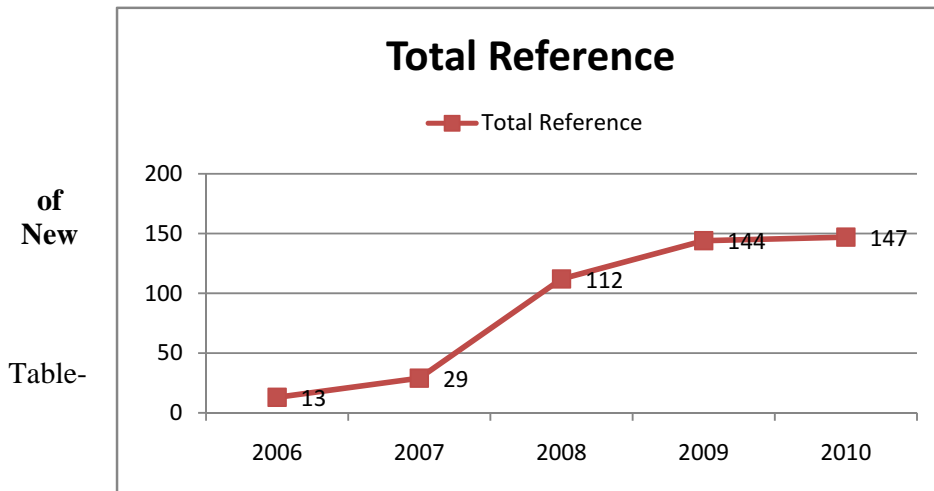


Figure 3:
 Frequency distribution references in England Journal of Medicine

Table-

5 revealed the number of citations of articles under

consideration. The references provided by the authors at the end of their articles are the basis of citation analysis. Citation traces a connection between two documents, one which cites and the other which is cited. All articles were divided into 10 categories. This table indicated that the impact factor of publications are very low.

No. of citations	Year				
	2006	2007	2008	2009	2010
Zero	3	5	-	4	4
1-20	-	1	-	-	-
21-40	-	-	-	1	1
41-60	1	-	-	-	2
61-80	-	-	1	-	-
81-100	-	-	-	-	-
101-200	-	1	1	3	2
201-300	-	-	2	-	-
301-400	-	-	-	-	-
Above 400	-	-	-	2	9

Table 5: Citation analysis

Table 6 categorized articles on the basis of concentrated thrust area as adopted by Indian contributors. For this study top 10 thrust areas were selected.

Thrust Areas	Year					Total
	2006	2007	2008	2009	2010	
Article	4	7	4	10	9	34
Human	4	7	4	10	9	34
Priority Journals	4	7	4	10	9	34
Humans	-	-	4	6	5	15
Male	3	5	3	8	6	25
Female	1	3	4	6	5	19
Adult	3	7	4	7	7	28
Case Report	3	5	-	3	4	15
Controlled Study	1	1	3	5	4	14
Middle Aged	-	-	3	4	4	11

Table 6: Frequency distribution of concentrated thrust area as adopted by Indian

contributors

Table 7 describes gender wise distribution of articles. It reveals that male contribution is more than female contribution. Out of all articles written by Indian authors, 73% were by male authors and only 27 % of articles were from female Indian authors.

Gender	No. of contributors	%age
Male	64	73
Female	24	27
Total	88	100

Table 7: Gender wise distribution of contributors

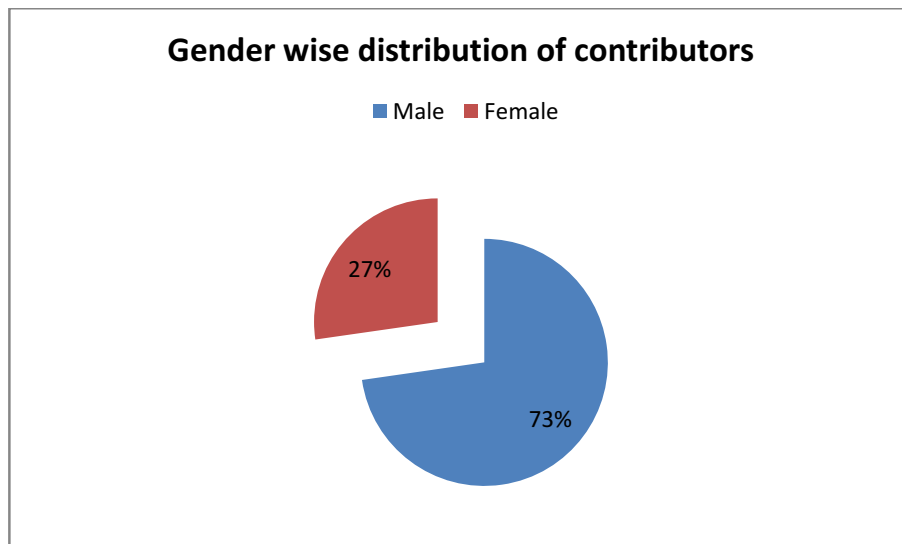


Figure 4: Gender wise distribution of contributors

Table 8 monitors State wise distribution of articles. It divides articles under study into 7 categories. Interestingly, it indicated that maximum authors were affiliated to New Delhi (Figure 5).

Sr. No.	Name of the State	No. of contributor's affiliations
1	New Delhi	10
2	Maharashtra	7
3	Chennai	6
4	Bihar	4
5	Bangalore	4
6	Chandigarh	3
7	Utter Pradesh	3

Table 8: State wise distribution of contributor's affiliation

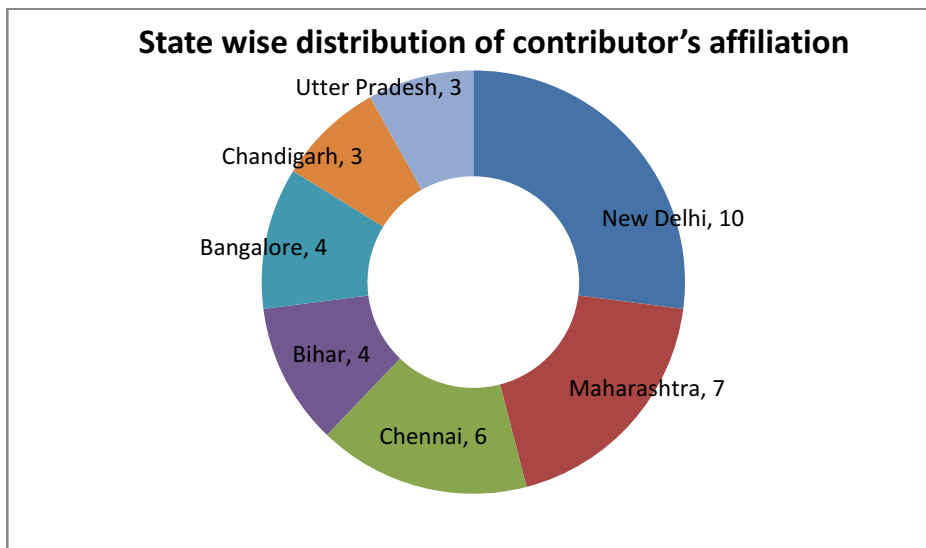


Figure 5: State wise distribution of contributor's affiliation

DISCUSSION

The New England Journal of medicine is reputed journal in the field of Medine. It has passed a long journey starting from 1812 till today (200 years). NEJM's influence has grown to an international scale. More than 600,000 people in 177 countries read it each week. *NEJM* provides delayed free online access to its research articles (it does so six months after publication, and maintains that access dating back to 1990) (Campion 1996). This delay does not apply to readers from the least developed countries, for whom the content is available at no charge for personal use. One very significant feature of the NEJM is its multimedia content. *NEJM* also has two podcast features, one with interviews of doctors and researchers that are publishing in the journal, and another summarizing the content of each issue. Other offerings include Continuing Medical Education, Videos in Clinical Medicine (showing videos of medical procedures), and the weekly Image Challenge.

This study revealed the Indian contribution in this journal during last five years. This study highlighted the current poor scenario of research in India as during the period under consideration only 34 articles were contributed by Indian authors, which makes only 1.37% of portion out of 2490 published articles. However, it has poured light on a brighter aspect also that there is a constant increase in Indian contribution. Authorship pattern analysis showed that maximum articles were either 2 authored or compromised by 8 or more authors. Frequency distribution of references has also showed a constant increase in number i.e. from 2.92% of year 2006 to 33.03% of year 2010. Citation analysis has also strengthened the hypothesis of recent change in research status as there was a significant increase in number of articles having 400 and above citations in year 2010. Frequency distribution table of concentrated thrust area revealed that adult studies are the major thrust area adopted by Indian contributors followed by case reports and controlled studies. State wise distribution table showed that main contribution is concentrated at north and west regions of the country. There is no contribution from eastern regions of the country which is alarming and a matter of concern.

CONCLUSION

The popularity in the use of bibliometric techniques in various disciplines stimulated stupendous growth of literature on bibliometric and its related areas. The above study has elucidated the variety of bibliometric measures which can be useful for understanding various aspects (Ramkrishnan and Babu 2007; Khaparde 2011). Aim of this study was to measure and track the changes in research scenario in recent times in India, so that all are informed and research facilities can be enhanced. This study has proved that there is a constant increase in contribution by Indian authors in NEJM in recent years. This study also highlighted that male contribution is significantly higher than female contribution, thus there is an urgent need to encourage female contributors to take an active participation. Further, to gain contribution from eastern regions of the country, there is a need to take some serious initiatives. On the basis of this study we can conclude that if these remedial measures can put into action then the future of Indian research will be very bright.

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