

IndMed : An Evaluative Study on the Coverage of Indian Medical Literature

N. Subramanyam^{1*}, M. Krishnamurthy² and A. Y. Asundi³

¹Senior Librarian, M. S. Ramaiah Medical College, Bangalore - 560054, Karnataka, India

²Associate Professor, DRTC, Indian Statistical Institute, Bangalore - 560059, Karnataka, India

³Former Professor and Chairman, DLISc, Bangalore University, Bangalore - 560056, Karnataka, India

Abstract

India has the legacy of Susrutha and Charaka, its ancient medical practitioners but the scholarly literature on modern medicine is scanty. The bibliographic work carried out by Dr John Shaw Billings is unmatched. Due to his contribution the Index Medicus (now-MEDLINE) stands as the most important database of biomedical literature. The services of MEDLINE were extended to all countries over the years and India had its services through MEDLARS Centre at NIC. The coverage of Indian medical literature in MEDLINE was not comprehensive and this affects visibility of Indian medical research output. So Indian Council of Medical Research (ICMR) launched IndMed and MedInd. There are no studies investigating the coverage, the services and the gaps in coverage of IndMed. This study seeks to assess the extent of Indian medical journals covered by the IndMed comparing the list of medical and allied sciences journals covered by Indian Science Abstracts. Suggestions are made as to how the IndMed can improve its coverage.

Keywords: IndMed, Indian Medical Journals, Indian Science Abstracts

1. Introduction

The science of cure and human health has a long historical tradition, both in the West and East. The great legends like Hippocrates from West and Susrutha and Charaka, and Dhanvantri from India, are still remembered. This shows the contribution to the profession by these people and also the fact that medical literature has a very long history tradition.

In the modern era the contribution of Dr. John Shaw Billings would be remembered for the magnitude of bibliographic work done by him during his tenure as Director of NIH and of Surgeon General's Library of US Army. His contribution today is reflected in MEDLINE. Today MEDLINE and PubMed are the most comprehensive biomedical databases in the service of health science professional- in education, teaching, research and practice. It has spread to several countries and with the advent of WWW and the Internet, the services have become worldwide and have been widely perceived as unique service in the area of bibliographic control of scholarly biomedical literature. The services of MEDLINE are well known among medical professionals and have

been subjected to continuous evaluation to improve their services. A number of countries took initiative to start MEDLINE-based services and India started the Medlars Centre under National Informatics Centre from 1986 to 2009. Now since the MEDLINE services are available on demand through the E-resources networks, and the MEDLARS Centre at NIC was discontinued. In order to supplement the MEDLINE coverage of Indian medical literature the Indian Council of Medical Research started a new service called IndMed supported by MedInd for full text. The IndMed has been in operation for nearly a decade now and no study to assess its coverage of Indian scholarly medical literature has been attempted so far. So an attempt is made here to evaluate the coverage of Indian publications by IndMed. In this context the Medical Sciences journals covered by the Indian Science Abstracts (ISA) is taken as the base data. This is also compared with the coverage by MEDLINE. The data from ISA, from IndMed and MEDLINE is accessed from respective Websites and a detailed analysis of the same is made. The study also makes some suggestions to improve the coverage of IndMed.

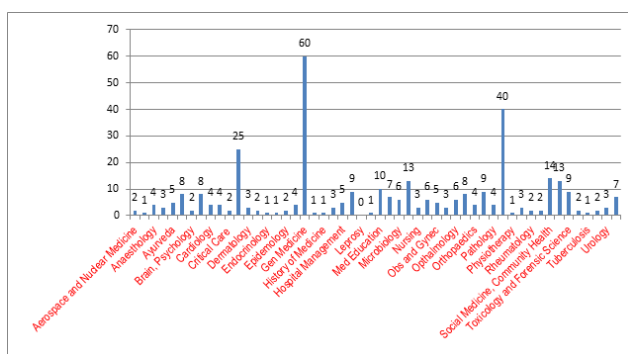
*Author for correspondence

2. Coverage of Number Titles by ISA, IndMed and MEDLINE

The Table 1 shows the number of journal titles in medical sciences covered by ISA, IndMed and Medline based on the data available on their websites¹⁻³.

Table 1. Indian Medical Science journals in ISA, IndMed, MEDLINE

Service	ISA	IndMed	IndMed in ISA	Medline
No. of Titles	358	110	68	25
Percentage	21.6	30.72	18.99	7
Percentage				(0.44)



Graph 1. Graph showing the subject covered by 358 biomedical Journals by ISA.

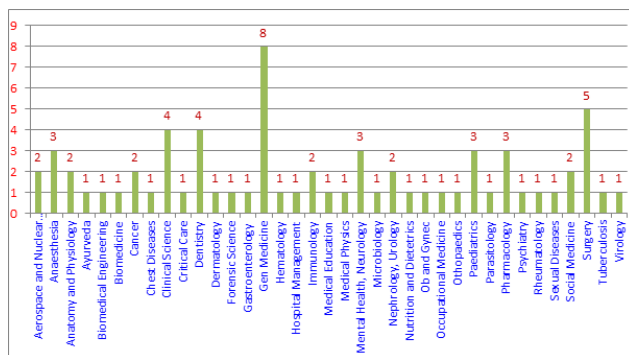
The Indian Science Abstracts (ISA) is a well-known abstracting service in science published since 1965 and is now available for Online Access⁴. The total number of journals indexed in ISA is 1605 out of which 358 titles belong to medical sciences which amounts to 21.6% of the total. The IndMed has listed 110 Indian Medical Journals⁵ of which the ISA covers only 68 titles which are 18.99% of the total medical science journals covered by the ISA from the IndMed. The Medline shows coverage of 45 medical science journals as retrieved from a search. Five of these are of foreign origin even though published by Indian publishers. Only 25 out of remaining 40 journals of Medline are covered in ISA, which comes to 7% of the total medical science journals (358 numbers) covered by ISA. The number of journals indexed by the Medline is 5630 as of July 2016⁶. This means that the Indian medical science journals covered in Medline is only 0.44%. So this analysis suggests that the world coverage of Indian medical literature is scanty and this presupposes that the coverage of IndMed has to be reconsidered in view of its coverage in ISA.

A comparison of the list of journals covered by IndMed and Medline with the ISA is shown above. But it is found that only 15 titles are common to all three services. The list of journals and the subject coverage is presented below in Table 2.

The numbers in the brackets show the number of titles in each. In view of the fact that the number Indian medical journals as per ISA is 358 and only 15 titles are common to the three services (4.19%), it is necessary for a medical library user to browse all three for a more comprehensive coverage. An optimum solution has to be arrived at to create a common platform where all desired titles and subjects are covered to cater to the needs of vast cross section of medical information users.

Table 2. Common titles of medical journal in ISA, IndMed and Medline

Common Titles in ISA, IndMed and Medline	Subjects
Annals of Cardiac Anaesthesia	Anaesthesia (1)
Indian J of Cancer	Cancer(2)
Indian J of Chest Diseases and Allied Sciences	Chest Diseases(1)
Indian J of Dental Research	Dentistry(2)
Indian J of Dermatology, Venereology and Leprology	Dermatology(1)
Indian J of Gastroenterology	Gastroenterology(1)
Indian J of Medical Microbiology	Microbiology(1)
Indian J of Medical Research	Gen Medicine(1)
Indian J of Pharmacology	Pharmacology(1)
Indian J of physiology and pharmacology	Physiology(1)
Indian J of Tuberculosis	Tuberculosis(1)
Indian Paediatrics	Paediatrics(1)
J of Cancer Research and Therapeutics	Neurology(1)
J of Indian Soc. Pedodontics and Preventive Dentistry	Neurology India



Graph 2. Graph showing the subject covered by 68 biomedical Journals in IndMed.

3. Subject-Wise Coverage of Titles by ISA, IndMed and Medline

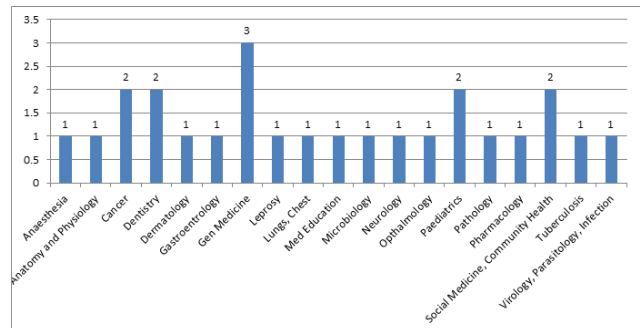
The data on subject-wise titles of journals covered by the three services was compiled and is presented in Table 3.

Table 3. Subjects of titles covered by the ISA, IndMed and Medline

Subjects	ISA	Ind-Med	Med-line
Aerospace and Nuclear Medicine	2	2	
Allergy, Asthama, Immunology	10	2	
Anaesthesia	4	3	1
Anatomy and Physiology	3	2	1
Ayurveda and Unani	7	1	
Biomedicine, Biomedical Engineering	8	2	
Cancer	8	2	2
Cardiology	4		
Clinical Science	4	4	
Critical Care	2	1	
Dentistry	25	4	2
Dermatology, Leprosy	3	1	2
Diabetes	2		
Endocrinology	1		
Epidemiology	2		
Forensic Science and Toxicology	9	1	
Gastroenterology	4	1	1
Gen. Medicine	60	8	3
Hematology		1	
Homoeopathy	3		
Hospital Management	5	1	
Lungs, Chest Diseases	1	1	1
Medical Education	10	1	1
Mental Health, Psychiatry/Psychology	9	3	
Microbiology	6	1	1
Nephrology, Urology	3	2	
Neurology	13	1	1
Nursing	3		
Nutrition and Dietetics	6	1	
Obs. And Gynecology	5	1	
Ophthalmology	6		1
Oral Medicine	8		
Orthopaedics, Rheumatology	6	1	
Paediatrics	9	1	2
Pathology	4		1
Pharmacology	40	3	1
Radiology	3		
Sexual Diseases	2	1	
Social, Occupational and Community Health	17	3	2
Surgery and ENT	14	5	
Tropical Medicine,	2		
Tuberculosis	1	1	1
Virology, Parasitology	7	2	1

The table shows the common subjects in all the three services with the number of titles in each of them. In this table all the 358 Journals from ISA, 110 Journals from IndMed and the 40 Journals of Medline are considered.

Even though the number of titles in each of them varies considerably, the number of titles in Pharmacology is comparatively higher as the subject is of interest to both medical and para-medical professionals. Obviously the number of titles in General Medicine is higher, yet the number of titles in Surgery (14), a traditional subject is comparatively small compared to emerging subjects like Neurology (13). Dentistry also shows a good number of 25 titles. Cancer has representation in all three services. The general subdivisions of medicine such as Paediatrics, Ophthalmology, Forensic Medicine and other traditional branches are represented and so is Social and Community Health in which there are a good number of journals. The commonly used criterion for inclusion of a journal in an abstracting and indexing service is the Impact Factor. This is examined in some detail for the Journals included in ISA and IndMed. The Subjects covered by the three services are graphically presented below.



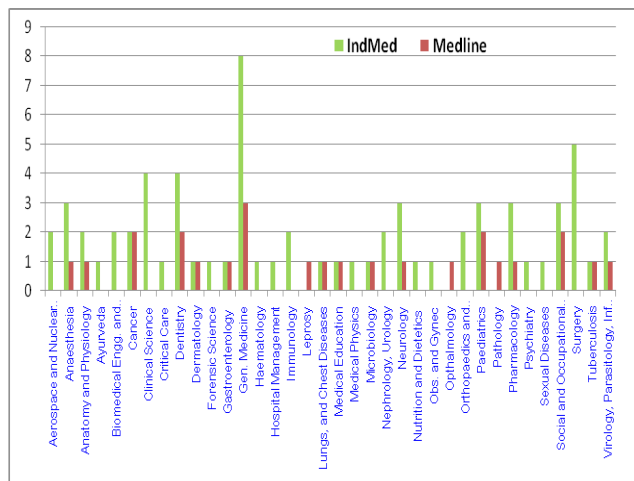
Graph 3. Graph showing the subject covered by 25 biomedical Journals in Medline.

4. The Comparison of IndMed and Medline

A comparison of IndMed and Medline subjects of journal titles is made and the data is presented in Table 4. Even though this may seem overemphasised, but in the previous section the comparison is more on ISA side. Here it is IndMed focussed comparison and would visualise the selection of journals to be part of IndMed. The comparison is made between 68 IndMed journals that with 25 Medline side.

Table 4. Subject-wise comparison titles of IndMed with Medline

Subjects of Titles	IndMed	Medline
Aerospace and Nuclear Medicine	2	
Anaesthesia	3	1
Anatomy and Physiology	2	1
Ayurveda	1	
Biomedical Engg. and Biomedicine	2	
Cancer	2	2
Clinical Science	4	
Critical Care	1	
Dentistry	4	2
Dermatology	1	1
Forensic Science	1	
Gastroenterology	1	1
Gen. Medicine	8	3
Haematology	1	
Hospital Management	1	
Immunology	2	
Leprosy		1
Lungs, Chest diseases	1	1
Medical Education	1	1
Medical Physics	1	
Microbiology	1	1
Nephrology, Urology	2	
Neurology	3	1
Nutrition and Dietetics	1	
Obs. and Gynec.	1	
Ophthalmology		1
Orthopaedics, Rheumatology	2	
Paediatrics	3	2
Pathology		1
Pharmacology	3	1
Psychiatry	1	
Sexual Diseases	1	
Social, occupational and community health	3	2
Surgery	5	
Tuberculosis	1	1
Virology, Parasitology, Infection.	2	1
Total	68	25



Graph 4. Graph showing the subjects of journal in IndMed and Medline.

5. The Profile and Evaluation of IndMed

The IndMed is a national level web-based indexing and document delivery service of the Indian Council of Medical Research (ICMR), in association with National Informatics Centre (NIC). In 1986 ICMR-NIC Centre was set up for biomedical information as Indian MEDLARS centre which continued till 2009.

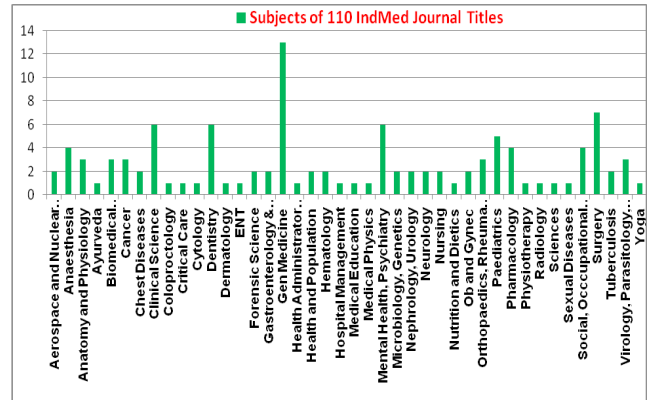
The IndMed provides index to 110 select Indian biomedical Journals and also offers full-text service through MedInd. So the current Web-portal of IndMed is bringing out two services i) IndMed – A bibliographic database; and ii) MedIND – A full text portal to 62 open access Indian biomedical journals. The biomedical journals are covered from 1985 onwards; however the service was started in 2010⁷. The portal also provides “Criteria for the selection of journals in IndMed. The list of journals being indexed, discontinued and additions, is given in IndMed website.

IndMED aims to supplement the literature surveys with Indian references⁷. Moreover, it would be of immense use for researchers on diseases and medical problems, more prevalent in India. The subjects covered by the 110 titles of journals of IndMed are given in Table 5 and a graphical presentation in Graph 5.

Table 5. The Subjects representing 110 tiles of journals in IndMed

S.No.	Subject	No. of Items
1	Aerospace and Nuclear Medicine	2
2	Anaesthesia	4
3	Anatomy and Physiology	3
4	Ayurveda	1
5	Biomedical Engineering and Biomedicine	3
6	Cancer	3
7	Chest Diseases	2
8	Clinical Science	6
9	Coloproctology	1
10	Critical Care	1
11	Dentistry	6
12	Dermatology	1
13	ENT	1
14	Forensic Science	2
15	Gastroenterology & Endocrinology	2
16	Gen Medicine	13
17	Health Administrator and Profession	1
18	Health and Population	2
19	Haematology	2
20	Hospital Management	1
21	Medical Education	1
22	Medical Physics	1
23	Mental Health, Psychiatry	6
24	Microbiology, Genetics	2
25	Nephrology, Urology	2
26	Neurology	2
27	Nursing	2
28	Nutrition and Dietetics	1
29	Ob and Gynec	2
30	Orthopaedics, Rheumatology	3
31	Paediatrics	5
32	Pharmacology	4
33	Physiotherapy	1
34	Radiology	1
35	Sexual Diseases	1
36	Social, Occupational Health	4
37	Surgery	7
38	Tuberculosis	2
39	Virology, Parasitology, Immunology	3
40	Yoga	1

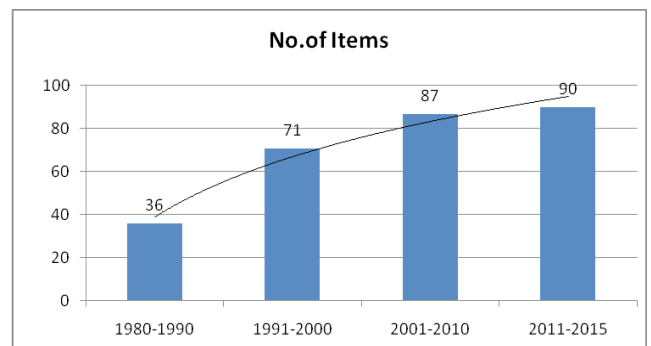
In addition to medical subjects it also covers one Journal in science and one in Cytology. However, indexing of the science journal was discontinued. The selection and use of these journals has to be assessed by a separate study.



Graph 5. The Subjects representing 110 tiles of journals in IndMed.

6. Other Observations on IndMed

The other observations made on IndMed are; out of 110 titles 9 titles were dropped and four new journals were added². The growth in the number of items covered by IndMed is shown in Graph 6.



Graph 6. Years of coverage of 110 IndMed journals.

7. Evaluation and Findings

The subject coverage and the number of titles covered by all the three together are comprehensive though not exhaustive. Subbaiah (1997)⁸ in a paper entitled “how relevant is medical research done in India?” The findings suggest that there is a mismatch between what is needed and what is being done. So ISA and IndMed should contribute to improving the visibility of the journals they index so that the research done in India will be assessed

to provide directions for the selection of journals for Indexing and Abstracting. The Findings of this study shows, that the ISA coverage of Indian Medical Journals is rather comprehensive whereas the IndMed has 110 journals. The coverage however from 2011 onwards is adequate, but the archival coverage should be carried out retrospectively to cover the entire published literature. It is found that the Indian Science Abstracts is not covered in the HELINET Consortia and it is surprising that with more than 350 biomedical and paramedical and many fringe subjects covered by the ISA, it is not a part of the consortia. It should be made mandatory that all medical colleges and institutions should subscribe to ISA considering the coverage and further that it is now available online.

8. Conclusion

This is just an exploratory study on the coverage of Indian journals and subjects by the three named services- ISA, IndMed and Medline. It shows the coverage of Indian medical literature at the international level particularly in Medline is very scanty (less than 1%). The starting of IndMed and MedInd is a good move in this context and the Indian medical professionals should be encouraged to contribute to Indian Medical Journals.

It is also observed that other subjects like, Ayurved, Homoeopathy, Unani and Sidda (known as AYUSH) are not well covered. There is need for user-based study exclusively covering Indian medical literature. The paper

also proposes that all the medical journals published from India should be made open access journals. This will improve their visibility among Indian medical professionals.

9. References

1. Abbreviated Journal List. Available from: http://isa.niscair.res.in/isa_search.jsp Accessed on 29 Aug 2016.
2. IndMed- Selection of Journals Indexed. (Available from: http://indmed.nic.in/journal_list.html) Accessed on 4 May 2016.
3. Number of Titles Currently Indexed for Index Medicus and MEDLINE. Available from: <http://www.ncbi.nlm.nih.gov/nlmcatalog> Accessed on 31 Aug 2016.
4. Available from: http://www.niscair.res.in/sciencecommunication/abstractingjournals/isa_online.htm Accessed on 29 Aug 2016.
5. IndMed- Selection of Journals Indexed. (Available from: http://indmed.nic.in/journal_list.html) Accessed on 4 May 2016.
6. Available from: https://www.nlm.nih.gov/bsd/num_titles.html As of July 2016, 5,630 journals are currently indexed for MEDLINE. MEDLINE includes journals that are cited as Index Medicus as well as other non-Index. Accessed on 29 Aug 2016.
7. IndMed. (Available from: <http://indmed.nic.in/>) Accessed on 4 Apr 2016.
8. Arunachalam S. (1997). How relevant is medical research done in India? – A study based on Medline. *Current Science*, V72 (12): 912.