

## OPEN ACCESS PUBLISHING IN J& K STATE AN ASSESSMENT

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### ABSTRACT

*The present study provides an overview of OA publishing in the state of Jammu and Kashmir (India). The study reveals that OA publishing is gaining popularity in the state with substantial amount of research publications already available through online OA journals.*

### KEYWORDS

*Open Access; Open Access Publishing- Jammu & Kashmir; India*

### INTRODUCTION

One of the major barriers faced by the scholars and researchers world over is the lack of access to the current literature in their field. Basically it represents a gap between the proposition of literature that libraries can access and that researchers need to be effective. This gap has widened as over the last few decades the annual rise in average subscription price for STM (Science, Technical and Medical) journals has outstripped the increase in library budgets around the world. (**Mark & Shearer, 2006; Prosser, 2004**). In developing countries conventional avenues of publishing are closed to many authors. As a result much of the research done in these countries is lost to researchers elsewhere. In India poor access to international journals and the low visibility of papers are major problems faced by Indian researchers. OA is viewed as a solution to this problem. OA signifies the democratization of knowledge and supports a socially responsible way to distribute knowledge. OA makes the same

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knowledge and information available to scholars in wealthy, first-world nations, in developing ex-communist, second-world nations, and in underdeveloped third-world nations. (Ylotis, 2005). OA to scholarly articles can be achieved in two main ways- by being published in an open access journal, or by being deposited in an open access repository, known as open access publishing (OAP) and open access archiving (OAA) respectively. (Fernandez, 2006; & Chan, 2004).

The open access journals make their quality controlled content freely available to all corners, using a funding model that does not charge readers or their institutions for access. There are several operational models in place, the simplest one being where the journal is set up and run by a university department, published electronically using only the institutions server space and edited and administered, including peer review, by interested scholars. A modification of this is where the journal receives some funding, either by grants or sponsorship, to support some of the editorial or management cost. (Correia & Teixeira, 2005). At present there are more than 3,370 open access journals listed in the directory of OA journals, DOAJ ([www.doaj.org](http://www.doaj.org)) maintained at the Lund University. A number of studies have reported that research impact of open access publications surpasses non-OA publications (Lawrence, 2001; Antelman, 2004; Harnad & Brody, 2004; Harnad, Brody, Vallieres, Carr, Hitchcocks, Gingras, et al., 2004; Hajjem, Gingras, Brody, Carr, & Harnad, 2005; Hajjem, Harnad & Ginrgas, 2005; Esyenbach, 2006). The present study attempts to ascertain the trends in open access publishing of research material by the researchers in Jammu & Kashmir State, one of the smallest states of India.

## **OBJECTIVES**

The following objectives are laid down for the study.

1. Assess the growth and trends of open access publications in J&K State
2. Assess and compare the open access publications across various institutions in the State
3. Verify hypothesis.

## **SCOPE**

The Scope of the present study is limited to research articles published from January 2000 to May, 2008 by the nine institutions of J&K State.

## **HYPOTHESIS**

The hypothesis formulated for testing reads

*“The proportion of open access publications does not differ significantly across institutions”.*

## **METHODOLOGY**

Elsevier’s Scopus database is used to identify the research output of various institutions of J & K state covering a time period of January, 2000-May, 2008. Scopus claims to index 15,000 peer reviewed journal titles including 1,200 OA journals from 4,000 publishers ([www.info.scopus.com](http://www.info.scopus.com)). Scopus affiliation identifier located 12 institutions of J&K state. Two important institutions i.e., Government Medical College, Jammu and Indian Institute of Integrative Medicine, Jammu not listed in the Scopus affiliation identifier but were located using option ‘affiliation’ in the basic search. The Boolean operator ‘OR’ was used to locate all variants of Government Medical College, Jammu

(i.e., Government Medical College Jammu, Govt. Medical College Jammu, and GMC Jammu). The publication output of faculty of Veterinary Science, SKUAST-K (listed separately in Scopus) and SKUAST-K is combined under SKUAST-K. The publications of Regional Engineering College, Srinagar & National Institute of Technology (NIT), Srinagar are combined under NIT, Srinagar, as the former was upgraded and its nomenclature changed to NIT in 2005. Similarly the publication output of Regional Research Laboratory (RRL), Jammu & Indian Institute of Integrative Medicine (IIIM), Jammu is also combined under IIIM, Jammu, as RRL, Jammu is now known as Indian Institute of Integrative Medicine (IIM), Jammu. Two institutions, Indian Institute of Integrative Medicine, Srinagar and Directorate of Health Services, Jammu are excluded from the study for having a small number of publications i.e., 6 and 2 respectively. Thus, the nine institutions are covered in the study (**Appendix I**)

The publication output of each of these institutions from January, 2000 to May, 2008 is ascertained through Scopus and the name of source journals along with the number of publications recorded (May, 2008). All the 662 journal titles were searched in DOAJ, directory of open access journals ([www.doaj.org](http://www.doaj.org)) and Google search engine ([www.google.com](http://www.google.com)) to find out the journals that are openly accessible.

The standard statistical techniques are used to estimate various statistical tests and verify hypothesis. The data is tabulated and analyzed in a systematic way to reveal findings in accordance with desired objectives.

## **RELATED LITERATURE**

**McCulloh (2006)** observes that OA initiative is dramatically transforming the process of scholarly communication bringing great



benefits to academic world. **Prosser (2004)** believes that OA journals and institutional repositories hold out the promise of providing a fairer, more equitable and more efficient system of scholarly communication and can better serve the international research community. **Chan & Costa (2005)** argue that open access enriches the global knowledge base by incorporating the missing research from the less developed world and improves the South-North and South-South Knowledge flow. **Haider (2007)** looks open access as a way to connect the developing world to the system of science, by providing access to scientific literature published in the developed world. **Arunachalam (2008)** stresses the need of OA mandate by various research organizations in India for their own research output and of projects funded by them. **Falk (2004)** observes that open access is gaining momentum with very broad support from library and professional groups, university faculties and even journal publishers. **Ramachandran & Scaria (2004)** argue that majority of academicians in the developing world are not well informed on how they could improve the visibility of their publications by making them OA. **Zhang (2007)** views that the authors may take a longer time to fully realize the benefits of OA movement as presently they are confused with open access platforms. However, **Herb & Muller (2008)** discovered that the scientists after becoming familiar with open access services use them to an increasing extent. An international survey by **Rowlands & Nicholas (2005)** reveals that the proportion of authors publishing in OA journals has grown considerably from 11% in 2004 to 29% in 2005.

## **RESULTS AND DISCUSSION**

The study reveals that all the institutions have contributed 2,212 articles in 662 journals averaging 3.34 papers per periodical. (**Table1**).

Variability and scatteredness at different levels appear among various institutions. The publication of Jammu University appears in 160 journals where as the publications of NIT, Srinagar appears in just 15 journals. The average number of publications per journal varies from institution to institution. The highest average being for GMC, Srinagar (7.42) and the lowest for NIT, Srinagar (1.46). The contributions towards open access journals also varies from institution to institution. The highest number of OA publications are from GMC, Srinagar 317 (82.12%) and lowest from SKUAST-K 10(8.84%) with NIT, Srinagar having no OA publication. The total number of OA publications is 843 (38.11%).

**Table 1 Publication Statistics**

S. No.	Institution	Cumulative Publications	No. of source journals	Average no. of Articles per journal	No. of OA Publications
1	KU, Srinagar	207	110	1.88	29(14.00)
2	JU, Jammu	542	160	3.38	31(5.71)
3	SKUAST-K	113	53	2.13	10(8.84)
4	SKUAST-J	125	44	2.84	12(9.60)
5	SKIMS, Srinagar	372	93	4.00	217(58.33)
6	GMC, Srinagar	386	52	7.42	317(82.12)
7	GMC, Jammu	273	39	7.00	215(78.75)
8	NIT, Srinagar	22	15	1.46	--
9	IIM, Jammu	172	96	1.79	12(6.97)
<b>Total</b>		2212	662	3.34	843(38.11)

*Note: Figures in parentheses indicate %age*

The 843 OA publications appear in 91 journals (Mean=9.26, S.D=31.00). The distribution of OA publications amongst the journals are skewed as the S.D. is higher than mean. (Table 2). The number of OA source journals varies from institution to institution, with GMC, Srinagar

contributing in 18 OA journals and the IIIM, Jammu in just 5 journals. The average number of articles per OA journal varies from institution to institution. e.g GMC Srinagar output is (17.61) on average and SKUAST-K is (1.42). The standard deviation also varies institution wise, with GMC Srinagar having the highest (46.79) and SKUAST-K the lowest (0.53)

The distribution of OA publications for SKIMS, GMC Srinagar and GMC Jammu are highly skewed having S.D. of 36.91, 46.79 and 40.61 respectively. This is due to the fact that most of their publications appear in two OA journals i.e., *JK Practitioner* and *JK Science* which appear to be very popular among the medical fraternity in the state. Out of 843 OA publications 749 (88.95%) are contributed by these three institutions.

**Table 2 Open Access Publication Statistics**

S. No.	Name of the Institution	No. of OA Publications	No. of source journals	Mean	Median	Mode	S.D.
1	KU, Srinagar	29	13	2.23	1	1	2.45
2	JU, Jammu	31	9	3.44	1	1	4.41
3	SKUAST-K	10	7	1.42	1	1	0.53
4	SKUAST-J	12	7	1.71	2	2	0.75
5	SKIMS, Srinagar	217	16	13.56	1	1	36.91
6	GMC, Srinagar	317	18	17.61	1	1	46.79
7	GMC, Jammu	215	16	13.43	1.5	1	40.61
8	NIT, Srinagar	--	--	--	--	-	--
9	IIIM, Jammu	12	5	2.4	2	1	1.67
<b>Total</b>		843	91	9.26	1	1	31.00

Most of the OA publications 93% (784) appear in Indian journals whereas 7% (59) in foreign journals (Table 3). The highest number of articles in foreign journals is for University of Kashmir i.e., 14(48.27%)

whereas it is just 2(0.93%) articles for GMC, Srinagar. The number of foreign source journals also varies from institution to institution with the University of Kashmir contributing in 9 foreign journals and GMC, Jammu in 2 foreign journals.

Collectively the 843 OA articles appear in 55 journals (Appendix II) with 32 (58.18%) foreign and 23 (41.82%) Indian journals. The average number of articles in foreign journals is 1.84 and the average number of articles in Indian journals is 34.00. The contribution towards OA journals is steadily increasing in the state (Table 4).

**Table3 Distribution of OA publications in Indian and Foreign journals**

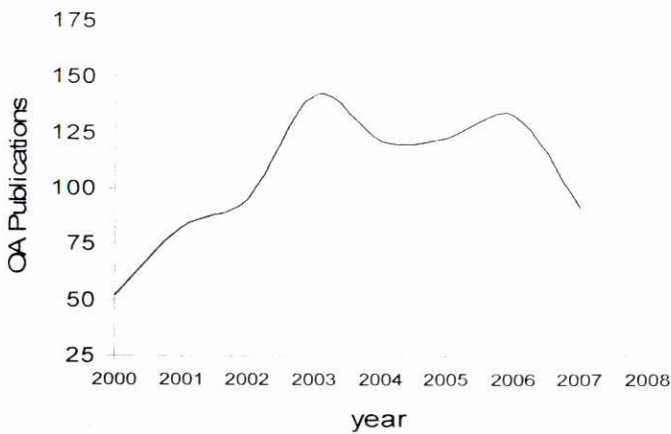
S. No.	Institution	Cumulative Publications in Indian journals	Cumulative publications in Foreign journals	Total
1	KU, Srinagar	15(4)*	14(9)*	29(13)*
2	JU, Jammu	23(3)	8(6)	31(9)
3	SKUAST-K	2(2)	8(5)	10(7)
4	SKUAST-J	3(1)	9(6)	12(7)
5	SKIMS, Srinagar	213(12)	4(4)	217(16)
6	GMC, Srinagar	310(13)	7(5)	317(18)
7	GMC, Jammu	213(14)	2(2)	215(16)
8	NIT, Srinagar	--	--	--
9	IIIM, Jammu	5(1)	7(4)	12(5)
<b>Total</b>		784(50)	59(41)	843(91)

*\*Figures in parenthesis represent number of journals*



**Table 4** Year Wise Distribution of OA Publications in J&K.

S. No.	Institution	Year									Total
		2000	2001	2002	2003	2004	2005	2006	2007	2008 (till May)	
1	KU, Srinagar	--	--	--	2	5	2	9	10	1	29
2	JU, Jammu	1	2	1	4	8	5	6	4	--	31
3	SKUAST-K	--	--	--	--	1	1	5	3	--	10
4	SKUAST-J	--	--	1	1	1	2	4	2	1	12
5	SKIMS, Srinagar	34	30	31	39	14	23	27	19	--	217
6	GMC, Srinagar	14	31	36	67	53	53	43	20	--	317
7	GMC, Jammu	3	20	26	28	37	36	34	31	--	215
8	NIT, Srinagar	--	--	--	--	--	--	--	--	--	--
9	IIM, Jammu	--	--	--	1	2	1	5	3	--	12
<b>Total</b>		52	83	95	142	121	123	133	92	2	843



*Figure 1* Growth of OA Publications in J&K (2000-2007)

## VERIFICATION OF THE HYPOTHESIS

The Chi square test is carried out to test the hypothesis “*The proportion of open access publications does not differ significantly across institutions*”.

$$\chi^2 = \sum (O-E)^2/E$$

E = Expected OA publications

O = Observed OA publications

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The value of  $\chi^2$  is 639.4. At 8 df this is highly significant at .05 level, .01 level and even at .001 level. Thus the hypothesis “*The proportion of open access publications does not differ significantly across institutions*” is rejected .And it is concluded that the proportion of OA publications differs from institution to institution.

## CONCLUSION

The present study reveals the open access publishing is gaining popularity amongst the researchers of J&K state with substantial amount of research literature being published through open access journals. Considering the wide ranging open access publishing trends there seems to be a direct correlation between OA publishing trends and the institutional background of authors, as OA publishing is much popular in Medical Institutions compared to other institutions of the state. It is hoped that with benefits of OA becoming clear day by day more of the research publications from Kashmir University, Jammu University, SKUAST-K, SKUAST-J, NIT Srinagar and IIIM Jammu will be available through open access channels. The different stake holders like library professionals and open access advocates also have a key role in bringing the benefits of open access to the notice of researchers by

extension and awareness programs in the state.

### LIMITATIONS & FUTURE RESEARCH

Since the Scopus database is used for identifying the research publications, the publications in journals not covered by Scopus need to be included. Further studies need to be undertaken to ascertain the actual proportion of authors contributing in OA journals and those sticking to the traditional modes along with the underlying motivating factors.

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**APPENDIX I**  
**LIST OF INSTITUTIONS**

1. University of Kashmir (KU), Srinagar
2. Jammu University (JU), Jammu
3. Sher-e-Kashmir University of Agricultural Sciences and Technology-Kashmir (SKUAST-K)
4. Sher-e-Kashmir University of Agricultural Sciences and Technology-Jammu (SKUAST-J)
5. Sher-e-Kashmir Institute of Medical Science, Srinagar(SKIMS), Srinagar
6. Government Medical College, Srinagar(GMC) Srinagar
7. Government Medical College, Jammu(GMC), Jammu
8. National Institute of Technology (NIT), Srinagar.
9. Indian Institute of Integrative Medicine (IIIM), Jammu

**Appendix II**

**List of OA source journals with number of publications**

S.No	Name of the Journal	Number of publications
1.	African Journal of Biotechnology	1
2.	Annals of Clinical Microbiology and Antimicrobials	1
3.	Annals of Thoracic Medicine	1
4.	Applied Ecology and Environmental Research	1
5.	Arkivoc	3
6.	Asian Journal of Plant Sciences	4
7.	Biotechnology	1
8.	Brazilian Journal of Physics	1
9.	Bulletin of Materials Science	9

*Continue*



*...Continued*

10.	Bulletin of the Korean Chemical Society	2
11.	Current Science	24
12.	Diagnostic and Therapeutic Endoscopy	3
13.	Electronic Journal of Biotechnology	1
14.	Indian Journal of Clinical Biochemistry	2
15.	Indian Journal of Critical Care Medicine	2
16.	Indian Journal of Dermatology	1
17.	Indian Journal of Gastroenterology	5
18.	Indian Journal of Medical Microbiology	7
19.	Indian Journal of Medical Research	2
20.	Indian Journal of Medical Sciences	8
21.	Indian Journal of Pediatrics	2
22.	Indian Journal of Radiology and Imaging	1
23.	Indian Pediatrics	4
24.	International Journal of Botany	4
25.	International Journal of Diabetes in Developing Countries	4
26.	International Journal of Environmental Research and Public Health	1
27.	International Journal of Morphology	2
28.	International Journal of Pharmacology	1
29.	International Journal of Zoological Research	1
30.	JK Practitioner	320
31.	JK Science	366
32.	Journal of Anesthesiology Clinical Pharmacology	10
33.	Journal of Astrophysics and Astronomy	1
34.	Journal of Biological Sciences	2
35.	Journal of Entomology	3
36.	Journal of Indian Association of Pediatric Surgeons	3
37.	Journal of Inequalities in Pure and Applied Mathematics	1
38.	Journal of Minimal Access Surgery	1
39.	Journal of Pediatric Neurosciences	1
40.	Journal of Postgraduate Medicine	6

*Continue*

**...Continued**

41.	Journal of Veterinary Science	2
42.	Library Philosophy and Practice	2
43.	Livestock Research for Rural Development	2
44.	Matematicki Vesnik (1)	1
45.	Molecules	1
46.	Neurology India	3
47.	Pakistan Journal of Biological Sciences	6
48.	Pakistan Journal of Nutrition	2
49.	Palaeontologia Electronica	1
50.	Reproductive Biology and Endocrinology	1
51.	Singapore Medical Journal	2
52.	Texas Heart Institute Journal	1
53.	Turkish Journal of Physics	1
54.	World Journal of Emergency Surgery	2
55.	World Journal of Gastroenterology	3