

## Low impact factors for Indian journals: Do factors other than quality influence?

The term journal impact factor (IF), first used by the Institute of Scientific Information, Philadelphia, USA in the year 1970, is the measure of citation frequency of any paper on an average in any journal for a particular year. IF may be defined as the mean number of citations to papers published in the journal in the preceding two years and is available for approximately 5500 journals. In spite of several limitations and artifacts, IF remains the most widely used and globally acceptable tool for objective evaluation of the quality of journals and research publications available. These are used worldwide by scientists, librarians, research administrators, funding agencies, etc. for assessing quality of journals and for academic evaluation. We looked into the status of Indian journals vs the global picture<sup>1</sup>. Comparative frequency distribution of IF:

Total and Indian journals (Table 1) revealed a very poor scenario for India. It is disheartening to note that the highest IF value for an Indian journal (*Current Science*) was < 0.600 in contrast to the highest IF value of > 45.00 (*Annual Review of Immunology*).

It is felt that IF may not always parallel quality. Other factors, e.g. coverage (multidisciplinary or subject-specific), type of publication (primary or secondary), degree of specialization (general, specialized, highly specialized) may increase or decrease IF values. We analysed 5500 IF for the year 1999 (ref. 2). A frequency distribution study helped us identify 17 top journals with IF more than 20. These include eight review journals (*Annu. Rev. Immunol.*, 47.564; *Annu. Rev. Biochem.*, 37.111; *Annu. Rev. Cell Dev. Biol.*, 26.263; *Physiol. Rev.*, 23.953; *Annu. Rev. Neurosci.*,

22.605; *Chem. Rev.*, 21.244; *Annu. Rev. Pharmacol.*, 21.175; *Endocr. Rev.*, 20.250), four multidisciplinary journals with broad coverage (*Cell*, 36.242; *Nature*, 29.491; *Curr. Opin. Cell Biol.*, 25.631; *Science*, 24.595) and only five journals to be subject-specific for genetics, medicine, cancer and immunology (*Nature Genet.*, 30.693; *New. Engl. J. Med.*, 28.857; *Nature Med.*, 26.584; *Cancer J. Clin.*, 22.327; *Immunity*, 20.563). Should secondary publications be ranked higher vs original papers involving years of painstaking research?

To probe the trend further, we looked at IF for some pharmacology journals as an example (Table 2). A closer look at the table shows that the journals (arranged in decreasing order of IF) have an increasing order of specialization, viz. A, general pharmacology; B, CNS and molecular pharmacology; C and D, with highest degree of specialization (and lowest IF) in areas of cognitive function and epilepsy research. Should IF (intended primarily to be measures of quality) be inversely proportional to the degree of specialization? Although IF constitute the most objective tools available, these need to be used wisely and comparisons should be made, keeping the above-mentioned facts in mind. Obviously meaningful comparisons can only be made among similar comparable categories.

**Table 1.** Frequency distribution of journal impact factors for 1999 (ref. 2)

Total		Indian	
IF	No. of journals (% of total)	IF	No. of journals (% of total)
< 1	3264 (57.81)	< 0.10	15 (31.91)
1.000 to 1.999	1245 (22.43)	0.100 to 0.150	8 (17.02)
2.000 to 4.999	847 (15.26)	0.150 to 0.200	3 (6.38)
5.000 to 9.999	133 (2.39)	0.200 to 0.250	4 (8.51)
10.000 to 19.999	44 (0.79)	0.250 to 0.300	3 (6.38)
> 20	17 (0.30)	0.300 to 0.350	6 (12.76)
		0.350 to 0.400	5 (10.63)
		> 0.400	3 (6.38)
<b>Total</b>	<b>5550</b>	<b>Total</b>	<b>47</b>

**Table 2.** Are impact factors inversely proportional to specialization?

Category	Pharmacology journals	Impact factor 1999
A	<i>Trends Pharmacol. Sci.</i>	10.148
B	<i>Behav. Brain Sci.</i>	8.800
	<i>Brain</i>	5.952
	<i>Mol. Pharmacol.</i>	5.428
	<i>Neuropharmacology</i>	3.240
C	<i>Cognit. Neuropsychol.</i>	2.900
	<i>Cognitive Brain Res.</i>	2.755
D	<i>Epilepsia</i>	2.525
	<i>Epilepsy Res.</i>	2.351

1. Vohora, S. B. and Vohora, D., *Nature*, 2001, **412**, 583.

2. *Journal Citation Reports*, Science Edition, CD Rom, 1999.

S. B. VOHORA\*<sup>†</sup>  
ZAHOR A. SHAH<sup>†</sup>  
DIVYA VOHORA<sup>#</sup>

<sup>†</sup>Department of Medical Elementology  
and Toxicology,

Faculty of Science and

<sup>#</sup>Department of Pharmacology,

Faculty of Pharmacy,

Hamdard University,

New Delhi 110 062, India

\*For correspondence.

e-mail: root@hamduni.ren.nic.in