

From the Editor's Desk

Impact Factor and Indian Pediatrics

“What is the impact factor of your journal”? No other question has bothered us much more than this seemingly innocuous query. Journals without an impact factor are not considered their worth. It has become a norm in the publishing world to have a listing in the JCR (Journal Citation Reports®) and a status symbol for journals from developing countries.

We are happy to inform our readers that Indian Pediatrics has been selected for coverage in Current Contents/Clinical Medicine and the Science Citation Index Expanded (SCIE), starting from the January issue of Vol. 42 (2005). Yes, it will also be added to JCR. JCR provides quantitative tools for ranking, evaluating, categorizing, and comparing journals. Impact factor is one of these tools. However, three years of continuous coverage is needed to calculate an impact factor so for a journal added to coverage with 2005 issues it will be in the 2007 Journal Citation Reports (released in mid 2008) that the journal will be listed with an impact factor.

What is Impact Factor?

The Impact Factor was devised by and is calculated by The Institute for Scientific Information® (ISI®), now known as “Thomson Scientific”. It is a measure of the frequency with which the “average article” in a journal has been cited in a particular year or period(1). In other words, Impact factor is a ratio between citations and recent citable

items published. For a given year, this is calculated as the total number of citations received in that year to articles published in the previous two years divided by the total number of citable items (source items) published by the journal in those two years. If this appears too complicated, let us understand it with the help of an example:

Number of citable articles (source items) published in Indian Pediatrics in 2005 and 2006 = x

Number of articles cited in world literature in 2007 to articles published in Indian Pediatrics in 2005-6 = y

Impact factor = y/x

A journal's impact factor is based on two elements: the numerator, which is the number of cites in the current year to any items published in the journal in the previous 2 years; and the denominator, the number of substantive articles (source items) published in the same 2 years. Thus, Impact Factor of a particular journal can be improved by either increasing the numerator (y), *i.e.*, the overall number of citations; or decreasing the denominator (x), *i.e.*, number of articles published by the journal that are considered to be source items, or both. Usually, Original articles, brief reports, review articles, case reports are counted as source items, while letters, abstracts, commentaries and editorials are not included.

Two other terms are also mentioned in the JCR, which indicate the immediate and long-term importance of an article, namely, Immediacy index and Cited half-life, respectively. These are defined below.

- *Immediacy Index*. It is defined as the average number of times an article is cited within the same year it was published. This

gives an indication of the level of current interest in the article.

- *Cited half-life.* It is the number of years, going back from the current year, that account for 50% of the total citations received by the cited journal in the current year. This is a measure of the durability or long-term value of an article, *i.e.* for how long it continues to be cited in the literature.

Impact Factors of 2004

The Impact Factors for a given year are published annually in September/October of the following year in the JCR. Thus, currently available impact factor is of the year 2004. *Table I* provides a listing of top 20 ranking journals in 2004 with their impact factors(2). *Table II* summarizes the top 10 journals in Pediatrics. Very few Indian journals are currently listed in JCR; notable amongst them are the *Curr Sci India*, *Natl Med J India* and *Indian J Med Res* with impact factors of 0.688, 0.626, and 0.6, respectively(3).

As you would note, the impact factor is calculated to three decimal places. The intention is to reduce the number of journals with the identical impact rank. However, it matters little, whether a journal has an impact factor of 14.544; or simply stated as 14.5. Eugene Garfield, the founder of impact factor and the Chairman Emeritus, Thomson ISI, himself deplored the quotation of impact factors to three decimal places, in his address made to the International Congress on Peer Review And Biomedical Publication, Chicago, September 16, 2005(2).

Getting Included in ISI® Database

More than 8000 international journals are currently listed in the ISI database. Every year, about 2000 new and established journals are evaluated by Thomson Scientific to assess

TABLE I—Top 20 Ranking Journals in 2004 JCR Listing with their Impact Factors (IF).

Rank	Abbreviated Journal Title	IF cites	Total
1.	Annu Rev Immunol	52.431	14357
2.	Ca-Cancer J Clin	44.515	3725
3.	New Engl J Med	38.570	159498
4.	Nat Rev Cancer	36.557	6618
5.	Physiol Rev	33.918	14671
6.	Nat Rev Mol Cell Bio	33.170	9446
7.	Rev Mod Phys	32.771	
8.	Nat Rev Immunol	32.695	5957
9.	Nature	32.182	363374
10.	Science	31.853	332803
11.	Annu Rev Biochem	31.538	16487
12.	Nat Med	31.223	38657
13.	Cell	28.389	136472
14.	Nat Immunol	27.586	14063
15.	JAMA-J Am Med Assoc	24.831	88864
16.	Nat Genet	24.695	49529
17.	Annu Rev Neurosci	23.143	8093
18.	Pharmacol Rev	22.837	7800
19.	Nat Biotechnol	22.355	18169
20.	Lancet	21.713	126002

TABLE II—Ten Top Ranking Pediatric Journals in 2004 JCR Listing with their Impact Factors (IF).

Rank	Name of Journal	IF
1.	Pediatrics	3.903
2.	J Am Acad Child Psy	3.529
3.	J Pediatr	3.117
4.	Arch Pediatr Adol Med	2.893
5.	Pediatr Res	2.875
6.	Pediatr Infect Dis J	2.735
7.	Pediatr Allergy Immunol	2.151
8.	Dev Med Child Neurol	2.083
9.	Ambul Pediatr	1.881
10.	J Pediatr Gastroenterol Nutr	1.764

their value to the database; however, only about 10% are selected for coverage! Each journal goes through an extensive evaluation process before being selected or rejected. The journal is evaluated on both qualitative and quantitative characteristics. Primary determinants of selection are the journal's basic publishing standards, its editorial content, the international diversity of its authorship, and the citation data associated with it(4).

Indian Pediatrics was successful in its first application only; the only drawback is that our official impact factor will be available in the year 2008. Recently, it has been suggested that ISI should reconsider its policy on citation tracking, and should introduce a policy of immediately tracking any peer-reviewed journal that meets basic quality standards and which can provide reference list data in an appropriate form to allow automated analysis(5). This will end the current 3 year-long wait for the established journals to have their impact factors.

Is Impact Factor the Ideal Parameter for Ranking Journals

Concerns have been expressed whether impact factor is a true indicator of journal status(6,7). It is argued that by merely counting the amount of citations and disregarding the prestige of the citing journals, the ISI impact factor is a metric of popularity and not of prestige. In fact, people are on the lookout for indices to overcome the shortcomings of impact factor. Bollen *et al.*, have recently introduced a *Y*-factor, which is claimed to reflect both popularity and prestige of a journal(8).

We tend to agree with Hoeffel(9) that "impact Factor is not a perfect tool to measure the quality of articles but there is nothing better and it has the advantage of already being in existence and is, therefore, a

good technique for scientific evaluation. Experience has shown that in each specialty the best journals are those in which it is most difficult to have an article accepted, and these are the journals that have a high impact factor. Most of these journals existed long before the impact factor was devised. The use of impact factor as a measure of quality is widespread because it fits well with the opinion we have in each field of the best journals in our specialty."

Piyush Gupta,

Associate Editor, Indian Pediatrics,

Panna Choudhury,

Editor in Chief, Indian Pediatrics.

Correspondence:

Dr. Piyush Gupta,

R-6-A, MIG Complex,

Dilshad Garden, Delhi 110 095, India.

E-mail; drpiyush@satyam.net.in

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