

Toward more meaningful evaluation of contributions and journals across different specialties: Introducing specialty impact factor

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Given the fact that there are a large number of journals published in all major fields of science, it is considered important to have some system to assess their quality. Impact factor, created by Eugene Garfield and Irving H. Sher in early 1960s, has become a popular indicator of the quality of a journal.^[1] Impact factors of the journals for the preceding year are released by Thomson Reuters annually in June in Journal Citation Reports. Impact factor of a journal for the year 2012 is calculated as follows:^[2]

- A = Number of times the citable items published in a particular journal in the years 2010 and 2011 were cited by articles in indexed journals in 2012.
- B = Total number of citable items published in that journal in the years 2010 and 2011.
- 2012 impact factor of the journal = A/B.

Citable items are usually articles, reviews, proceedings or notes; not editorials or letters to the editor.^[2]

USE OF IMPACT FACTOR TO COMPARE CONTRIBUTIONS AND JOURNALS IN DIFFERENT SPECIALTIES

Despite some of its limitations^[1] and development

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of some other indices, impact factor is probably the most frequently used index to assess the quality of a journal. As a consequence, if an author publishes an article in a journal, which has a high impact factor, the contribution is viewed more favorably. Articles published in high impact factor journals generally receive more positive attention or more points when someone seeks an academic benefit.

The concept of devising scoring system for evaluating publications of the individuals makes assessment of their contributions more objective and is certainly a well-intentioned and praise-worthy major step. The system is excellent when a particular specialty is considered because all individuals will be from the same field. However, there arises a peculiar situation when the same criteria are applied for individuals working in different specialties. To explain this, let us imagine a hypothetical specialty in which the highest impact factor journal has an impact factor of 50; and another hypothetical specialty in which the journal with the highest impact factor has an impact factor of only five. This can happen because the number of persons doing research in a particular field may considerably vary compared with those working in another field. With more persons publishing in a specialty, the chances of citations of an article in that field are more and thus the impact factors of the journals of that specialty will be higher. This puts persons working in “smaller” specialties (i.e., where comparatively fewer researchers are working and consequently the journals get lower impact factors) at disadvantage. An individual working in such a field will get lower scores, not because the person’s work is lacking in quality, but because there are less number of individuals working in that particular specialty to cite the work. Said another way, the contributions of a person working in a “smaller” (as explained above) specialty will have to be more to get the same scores compared with another in a field with

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higher impact factor journals. One solution to this problem may be to have different scoring criteria for different specialties, a solution that appears to be very complicated and thus probably impractical.

Another strange situation arises from the fact that human minds learn to make comparative and evaluative relations from an early age as recent research shows.^[3] As this relational responding is arbitrarily applicable,^[3] we may sometimes make comparisons when doing so and this may not be correct or beneficial. The impact factor should be used to compare different journals within a certain field.^[2] However, sometimes one may be inclined to compare impact factors of different specialties and conclude that one journal of a particular field, which has a higher impact factor, is superior to a different specialty's journal with a lower impact factor.

TOWARD MORE MEANINGFUL COMPARISONS: SPECIALTY IMPACT FACTOR (S-IMPACT FACTOR)

For the particular purpose of comparing contributions and journals across different specialties and thus resolving the aforementioned situations, impact factor may be modified by devising the concept of S-impact factor. S-impact factor is to be calculated as follows:

- A = Impact factor of a journal
- B = Highest impact factor in the same specialty
- S-impact factor = A/B.

Although developing a perfect system to quantify the academic contributions of an individual may be the unattainable Holy Grail, S-impact factor may be a small step in the right direction. S-impact factor is based on an assumption that best journals of all specialties have equal value and this appears to be a reasonable assumption. Calculated in the above-mentioned way, the journals of all specialties, which have the highest impact factors, will have the S-impact factors as one; while other journals will have S-impact factors which will be lesser than one. With S-impact factor, same minimum essential scores may be made applicable to different specialties for the purpose of academic benefits. Furthermore, if one wishes to do so, this index may be used as a more meaningful way to make comparisons of quality of journals belonging to different specialties.

General medical journals, like the New England Journal of Medicine (NEJM), which usually have a

Table 1: 2012 impact factors and S-impact factors of top 10 dermatology journals and Indian Journal of Dermatology, Venereology and Leprology

Journal	Impact factor	S-impactfactor
Journal of Investigative Dermatology	6.193	1
Pigment Cell and Melanoma Research	5.839	0.943
Journal of the American Academy of Dermatology	4.906	0.792
JAMA Dermatology (formerly Archives of Dermatology)	4.792	0.774
British Journal of Dermatology	3.759	0.607
Experimental Dermatology	3.578	0.578
Journal of Dermatological Science	3.520	0.568
Acta Dermato-Venereologica	3.487	0.563
Contact Dermatitis	2.925	0.472
Skin Pharmacology and Physiology	2.885	0.466
Indian Journal of Dermatology, Venereology and Leprology*	1.206	0.195

*It is heartening to note that our journal, now ranked 37,^[5] is for the first time among the top 40 dermatology journals in the world and is ranked number 3 amongst medical journals from India as per its impact factor, S-impact factor: Specialty impact factor

higher impact factor compared with specialty journals, also rarely publish specialty articles. This is a tricky situation for S-impact factor to handle. However, this is a rare event; out of the 14,610 articles published in NEJM in the past 10 years (source: PubMed), only 470 (i.e., 0.03%) belonged to dermatology.^[4] To address this rare event, S-impact factor of the journal in which the article has been published may be considered.

Table 1 shows 2012 impact factors^[5] and S-impact factors of top 10 dermatology journals and the Indian Journal of Dermatology, Venereology and Leprology.

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