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Peer reviewed

A Clinical Impact Score: a novel and clinically significant measure of journal influence

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To the Editor:

Measuring a journal's impact provides readers with a tangible metric to assess research influence. There are a plethora of metrics in use that differ in their methods of calculation, data source, and application. Impact Factor is a widely accepted index of journal prestige [1]. It is defined as the number of times that articles in a particular journal published in the previous two years are cited in a given year, divided by the total number of articles published in that journal during the same two years [2]. However, there are many limitations to this measure, including the assumption that citation frequency is an accurate representation of influence [3]. Although this may be a consideration for researchers, it does not take into account the relative importance for clinicians who may utilize journal articles to inform evidence-based practice, without necessarily adding to the number of indexed article citations as an objective measurement for frequency of use. In this study, we used an alternative indicator, Clinical Impact Score (CIS), which takes into account latest edition textbook references in addition to articles available in UpToDate and their respective primary literature citations.

We chose two commonly used dermatology textbooks in US residency programs (Bologna Textbook of Dermatology (2018) and Andrews' Diseases of the Skin (2017)), and UpToDate as sources for determination of dermatology CIS. We then selected five significant subjects in dermatology in accordance with Jellinek and colleagues: acne, atopic dermatitis, psoriasis, melanoma, and cutaneous T cell lymphoma (CTCL), similar to previous studies [4]. In each textbook chapter and UpToDate article, we counted references in these five subject areas and totalled the number of references to each journal. We then ranked journals based on percentage of total citations. Percentages were then averaged across subject areas within each journal. The final score, the CIS, is the average for the specific journal among all citations of the five subjects in both textbooks and in UpToDate. The methodology for calculating the CIS accomplished our goals of determining the importance of individual journals when developing content for textbooks and UpToDate, key resources used by practitioners.

A=total number of references relating to acne (Bologna + Andrews + UpToDate)

A_x=percentage of acne reference articles published by Journal X

And so forth with, B=atopic dermatitis, C=psoriasis, D=CTCL, E=melanoma

$$CIS_x = \text{average}(A_x, B_x, C_x, D_x, E_x)$$

We found that the *Journal of the American Academy of Dermatology (JAAD)*, *British Journal of Dermatology (BJD)*, and *JAMA Dermatology* ranked as the top three journals with the highest dermatology CIS, respectively. Across all 5 disease categories, JAAD ranked #1 in percent of total overall references, with an average CIS of 13.49. *British Journal of Dermatology* ranked second in atopic dermatitis and psoriasis, and third in acne. Finally, *JAMA Dermatology* ranked second in acne, and third in CTCL and melanoma. The remainder of top three rankings for each disease were distributed among the *Journal of Clinical Oncology*, *Journal of Drugs in Dermatology*, *Blood*, and *Journal of Allergy and Clinical Immunology*. **Table 1** displays the full rankings for the top 10 dermatology journals by CIS score.

A limitation of this study is that some journals (e.g. *JAAD*, *BJD*, *JAMA Dermatology*) disproportionately represent dermatology in their publications and are already well-known in the field. Despite the relatively high impact factors of included medicine journals

(e.g. *New England Journal of Medicine*, *Blood*), they encompass a larger spectrum of medical topics and consequently have a lower dermatologic CIS for the 5 conditions evaluated in our study. Additionally, CIS is specific for medical topics and textbooks reviewed in the calculation and may not be as widely applicable for other areas of medicine. Another limitation of our study is founded in the fundamental long timeframe and delays associated with the medical textbook publication process. Multiple years can pass between published editions of a reference text and thus, CIS should be periodically re-evaluated as new editions arise, in conjunction with the changing dynamic resources of UpToDate. Future refinement of CIS will also consider scaling to account for variation in the number of articles published by each journal.

Overall, CIS brings a valuable component of clinical decision-making influence and relevance to examining the impact of a journal, beyond the research citation metrics used in measures such as Impact Factor [4]. Moving forward, greater application of CIS to a wider range of conditions and fields could provide an essential tool for medical journals to assess and monitor their impact on current clinical practices and academic resources.

Table 1. Journal ranking by Clinical Impact Score (CIS) considering five dermatologic diseases.

CIS Rank	Journal	CIS	Acne	Atopic dermatitis	Psoriasis	CTCL	Melanoma
#1	JAAD	13.49%	16.20%	11.47%	20.53%	12.20%	7.07%
#2	BJD	6.86%	8.33%	10%	8.90%	5.70%	1.37%
#3	JAMA Dermatology*	5.17%	9.17%	2.10%	4.73%	6.07%	3.77%
#4	Journal of Investigative Dermatology	3.29%	5.00%	4.40%	3.13%	2.80%	1.13%
#5	Journal of the European Academy of Dermatology and Venereology	2.49%	4.73%	2.50%	4.60%	0.37%	0.27%
#6	Journal of Clinical Oncology	2.08%	0.00%	0.00%	0.00%	5.17%	5.23%
#7	Journal of Drugs in Dermatology	1.95%	1.20%	0.63%	7.83%	0.07%	0.00%
#8	New England Journal of Medicine	1.83%	1.07%	1.83%	2.27%	0.60%	3.40%
#9	Blood	1.77%	0.00%	0.00%	0.00%	8.83%	0.03%
#10	Journal of Allergy and Clinical Immunology	1.48%	0.00%	7.37%	0.03%	0.00%	0.00%
LEGEND:							
Rank Per Disease Category		#1	#2	#3			

*Includes the *Archives of Dermatology*.

Potential conflicts of interest

Dr. Dellavalle declares the following: Joint Coordinating Editor for *Cochrane Skin*, Social Media Editor of *The Journal of the American Academy of*

Dermatology (JAAD), dermatology editor for *UpToDate*, and Podcast Editor for *Journal of Investigative Dermatology (JID)*. All remaining authors have no conflicts of interest.

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