Favourable Effect of Changes on 2020 Journal Citation Reports Calculation: A Pilot Analysis in Immunology Category to Generate "Baits for a Good Catch" in Near Future

Jefferson Russo Victor*

Laboratory of Medical Investigation LIM 56, Division of Dermatology, Medical School, University of Sao Paulo, Sao Paulo, BRAZIL.

ABSTRACT

The Journal Citation Reports (JCR) 2020 release contains the Journal Impact Factor (JIF) for each journal indexed in the Web of Science data bank. A change influenced this recent release in its calculation because of the inclusion of early access items not considered in previous releases. These alterations can directly influence JIF results, mainly due to a more extensive source of citations, but this may not have occurred homogeneously for all journals. We performed a simplified evaluation of JIF progression in one area Web of Science journals category, Immunology, to evaluate the effect of these alterations in JIFs and discuss possible reasons for the observed effect yielding some evidence for the next JCR release.

Keywords: Journals Impact factor, Journal Citation Reports, Immunology, 2020.

Correspondence Jefferson Russo Victor

Laboratory of Medical Investigation LIM-56, Division of Clinical Dermatology, Medical School, University of Sao Paulo, Paulo, BRAZIL. Email id: victorjr@usp.br ORCID ID: 0000-0001-6092-8394

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INTRODUCTION

The discussions and sometimes controversies about Journals Impact Factors (JIFs) released annually by the Web of Science have occurred for many years.^[1-3] Even after more profound criticism by some groups of journals that have decided to eliminate their JIF from their website in 2016,^[4] the JIF still represent a primary and, on some occasions, a fundamental scientific metric for researches and their relations with funding agencies to take their decisions on granting and hiring professionals. Therefore, it is impossible not to consider the JIFs at the time of manuscript submission and to evaluate their eventual stability in the following years.

In this complex state of the art, the recently released 2020 JCR announced a significant change in the JIF calculations where the "Early Access" items, those papers that had become electronically available prior to its final publication, started to be considered. For example, the citations in a paper that became electronically available in 2020 by "early access" but finally published in 2021 now have their citations considered in the 2020 JCR and not in the 2021 JCR as it will happen considering the previous calculation methodology.

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Based on these alterations, we could observe that some journals could generate a substantial increment in their JIF, and based on this initial observation, we performed a pilot analysis of the JIF progression in one Web of Science category aiming to observe the practical effect of this alterations and to generate some discussion about the near-future impact of this results.

MATERIALS AND METHODS

The analyzed data was acquired from the Web of Science InCites[™] Journal Citation Reports (InCites[™] JCR released from 2016 to 2020) using the categories filter to include only Immunology journals. All journals that did not have JIF calculated for all evaluated years were excluded. A total of 177 Immunology journals received their JIF in the 2020 release, and after the application of exclusion criteria, we evaluated 148 journals.

Since the JIF metric are based on the absolute number of citations and one citation cannot be fractioned although the total calculation has decimal values, we grouped the journals using the following parameter (applicated based on the 2020 JCR results): i– Journals with JIF value positive variation minor than one citation (Increased); ii– Journals with JIF value positive variation more significant than one citation (Increased plus 1); iii– Journals with JIF value positive variation more significant than two citations (Increased plus 2); iiii– Journals

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with JIF value positive variation more significant than three citations (Increased plus 3).

RESULTS

First, we evaluated the average of the JIFs of the evaluated journals, and we could observe that the mean of the JIFs had a significant augment in the JCR 2020 compared to the previous year (Figure 1a). We could observe that this augment was more significant than one citation (Precisely: 1.113), and a similar augment cannot be observed when the previous JIFs (2016–2019) were compared.

Next, we evaluated the frequency of JIFs augment, and we could observe some increase on 136 from 148 evaluated journals, representing some increase in 91.89% of the journals in the Immunology category. Next, we grouped the journals according to their increased intensity using a scale of one citation, and we could observe that 56 journals had an increase of at least one citation (37.83%), 21 journals had an increase of at least two citations (14.18%), and only nine journals had an increase greater than three citations (6.08%) as observed in Figure 1b-c.

To observe the distribution of the JIFs increment between all ranges in the immunology category, from the lowest to highest (JIF: 0.466 to JIF: 53.106), we grouped and illustrated individual JIFs. As we can observe in Figure 1d to 1h, as the increasing criterium progressed, we still could observe journals from several ranges in all increasing intervals, including the highest (plus three increased) where we could observe JIFs from 2.216 to 53.106.

DISCUSSION

As demonstrated by our results, changes in the JCR calculation resulted in a substantial increment of JIFs in the Immunology category. This effect was mainly mediated by including the "early access" sources that were not considered in the previous JCR releases. This alteration yields permission to include in the 2020 JIFs calculation citations by papers that were not finally published in 2020, which could augment the absolute number of citations for 2020 JCR but that will not be considered for the next release (2021). This characterizes the release of 2020 as the only one where the "early access" will benefit the absolute number of citations since this alteration will be maintained in the following years, and the "early access" papers the was considered in the 2020 release will not be considered at the time of their final publication, mainly 2021.



Figure 1: Grouped and individual illustration of JIFs of journals in the Immunology category. JIFs of Immunology journals from 2016 to 2020 were evaluated, and the means (±standard error) were illustrated (a). The absolute number (b) and relative number (c) of journals in the Immunology category and after grouping as journals with any increase or increase more significant than one, two, and three citations were demonstrated. Individual JIF for each journal over the evaluated years were demonstrated for all journals in the Immunology category (d), for all journals with any increase in their JIF (e) and for all journals with an increasingly more significant than one (f), two (g), and three (h) citations were also demonstrated.

This favorable "early access" effect could substantially benefit, with a plus one increment, a minority of the Journals in the Immunology category, and since this effect was mediated by the early inclusion of citations with the later exclusion of these citations in the following year, we need to take some attention to a possible "rebound" effect in the next JIFs release. Editors from several journals may pay some special attention in this field to prevent some negative "surprises" shortly. We finally suggest that this effect can generate the review of some editorial policies about "early access" of paper, and those that drive their attention to the flow of early access publications will be able to notice which is the best "bait for a good catch" in the following year.

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