EDITORIAL

Unblocking the innovation pipeline needs good publishing practice

Dentistry is as a scientific discipline that has led to the rapid development of highly sophisticated materials and methods, and is recognized as an independent specialty. By definition, science comprises the systematic search for new knowledge, and teaching students the state of the art enables them to become part of the scientific community.

New findings are commonly presented at congresses and in scientific journals such as Quintessence International. Moreover, the digital revolution has led to a variety of novel publication forms such as webinars and e-publications. With globalization, this has made it very easy to exchange ideas and knowledge over long distances in real time, creating a perfect situation for researchers.

On the other hand, it appears to me that these undoubtedly positive developments have promoted a somewhat sloppy approach to conducting research. Prior to digital photography, one had to properly plan for taking a specific picture; it could not be seen immediately and one had to pay for processing. Today, taking good pictures is as easy as falling off a log, and any imperfections can be Photoshopped. Writing and editing manuscripts or scientific posters have also become much easier and quicker, while the written word seems to have lost some of its importance. Data storage space and computing power is no longer an issue, with common smartphones having greater memory capacity than regular computers had some years ago. This, however, has led to people collecting huge datasets with no idea how to analyze and interpret their findings.

Scientific output has always been used to measure the efficiency of individuals working in universities and other research institutions, and continues to be a decisive factor when it comes to being promoted or tenured. Directly related to this is the amount of funding a faculty member can procure for conducting research. There seems to be a general trend towards reducing research budgets and funding available through governmental agencies, foundations, and scientific communities, often leaving industry as the only source available. Rarely does such cooperation allow for working in basic research areas or on ideas that cannot be commercialized immediately.

Under such conditions it is understandable that long-term studies are difficult to fund and conduct. While the general dental practitioner may be interested in the performance of materials and treatment concepts over a period of more than 10 years, the academic climate makes such studies almost impossible. In addition, the large number of meetings and congresses at which top-notch and novel scientific findings should be presented often precludes the proper design and execution of studies. The innovation pipelines of the dental industry are blocked, and there are examples of materials disappearing from the market prior to the publication of medium-term clinical results.

Unfortunately, the academic system rather supports faculty members who have long publication lists and a track record of publishing in journals with a high impact factor. Both of these indicators can easily be counted, whereas it would require specific knowledge to independently judge the content and the quality of publications. Another factor of concern is the so-called publication bias: a study showing a significant difference or effect of a certain treatment modality has a greater chance of being accepted for publication than a study in which no effect could be found. In reality, however, the "no significant difference" studies may have a greater impact for the scientific community, as they prevent others from redoing the same experiment.

The advent of open access publications has dramatically changed the publishing business. Previously, the reader paid for a journal; in open access formats, the authors pay a processing charge, making their content freely available to readers. Although the concept behind open access may be regarded as altruistic (who of us has never downloaded freeware from the Internet?), it also constitutes a business opportunity for publishing companies, ie, you pay to get your paper published. My experience is that papers that have been repeatedly rejected by renowned journals have a good chance of passing the review process of open access journals. Their reduced scientific standard (there are of course some exceptions) combined with aggressive promotion has generated the term "predatory journal." This has led to such journals being recognized as low value,

and periodically causes the scientific community to complain about predatory publishing.

Let us be honest. If the pressure on faculty members was not as high and the scientists' obligation and motto were not "publish or perish," nobody would publish in such journals and the overall quality of research would be higher. In my opinion, the so-called predatory journals are only one symptom of a diseased scientific community.

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