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LETTER TO THE EDITOR

Defining authorship in the era of big data collection and its consequences on the academic career

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Dear Editor,

An essential requisite for the quality of medical research is an adequate sample size of the population to be studied. Multicenter trials of new treatments aimed to determine reliability and reproducibility offer a great opportunity to recruit large numbers of patients in a short time. Big data analysis has, however, given life to a system in which, not only the individual contribution of authors cannot be identified, but even the basic requisite for authorship are questioned.

The general agreement among the scientific journals to recognize authorship is written in the instruction for authors and requested on the front page of any manuscripts sent for publication and generally include "sufficient participation in the work to take public responsibility for the content, in conceiving or designing or analyzing and interpreting data, in drafting the article or revising it for critically important intellectual content, and in approving the final version of the paper. The ICMJE (http://www.icmje.org) has recently pinpointed these requisites recommending that authorship must be based on the following four criteria:

- Substantial contributions to the conception or design of the work; or the data acquisition, analysis, or interpretation for the work; AND
- Drafting the work or revising it critically for relevant intellectual content; AND
- Contributing in the final approval of the version to be published; AND
- Agreeing to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

"In addition to being accountable for the parts of the work, an author should be able to identify which coauthors are responsible for specific parts of the work. All those designated as authors should meet all four criteria for authorship. Those who do not meet all four criteria should be acknowledged".

Therefore, participation solely in the collection of data does not justify authorship.

In recent years there has been a trend towards the snapshot collection of data, often promoted by surgical societies, where many, sometimes thousands contributors from different countries collaborate in the collection of clinical data of a small number of patients related to a simple clinical question such as "the last 3 months leakage rate of ileocolic anastomosis"[1] or an "audit of left colon and rectal resection"[2]. The results of these studies may be robust and have general implications and any Editor would be willing to accept such a paper, which would have a high probability of being cited contributing to the impact factor of the journal.

Surgical societies strongly support this type of research: it will increase the reputation of the society for the industry-wise, and encourage the contributors to become members of the society.

However, since the thousands of "authors" listed in the big data papers do not fulfill any of the requirements listed above, should they still be considered authors listed in PubMed and get the full benefit of authorship?

This deranged pathway to achieve easy and unearned authorship, combined with the increasing diffusion of predatory journals (https://bmcmedicine.biomedcentral.com/articles/10.1186/s12916-0170785-9.), the offer of membership of the editorial board without a structured process, and the ability to purchase publication, can have dramatic consequences on the academic career. In fact, all these opportunities are regrettably legal and should not be confused with blatant frauds in research such as image manipulation and data fabrication, fake reviews, and duplicate publications.

In Italy, as in several other European countries, the rules for the appointment of associate or full professorships include the

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number of publications over the course of 10 to 15 years, the number of citations, and the H index.

Following these rules, active participation as a collaborator in the collection of big-data studies can help many doctors achieve these goals with minimal effort whatever their scientific competence. This new type of study, in fact, fulfills the requisites of a good publication. With two to three such publications per year in a journal with a high-impact factor which will be certainly quoted (or selfquoted) by the participants or those who need references supporting their own study on that topic, it appears clear that academic credit can be given to individuals who have little or no academic distinction. On the other hand, nobody will dedicate time for patient recruitment in these studies without the reward to be nominated among the authors.

Running a randomized clinical trial (RCT), particularly in surgery, is a hard task. Not only the topic of the research must be clinically cogent and the design of the study solid, but strict rules are required to register a trial including Ethics committee approval, registration number on one of the international websites for RCTs, and fulfillment of the CONSORT criteria before the study can be submitted for publication.

Furthermore, in studies dealing with survival of patients such as those with cancer, several years of follow-up will be required before any results will be available. In this circumstance, the effort and energy of a good researcher to run a RCT may well be rewarded after many years of hard work by a single paper in a good journal. This cannot be compared with one of the "authors" of a big-data collection-based study, in which someone else will have analyzed and written the paper giving an easy publication for almost no work.

A recent attempt to give the due recognition to participants involved in scientific papers is an initiative some publishers are starting to adopt and called CRediT (https://casrai.org/credit/).

Many of the ethical issues listed so far are often consequences of the pressure to publish, (*publish or perish*!) but, as long as the academic reward/merit system is based on the abovementioned criteria, researchers will face the temptation to manipulate the system. Despite, the use of big data collection papers is a very helpful methodology to recruit large quantity of data in short time, it is time for an urgent revision of the rules to identify genuine scientific achievement among authors of published articles and to promote merit in academic career.

References

1. 2015 European Society of Coloproctology collaborating group (2017) The relationship between method of anastomosis and anastomotic failure after right hemicolectomy and ileo-caecal resection: an international snapshot audit. Color Dis. https://doi.org/10.1111/codi.13646
2. ESCP Cohort Studies and Audits Committee (2018) The 2017 European Society of Coloproctology (ESCP) international snapshot audit of left colon, sigmoid and rectal resections - study protocol. Colorectal Dis. 20(Suppl 6):5–12. https://doi.org/10.1111/codi.14377