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Human and comparative bomedical science, when methods count more than results

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Abstract

The present Editorial deals with the paramount relevance of the scientific methodology employed for pursuing the objectives of any human and veterinary biomedical study. Within a sound "evidence-based medicine" perspective, the quality of obtained results should be evaluated on the basis of the methods used, either inspired by reliable bibliographic sources (e.g. PubMed) or, alternatively, by the web. In the latter case, a concrete risk refers to the possibility that results of doubtful, or even of no scientific value, may be magnified by the general public over those generated following a rigorous and standardized scientific methodology.

Keywords: Biomedical science; Methods; Results; Scientific rigour; PubMed; CoViD-19.

Editorial

As I used to remind veterinary medical students during my academic lectures in general pathology and veterinary pathophysiology, while it is undeniable, on one hand, that the sum of 2 + 2 will unvariably end up with the final result of 4 in a strictly mathematical perspective, this could lead, on the other hand, to a final result of 4 but also 3, 5, 6, etcetera when dealing with biomedical research. The main reason behind this statement lies upon the biological variability characterizing every single form of life, from proteinaceous infectious prions and acellular viruses up to the blue whale (Balaenoptera musculus), the largest animal on Earth (1). Indeed, the methodology employed for pursuing a given study's aims is what really matters in biomedical science. In this respect, just to make a paradigmatic example, let's imagine to stand in front of a crossroad from which two streets branch off: one is that characterized by a rigorous scientific methodology, relying on bibliographic sources unanimously accredited by the global scientific community; the other one, by contrast, is diffusely permeated by self-reference. The first one is mirrored by monumental bibliography collections such as PubMed, run by the National Institutes of Health (NIH) in Bethesda, USA, while the second one is reflected in the web. As a consequence, the latter may potentially reach everyone, whether gifted or not with a "basic" scientific background. Within such a challenging and insidious context, a major risk appears to be represented by the possibility that "results" of doubtful or even null scientific value are prioritized by the general public over those generated by studies employing a methodology built upon solid and reliable scientific bases. This may lead, in turn, to undermine public trust in the scientific community, thereby giving rise to aberrant and extremely deleterious "no vax" - if not even "conspiracy" - theories as clearly shown by the COVID-19 pandemic.

Historia magistra vitae and, no less important, Errare humanum est perseverare autem diabolicum!

Declarations

Conflict of Interest

The Author declares that there is no conflict of interest.

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