

## EDITORIAL

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*El pensamiento crítico  
aplicado al periodismo científico.  
Ciencia a conciencia: crítica y debate.*

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# Critical thinking applied to science journalism. Science with a conscience: critique and debate

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The Scientific Committee of the **REVISTA ESPAÑOLA DE SALUD PÚBLICA** approved, at its meeting held on 25 November 2021, the creation of a new section on critical thinking. What are the reasons for this new section?

The volume of studies published in scientific journals is enormous, but the scientific quality of the research articles is very varied. Often there is not enough time for a critical and calm reading to interpret their methodological quality. There is a number amount of articles that are sent to journals for publication, and often this publication is not supported by the novelty of the subject matter or the quality of the study carried out, but rather by the need to increase the curriculum of the authors or to be a criterion for evaluation and academic and professional performance.

But the decisions of health authorities must be guided by the best scientific evidence, which is generated by the highest quality studies. For this reason, it is essential to improve the quality of what is published in peer-reviewed journals.

Confidence in scientific studies requires minimising the risk of bias in their development, so that the results are reasonably internally valid. This will allow their results to be properly integrated into the complex decision-making processes in public health, which include considering the consistency and accuracy of all literature results, the applicability to populations other than those directly studied, the budgetary impact of interventions, and the preferences and values of the population, which influence the feasibility of these interventions (1,2).



Very useful guidelines and recommendations have been published for the critical reading and evaluation of epidemiological studies (3) and original scientific articles in health sciences (4). There are also very specific tools for the evaluation of cross-sectional epidemiological studies that should facilitate critical reading and assessment of their internal validity and accuracy and the usefulness of their results (5). However, these tools are not used as frequently and rigorously as they should be.

Sporadically, news is published about alleged associations in some studies between an environmental factor, a food, a product or a drug and a disease. A certain proportion of these studies are of very low methodological quality. However, they lead to an excessive perception of risk, generate confusion, fears and unjustified alarm that may induce the application of unjustified measures, either by public authorities or by individuals themselves who react uncritically to such news.

This new section of the **REVISTA ESPAÑOLA DE SALUD PÚBLICA** aims to be a loudspeaker to encourage a critical reading of scientific studies and the acquisition of critical and sceptical thinking that will contribute to improving the quality of the studies we publish and increase their usefulness for decision making in Public Health.

Critical thinking involves effective functioning that correctly assesses information; to do this, once it has been captured, it must be properly contrasted, understood and integrated into the body of knowledge about that subject that we have in our heads. Critical thinking moves us to know the truth, awakens the need to have evidence to support it, and pro-

motes the consideration of various possible explanations with a certain openness to contrary ideas (6). It therefore rejects simplistic approaches, shuns the speed and immediacy demanded by today's society and goes further in search of excellence in scientific procedure, regardless of the cost in time and effort.

The COVID-19 pandemic has shown how quickly false or pseudoscientific ideas, predictions and omens of supposed experts spread. To mitigate or at least explain this dynamic, researchers and editors of scientific journals should remind us that science is continually undergoing revision and self-correction. We need good intelligence, understood as the ability to manage a complex reality (7) to discriminate the validity and quality of research. Prudence, respect, humility and honesty, combined with the findings of good studies are the way to manage the complexity and uncertainty of reality. Some of these capacities can be developed by applying the scientific method and adopting critical thinking with healthy scepticism (8). We hope that this new section will be a suitable forum to advance this exciting task.

We also want this section to serve to reflect on the foundations of Public Health and to conceptually address basic areas such as epidemiology, sociology, anthropology, and economics, among others that have acquired great relevance in the last two years of the COVID-19 pandemic.

We open a space for reflection and debate for all those who want to exercise themselves in the task of transcending what is assumed to be true, in these times when uncertainty and change are shaking the foundations of our society a little.

El pensamiento crítico aplicado al periodismo científico. Ciencia a conciencia: crítica y debate.

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