CONGRESO IBEROAMERICANO DE NUTRICIÓN

¿Nutrición basada en la videncia
o en la evidencia?

ALIANÇA | ALIANZA IBERO-AMERICANA DE NUTRICIONISTAS AIBAN

ACADEMIA ESPAÑOLA DE NUTRICIÓN Y DIETÉTICA

www.renhyd.org

resumen de ponencia

4 de JULIO de 2019

CONFERENCIA PLENARIA

Evidence-based Research: a step between past and future research

Hans Lund[1,*], on behalf of the Evidence-Based Research Network, and EVBRES, a COST Action (CA17117)

[1]Centre for Evidence-Based Practice, Western Norway University of Applied Sciences, Bergen, Noruega.

***Hans.Lund@hvl.no**

***"If I have seen farther it is by standing on the shoulders of giants"* (Isaac Newton).**

This famous phrase, written by Isaac Newton in a letter addressed to Robert Hook in 1676, expresses with splendid exactitude the scientific ideal: science must be cumulative so that each new discovery must depends on and be based on previous research and knowledge.

In fact, scientists believe that new research is better, or more insightful or more powerful. This thinking assumes that the new studies will incorporate and improve the lessons learned from previous work. The novelty itself is superficial without links to the past. Each new result must be interpreted in the context of previous research.

Consequently, for science to be cumulative, **an intermediate step between past and future research is necessary**. The new scientific ideal must be that **new primary studies were based on systematic reviews of previous similar studies, that is, in synthesis of the existing evidence** (1).

Strictly speaking, the scientific logic leads us to think that it seems unlikely that the study reports (scientific articles) have been published without taking into account all the relevant previous research, or at least that these articles have not been published in high impact journals. However, an article published in 2011 (2) throws worrying data on how often authors refer to the totality of earlier research. After the evaluation of 227 meta-analyzes that included a total of 1523 randomized controlled trials (RCTs), it was shown that 55% of the authors did not reference any trials, and the median number of references to earlier studies was 2 even though they could have cited 3 or more studies from the same area. These data reflect an important problem: **the systematic and**

transparent approach is rarely used when referencing to similar previous trials.

A 2018 publication (3) offers more information about whether systematic reviews of existing studies are used to see if a new study is required. The review, after the evaluation of 622 RCTs published in high impact journals in anesthesiology (2014-2016), concludes that only 20% of RCTs cite a systematic review (SR) as justification for new studies on the subject, and 44% do not cite any SR, which reflects another problem closely related to the aforementioned: **a systematic and transparent approach is rarely used to justify additional studies**.

A third article published in 2015 (4) that evaluated whether previous systematic reviews have an influence on research agendas, concludes that despite 77% of the 47 trials evaluated (trials funded by the National Institute for the Evaluation of Health Technology for Health Research - NIHR HTA between 2006 and 2008) referred to a previous SR, only 42% used the information from these reviews to design and plan a new study, which in turn reflects another problem: **a systematic and transparent approach is rarely used to design new studies**.

Another publication of 2013 (5) that evaluated the frequency with which scientific authors place their results in the context of previous research, concluded that most of the randomized studies published in May 1997, 2001, 2005, 2009 and 2012 in the 5 leading high-impact journals, did not attempt to place their results in the context of previous research, which again suggests that: **systematic and transparent approach are rarely used when placing new results in the context of existing results from earlier similar trials**.

At this point, some concerns arise regarding these results. Undertaking new research without systematically reviewing the evidence of what is already known, particularly when it involves people or animals, is unethical, is unscientific and is wasteful. Although most of the clinical researchers refer to previous studies and try to do it correctly, evidence show however, that researchers, research funders, regulators, sponsors and publishers of research fail to use earlier research when preparing to initiate, fund, regulate, sponsor or publish the results of new studies.

Consequently, the suggested solution to this concerns is to implement "systematisity" and "transparency" in all phases of research to ensure that the research is valuable, i.e. "relevant" and "necessary".

To achieve this, an international group of researchers established the Evidence-Based Research Network (EBRNetwork) in Bergen, Norway in December 2014. In 2018 the EBRNetwork got support to establish EVBRES a COST Action funded by the EU for 4 years (2018-2022) aimed at creating an international European-based network to raise awareness of the need to use systematic reviews when planning new studies and when placing new results in context. The sustainability of EVBRES is ensured by the EBRNetwork.

By building the new research on the existing body of evidence and presenting the results in the context of previous results, the evidence-based research approach helps to:

- avoid waste in research by making research more relevant, more ethical and more valuable;
- reduce false positives (type 1 error) and medical reversals;
- concentrate the money spent on research to improve the allocation of resources;
- make better evidence available to facilitate adequately informed choices;
- improve how clinical trials are reported in the media;
- restore the end user's confidence in the investigation.

Stakeholders (especially clinical researchers) will need to invest in learning the knowledge and skills to carry out evidence-based research, however, they will gain a more interesting and relevant research.

In 1994, Professor Doug Altman stated that "We need less research, better research, and research done for the right reasons" (6). By promoting that research should have value for society and scientifically, Evidence-Based Research will help make this a reality.

conflict of interests

Author states that there are no conflicts of interest in preparing the manuscript. The EBR Network does not accept support from health technology companies.

references

(1) Light RJ, Pillemer DB. Summing up. The science of reviewing research. Boston: Harvard University Press; 1984.
(2) Robinson KA, Goodman SN. A Systematic Examination of the Citation of Prior Research in Reports of Randomized, Controlled Trials. Ann Intern Med. 2011; 154(1): 50.
(3) Engelking A, Cavar M, Puljak L. The use of systematic reviews to justify anaesthesiology trials: A meta-epidemiological study. European Journal of Pain. 2018; 22(10): 1844-9.
(4) Bhurke S, Cook A, Tallant A, Young A, Williams E, Raftery J. Using systematic reviews to inform NIHR HTA trial planning and design: a retrospective cohort. BMC Med Res Methodol. 2015; 15: 108.
(5) Clarke M, Hopewell S. Many reports of randomised trials still don't begin or end with a systematic review of the relevant evidence. Journal of the Bahrain Medical Society. 2013; 24(3): 145-8.
(6) Altman DG. The scandal of poor medical research. BMJ. 1994; 308(6924): 283-4.