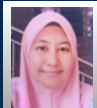
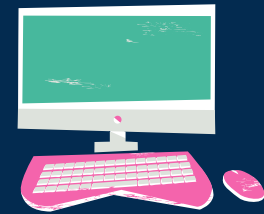


Understanding EVIDENCE-BASED RESEARCH



Summarize by *Salwana Ahmad & Chew BH*



INTRODUCTION

[Access the source of this article here:](#)

The use of previous research findings Numerous studies demonstrate that while planning to begin, fund, regulate, sponsor, or publish the findings of new studies, researchers, research funders, regulators, sponsors, and publishers of research often overlook to use of previous research. It is unethical, unscientific, and wasteful to do research without first carefully examining the evidence of what is already known, especially when the research includes humans or animals.

DEFINITION

'The use of prior research in a **systematic and transparent way** to inform a new study so that it is answering questions that matter in a **valid, efficient and accessible manner**'

ANSWERS TO THE CHALLENGES

CHALLENGES

- Studies published in the journal can not be replicated, never published, redundant and the quality is poor.
- Consequences, the trust and confidence in science is declining.

CONCEPT OF EBR FOR ENSURING VALUABLE RESEARCH

Use scientific methods to:

1. Evaluate performance of research.
2. Improve the way research is conducted.
3. Use scientific methods to monitor research practice over time.

APPROACH TO ACHIEVE AIMS

- ... the use of a systematic and transparent approach when justifying and designing a new study
- ... the use of a systematic and transparent approach when placing new results in the context of existing evidence
- ... more efficient production, updating and dissemination of systematic reviews

THE DIFFERENCE

To formulate the research questions, traditionally they use their scientific environment and context, personal interests and ambitions, and the knowledge base (underpinning epidemiological and basic science research).

"The EBR approach suggests that a systematic and transparent approach should be followed to explicitly use all earlier studies and to consider end user perspectives."

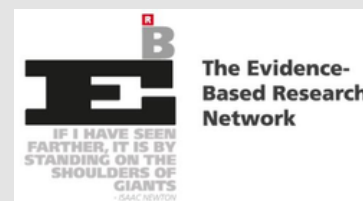


Adapted from Robinson et al., (2020)

THE EVIDENCE-BASED RESEARCH NETWORK

'Evidence-Based Research Network (The [EBRNetwork](#)) was established in Bergen, Norway in December 2014 with initial partners from Australia, Canada, Denmark, the Netherlands, Norway, the UK, and the USA to address the problem related to the EBR. Their aims are to reduce waste in research by promoting the:

- No new studies without prior systematic review of existing evidence.
- Efficient production, updating, and dissemination of systematic reviews.



A NEW WORKING DEFINITION OF A SYSTEMATIC REVIEW:

'The EBRNetwork has suggested:

“a systematic review is a structured and preplanned synthesis of original studies that consists of predefined research questions, inclusion criteria, search methods, selection procedures, quality assessment, data extraction, and data analysis. No original research study should be deliberately excluded without explanation, and the results from each study should justify the conclusion.”

Members of the EBRNetwork published an analysis paper titled **"Towards evidence-based research (Lund et al., 2016)** in the BMJ in 2016 that discussed EBR and its role in minimizing research waste. The article included the **EBR Statement**, which outlined the various stakeholders' roles in achieving EBR's goals, as well as an EBR flow chart to explain the process as in Figure 1 and Figure 2.

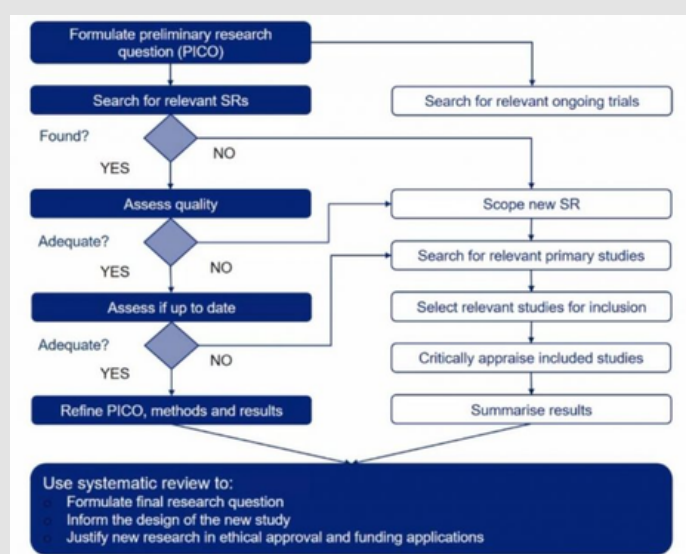


Figure 1 shows the flow chart for EBR adapted from Lund et al., (2016) as shown in the article.

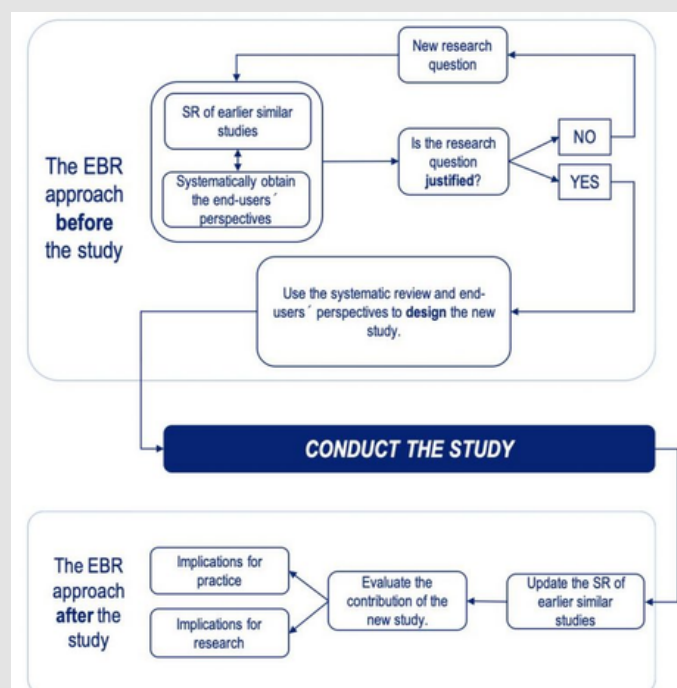


Figure 2 shows the EBR Approach adapted from Robinson KA et al. (2020) that explain the context and importance of EBR What Evidence-Based Research.



A series of Evidence-Based Research articles was published in October 2020, in the Journal of Clinical Epidemiology to further explain the concept and examples of the EBR in use. Click the links to further read the articles:

- 1-What Evidence-Based Research is and why is it important? ([Robinson et al., 2021](#))
- 2-Using an Evidence-Based Research approach before a new study is conducted to ensure value ([Lund et al., 2021](#))
- 3-Using an Evidence-Based Research approach to place your results into context after the study is performed to ensure the usefulness of the conclusion ([Lund et al., 2021](#))

HIGHLIGHT OF THE STUDY FINDINGS

Finding 1: A study by [Robinson and Goodman \(2011\)](#) aimed to assess the extent to which reports of RCTs cite prior trials studying the same interventions. The study included 227 meta-analyses comprising 1523 trials published from 1963 to 2004 and concluded that a median of 2 trials was cited, regardless of the number of prior trials that had been conducted.

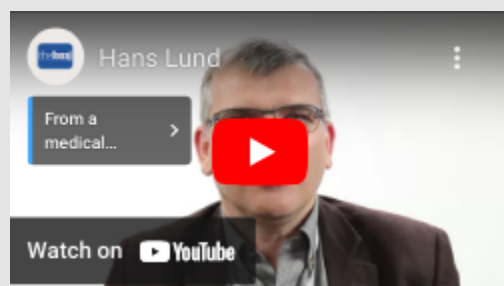
Finding 2: In a descriptive cross-sectional analysis of 622 RCTs published between 2014 and 2016, [Egelking et al., 2018](#) tried to find whether RCTs published in anaesthesiology journals mentioned previous SRs as a rationale for conducting trials and for discussing results. The study found that only 20% explicitly mentioned an SR as justification for the new study and almost half (44%) did not cite a single SR

Finding 3: A study by [Burkhe et al., \(2015\)](#) aimed to determine if there were any changes in the referencing or use of systematic reviews based on the reasons why trials did not reference a systematic review and included a more recent cohort of trials funded in 2013. In the first cohort (2006-2008), 42 of 46 (89%) referred to an SR, while 34 of 34 (100%) referred to an SR in the second cohort (2013). However, very few studies (>90% in both cohorts) employed SRs to inform the design of their new trial in addition to justifying the treatment comparison.

Finding 4: Repeated studies by Clarke and Hopewell (1998;2002;2007;2010) found that RCTs published in the month of May in the five highest-ranking medical journals (JAMA; BMJ; NEJM; Lancet and Annals of Internal Medicine) almost never used an SR. An updated study by [Clarke and Hopewell \(2013\)](#) concluded that no improvement over time. Only 3% of RCTs contain an updated systematic review integrating their results and only 37% make any systematic attempt to place new results in context.

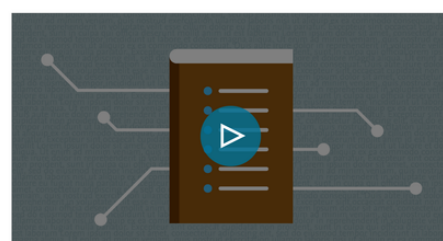
Summary: A systematic and transparent approach is rarely used when citing earlier similar trials, justifying new studies, designing new studies, and placing new results in the context of existing results.

MORE RESOURCES



Prof. Hans Lund spoke about the EBR.
[CLICK HERE TO WATCH.](#)

How to conduct evidence-based research



A webinar “How to conduct EBR” presented by Hans Lund & Klara Brunnhuber. [CLICK HERE TO ACCESS.](#)



Introduction to evidence-based research from Caroline Blaine. [CLICK HERE TO ACCESS.](#)

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