

Evidence-Based Research – placing research in the context of existing knowledge: A systematic review.

Hans Lund

Centre of Evidence-Based Practice, Bergen, Norway

On behalf of the EBRNetwork



**The Evidence-Based
Research Network**

Evidence-Based Research (EBR) is defined as

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

Shortly:

**No new research studies without a
prior systematic review of existing evidence**

OVERALL AIM

To identify and classify all studies identifying or evaluating core aspects of the concept of Evidence-Based Research (EBR).



SPECIFIC AIMS

- What is the current best available evidence on the impact of EBR, i.e. **are systematic reviews used to support decisions to plan, fund, approve, conduct, report, and publish research? If so, are they effective?**
- What is the current **best available evidence of the benefits of EBR?**
- What is the current **best available evidence of harms caused by research that is not evidence-based?**
- What is the current **best available evidence on the perceived or actual adverse effects of EBR?**

METHODS

REGISTRATION

Cochrane Review Methodology Group in September 2015.

ELIGIBILITY CRITERIA

- any study, original study, systematic review, or overview of systematic reviews
- evaluates investigators use of earlier research (e.g. studies, systematic reviews) when planning and/or interpreting results in the context of earlier results.

METHODS

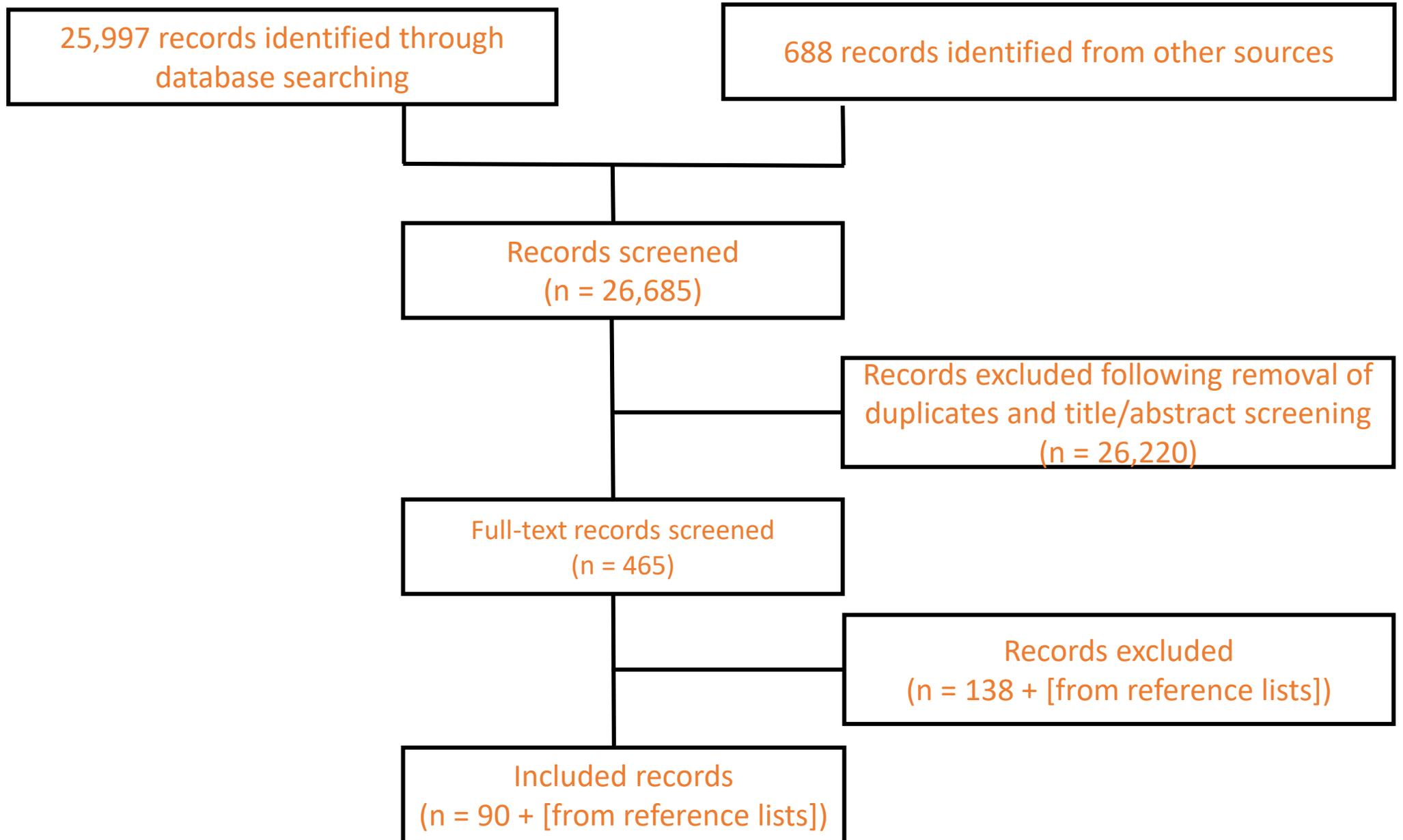
LITERATURE SEARCH

MEDLINE, Embase, CINAHL, Web of Science (Science Citation Index Expanded (SCI-EXPANDED)), Social Sciences Citation Index (SSCI), Arts & Humanities Citation Index (A&HCI), and Cochrane Methodology Register (CMR, Methods Studies) from inception to June 28th 2015.

OTHER SOURCES

- Reference lists of included studies
- Contact with experts within the field of EBR

RESULTS



RESULTS

Given the numerous different study designs represented across the included records, **we decided to prepare a Scoping Review as the first step, then 4 systematic reviews and 2 other papers.**

Collation of Results within the Scoping Review:

1. Use of prior studies
2. Redundant research (includes cumulative meta-analyses)
3. Use of systematic reviews in planning (rationale and design)
4. Use of systematic reviews in placing results in context
5. Citation bias, including:
 1. Prediction of citation: outcome, quality, design
 2. Characteristics of those cited
 3. Choice of citation

RESULTS

The following **4 systematic reviews** are under preparation, including an update of the search:

- 1. The use of prior research in clinical trials**
- 2. The risk of being a test person in a redundant study, and the number of redundant studies published within health science**
- 3. The use of systematic reviews when designing a new study**
- 4. The use of systematic reviews when placing new results in context**

RESULTS

Based on the identification of relevant studies, the following are under preparation:

- 1. Reasons and motivations behind the selection of references for a new scientific paper**
- 2. Bibliographic negligence and the need for researchers to be evidence-based: A historical and theoretical evaluation leading to the concept of Evidence-Based Research.**

PRELIMINARY RESULTS INDICATE

	Number of Studies	References
Continue waste in research due to irrelevant research	10 studies	Lau 1992, Lau 1995; Fergusson 2005; Juni 2004; Poolman 2007; Ker 2012; Andrade 2013; Habre 2014; Clarke 2014; Haapakoski 2015; <i>additional refs ...</i>
No references to all studies	5 studies	Goudie 2010; Robinson 2011; Schrag 2011; Sheth 2011; Sawin 2015; <i>additional refs ...</i>
No use or poor use of systematic review(s) in Introduction	3 studies	Goudie 2010; Clarke 2013; Jones 2013; <i>additional refs ...</i>
No use or poor use of systematic review(s) in Discussion	6 studies	Clarke 1998; Clarke 2002; Clarke 2007; Clarke 2010; Clarke 2013; Helfer 2015; <i>additional refs ...</i>

PRELIMINARY RESULTS INDICATE

	Number of Studies	References
Positive, supportive, and significant studies are more often cited than negative, critical, and non-significant studies	6 studies	Gøtzsche 1987; Puder 1987; Shadish 1995; Greenberg 2009; Fiorentino 2011; Jannot 2013; Sawin 2015; Bastiaansen 2015; <i>additional refs ...</i>
Subjective reasons for choosing references	3 studies	MacRoberts 1986; Amancio 2012; Thornley 2015; <i>additional refs ...</i>
Do not use citations to support the studies	1 study	Pandis 2010; Jones 2013; <i>additional refs ...</i>

DISCUSSION



- No unambiguous terms to search for, thus a challenging search
- A high number of studies were identified, even some more than 30 years old
- So far, all identified studies indicates that the conduct of research is *rarely* evidence-based

DISCUSSION



- Some of the identified studies seem to have performed their analysis because they have seen an issue here
 - there is a need to look for studies not presenting an already identified problem, but simply evaluating research practice in order to “measure” if there is a problem or not.

THESE STUDIES MAY NEED TO BE DONE

PERSPECTIVES



- Identify how, when and what (outcome) to evaluate in order to monitor the impact of an Evidence-Based Research approach when pursuing clinical research.



IF I HAVE SEEN
FARTHER, IT IS BY
STANDING ON THE
SHOULDER OF
GIANTS
- ISAAC NEWTON

The Evidence-Based
Research Network

**Thank you for your
attention**